



Gamified Teacher Training for Child-Friendly Secondary Schools in Jakarta, Indonesia: Joyful Learning and Positive Discipline through Genially

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ABSTRACT

Purpose: This study evaluates the effectiveness of Genially-based gamified training in strengthening secondary school teachers' implementation of joyful learning, positive discipline, child-friendly classroom management, and digital pedagogy. **Methods:** A convergent mixed-methods approach with a one-group quasi-experimental pretest-posttest design involved 72 teachers from eight public and private schools in Jakarta. The six-week program used interactive micro-learning. Tests and classroom observations were analyzed using paired-sample t-tests and Cohen's d; reflective journals and semi-structured interviews were analyzed thematically. **Findings:** Mean scores increased for joyful learning (65.12 to 86.54), positive discipline (63.88 to 86.03), child-friendly classroom management (64.41 to 85.92), and digital pedagogical adaptation (65.03 to 87.11). All gains were significant, $t(71) = 18.73-19.25$, $p < 0.001$, with large effects ($d > 0.80$). Qualitative and observational evidence showed shifts from teacher-centered and corrective practices toward collaborative learning, active participation, reflective discipline, inclusive classroom climates, and student-centered digital media use. Badges, progress tracking, visual storytelling, quizzes, and scenarios sustained engagement, although digital-literacy gaps, unstable internet access, and large classes remained challenges. **Research Implications:** Genially-based gamified micro-learning offers a practice-oriented professional development model for child-friendly secondary schools, but scaling requires mentoring, reliable infrastructure, and institutional support. **Originality:** The study combines gamified micro-learning, joyful learning, positive discipline, and child-friendly education in one intervention and provides mixed-methods evidence from Indonesian secondary schools.



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INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed educational practices, shifting traditional instructional paradigms toward more interactive, flexible, and student-centered learning environments. In contemporary education, digital transformation extends beyond the mere integration of technological tools into classrooms; it encompasses the development of inclusive learning ecosystems that support students' academic achievement, emotional well-being, participation, creativity, and character development (Alam, 2023). As educational institutions increasingly adopt digital technologies, there is a growing need to ensure that technological innovation is aligned with pedagogical approaches that prioritize students' rights, safety, and holistic development. Within this context, the concept of child-friendly schools has emerged as a strategic framework for creating learning environments that are safe, inclusive, participatory, and supportive of students' physical, social, and emotional needs (Iskandar, 2024; Mangestuti et al., 2022; Rahmad et al., 2024).

The implementation of child-friendly school principles is particularly important at the secondary education level, where teachers face increasingly complex challenges associated with adolescent development, behavioral management, social interaction, and digital engagement. Students in junior and senior high schools are exposed to diverse social influences, intensive digital media consumption, and various academic pressures that may affect their motivation, participation, and emotional well-being. Consequently, teachers are required not only to deliver subject

content effectively but also to create supportive learning environments that foster positive relationships, active participation, and responsible behavior. However, many teachers continue to rely on teacher-centered instructional practices, one-way communication patterns, and punitive disciplinary approaches that may hinder student engagement and limit opportunities for meaningful learning experiences (Fitriani & Qodariah, 2021). Such conditions demonstrate a substantial gap between the ideals of child-friendly education and actual classroom practices (Ambarsari & Harun, 2019; Bakhtiar et al., 2024).

Alongside these pedagogical challenges, the acceleration of educational digitalization has generated new demands for teachers' professional competencies. Although schools increasingly utilize digital platforms and online learning resources, many educators still encounter difficulties in integrating technology meaningfully into classroom instruction. In numerous cases, digital tools are primarily used for administrative purposes or content delivery rather than as instruments for fostering interaction, collaboration, creativity, and student engagement (Cobanoglu et al., 2018; Saputri & Hasibuan, 2022). This situation indicates that successful digital transformation requires not only technological infrastructure but also continuous professional development programs that strengthen teachers' pedagogical competence, digital literacy, and classroom management skills.

In response to these challenges, joyful learning and positive discipline have gained increasing attention as essential components of child-friendly educational practices (Effendi, 2023). Joyful learning promotes active participation through engaging, collaborative, and meaningful learning experiences that enhance students' intrinsic motivation, creativity, and emotional involvement (Owney, 2025). At the same time, positive discipline emphasizes constructive behavioral development through empathy, reflection, positive reinforcement, and mutual respect rather than punishment and fear-based control (Landsman & Lewis, 2023). These approaches are particularly relevant in secondary education, where students require supportive environments that encourage autonomy, responsibility, and healthy social interaction. Previous studies have shown that the integration of joyful learning and positive discipline contributes positively to students' academic engagement, classroom participation, emotional security, and overall learning experiences (Markey et al., 2021).

Recent developments in educational technology have introduced gamification as an innovative strategy for increasing motivation, participation, and engagement in learning environments. Gamification involves the integration of game-design elements such as badges, points, challenges, progress tracking, storytelling, and rewards into non-game contexts to create more immersive and enjoyable learning experiences (Christopoulos & Mystakidis, 2023); (Saleem et al., 2022). While gamification has been widely applied in student learning, its potential for teacher professional development has also attracted increasing scholarly attention. Through gamified training environments, teachers can engage in interactive learning experiences that encourage sustained participation, reflection, collaboration, and practical skill development. Among the digital platforms supporting gamified learning, Genially has emerged as a versatile tool that enables the creation of interactive presentations, simulations, quizzes, visual storytelling, and micro-learning modules (Afni & Bektiningsih, 2024; Amjad, 2025; Kuncoro, 2025; Rahmawati et al., 2025).

Previous studies on Genially have primarily examined its use as interactive instructional media for improving students' learning outcomes, problem-solving skills, and engagement. Meanwhile, studies on gamified teacher professional development have demonstrated its potential to enhance teachers' motivation, participation, and digital competencies. However, limited attention has been given to professional development programs that use Genially to integrate joyful learning, positive discipline, child-friendly classroom management, and digital pedagogical adaptation within a unified training framework. Empirical evidence regarding the use of Genially as a gamified micro-learning platform for junior and senior high school teacher development also remains limited, particularly in the Indonesian context. Therefore, this study addresses these gaps by designing and evaluating a Genially-based gamified training program that simultaneously strengthens teachers' competencies in joyful learning, positive discipline, child-friendly classroom management, and digital pedagogical adaptation through a convergent mixed-methods approach incorporating a quasi-experimental pretest–posttest design (Tampubolon et al., 2025). The originality of this study lies in the integration of Genially-based gamification, interactive micro-learning, joyful learning, positive discipline, and child-friendly classroom management into a unified professional development model for secondary school teachers. Unlike previous studies that mainly positioned Genially as student-oriented instructional media, this study examines its function as a platform for practice-oriented teacher professional development and classroom transformation.

Based on the identified research gaps, this study aims to analyze the effectiveness of gamified teacher training using the Genially platform in enhancing the implementation of joyful learning and positive discipline among junior and senior high school teachers in Jakarta, Indonesia. Additionally, the study seeks to examine how interactive micro-learning content can strengthen teachers' pedagogical competencies, improve engagement in professional development activities, and support the broader transformation of child-friendly schools in secondary education. The

findings are expected to contribute to the literature on gamification, digital pedagogy, and teacher professional development while providing practical recommendations for schools, policymakers, and educational institutions seeking to develop adaptive, sustainable, and human-centered professional learning programs in the digital age.

METHOD

This study employed a convergent mixed-methods approach combining a one-group pretest–posttest quasi-experimental design with qualitative inquiry to examine the effectiveness of Genially-based gamified teacher training in strengthening joyful learning, positive discipline, child-friendly classroom management, and digital pedagogical adaptation (Takona, 2024). The quantitative design was represented as O_1-X-O_2 , where O_1 referred to the pretest, X represented the six-week training intervention, and O_2 referred to the posttest. All participants received the same intervention, and no control group was included. Therefore, the results were interpreted as changes following participation in the training rather than definitive causal effects attributable exclusively to the intervention. The convergent design allowed quantitative and qualitative data to be collected during the same research period, analyzed separately, and integrated during interpretation (Johnson & Christensen, 2024). This approach was appropriate because pedagogical transformation involves measurable changes in teachers' knowledge and skills as well as changes in attitudes, reflections, and classroom practices (Bear et al., 2022).

The study was conducted between January and April 2026 in Jakarta, Indonesia. The participants consisted of 72 junior and senior high school teachers from eight public and private secondary schools. They were selected through purposive sampling based on four criteria: having at least two years of teaching experience, actively teaching at the junior or senior high school level, possessing basic digital literacy skills, and demonstrating willingness to participate throughout the training and data-collection process. The intervention consisted of a six-week gamified professional development program delivered through the Genially platform. The program combined synchronous activities, including online workshops, collaborative discussions, pedagogical mentoring, and classroom problem-solving, with asynchronous access to interactive micro-learning modules. The training covered four major themes: joyful learning implementation, positive discipline strategies, child-friendly classroom management, and digital pedagogical adaptation. Digital badges, progress tracking, interactive quizzes, scenario-based activities, achievement challenges, and visual storytelling were incorporated to strengthen participant engagement, motivation, and active participation.

Quantitative data were collected using a 40-item competency instrument comprising 10 items for each of the four domains: joyful learning implementation, positive discipline understanding, child-friendly classroom management, and digital pedagogical adaptation. Responses were rated on a five-point Likert scale ranging from 1, strongly disagree, to 5, strongly agree. The scores were converted to a scale of 0–100 to facilitate comparison between the pretest and posttest results. Joyful learning items measured teachers' abilities to design engaging, collaborative, and meaningful learning activities. Positive discipline items assessed reflective dialogue, empathy, positive reinforcement, and non-punitive responses to student behavior. Child-friendly classroom management items addressed inclusion, safety, student participation, mutual respect, and responsiveness to learner diversity. Digital pedagogical adaptation items measured the interactive and student-centered use of digital technology. Representative items included "I can design learning activities that encourage active student participation," "I can respond to disruptive student behavior without using punitive measures," and "I can use digital media to facilitate interactive and collaborative learning."

Classroom practices were assessed before and after the intervention using a structured observation rubric consisting of 15 items. The rubric covered five dimensions, with three items for each dimension: classroom interaction patterns, student participation, disciplinary approaches, classroom atmosphere, and digital media utilization. The observation indicators examined the extent to which teachers implemented interactive and collaborative instruction, encouraged active student participation, applied reflective and positive discipline, created inclusive and supportive classroom environments, and used digital media in student-centered ways. Observers also recorded field notes to document relevant teacher–student interactions and classroom activities.

Qualitative data were collected through six reflective journals and semi-structured interviews. Participants completed one reflective journal during each week of the training program. The journal prompts addressed their experiences with the Genially modules, the application of joyful learning and positive discipline, perceived changes in classroom participation, and challenges related to digital literacy, internet connectivity, and classroom management. The semi-structured interview guide consisted of eight open-ended questions examining participants' engagement with the training, perceptions of the gamification features, classroom application of the training content, changes in disciplinary practices, digital pedagogical adaptation, and implementation barriers. Interview participants were selected through maximum variation sampling based on teaching experience, school type, and digital competency to obtain diverse professional perspectives (D. Sugiyono, 2013).

The instruments were developed based on theoretical frameworks and previous studies concerning joyful learning, positive discipline, child-friendly education, classroom management, and digital pedagogy. Content validity was assessed through expert judgment involving three educational technology experts and two specialists in child-friendly education and positive discipline. The experts evaluated the relevance, clarity, and alignment of each item with the intended constructs. Reliability was examined using Cronbach's Alpha, with all four competency constructs obtaining coefficients above 0.70, indicating satisfactory internal consistency.

Quantitative data were analyzed using descriptive statistics and paired-sample t-tests with IBM SPSS Statistics Version 27 at a significance level of 0.05. The tests were used to determine differences between the pretest and posttest competency scores. Cohen's d was calculated to determine the magnitude of the intervention effect. Qualitative data from interviews and reflective journals were analyzed thematically through data reduction, initial coding, categorization, theme development, and interpretation. Trustworthiness was strengthened through triangulation of interview, reflective-journal, and classroom-observation data, as well as member checking and peer debriefing (S. Sugiyono & Lestari, 2021). Quantitative and qualitative findings were integrated during the interpretation stage by comparing changes in competency scores with classroom-observation evidence and participants' reported experiences. Participation was voluntary, and all participants provided informed consent before data collection. They were informed about the research objectives, procedures, potential benefits, confidentiality measures, and their right to withdraw. Participant anonymity was maintained through identification codes, and all collected data were used solely for academic purposes.

RESULTS

Changes in Teachers' Pedagogical Competencies

Pretest and posttest data from 72 junior and senior high school teachers were analyzed to identify changes in joyful learning implementation, positive discipline understanding, child-friendly classroom management, and digital pedagogical adaptation. Table 1 presents the descriptive statistics and paired-sample t-test results.

Table 1. Comparison of Teachers' Competencies Before and After the Training Program

Competency domain	n	Pretest M	Posttest M	Mean difference	SD of difference	95% CI of difference	t(71)	p	Cohen's d_z
Joyful learning implementation	72	65.12	86.54	21.42	9.70	[19.14, 23.70]	18.73	< .001	2.21
Positive discipline understanding	72	63.88	86.03	22.15	9.76	[19.86, 24.44]	19.25	< .001	2.27
Child-friendly classroom management	72	64.41	85.92	21.51	9.66	[19.24, 23.78]	18.89	< .001	2.23
Digital pedagogical adaptation	72	65.03	87.11	22.08	9.84	[19.77, 24.39]	19.04	< .001	2.24

Note. SD of difference refers to the standard deviation of paired pretest–posttest difference scores. Cohen's d_z was calculated for paired observations.

All four competency domains showed statistically significant increases from pretest to posttest. The largest mean increase was found in positive discipline understanding, with a mean difference of 22.15, 95% CI [19.86, 24.44], followed by digital pedagogical adaptation, with a mean difference of 22.08, 95% CI [19.77, 24.39]. Joyful learning implementation increased by 21.42 points, whereas child-friendly classroom management increased by 21.51 points. The effect-size values ranged from $d_z = 2.21$ to $d_z = 2.27$.

Changes in Classroom Practices

Classroom observations were conducted before and after the intervention using the 15-item observation rubric. The rubric covered classroom interaction patterns, student participation, disciplinary approaches, classroom atmosphere, and digital media utilization. Table 2 presents a descriptive summary of the observed changes.

Table 2. Descriptive Summary of Classroom Observation Findings

Observation dimension	Before training	After training
Classroom interaction pattern	Predominantly teacher-centered	More interactive and collaborative
Student participation	Generally passive and limited	More active and participatory
Disciplinary approach	Corrective and authority-oriented	More reflective and positive
Classroom atmosphere	Formal and relatively rigid	More inclusive and supportive
Digital media utilization	Primarily used for presentations	More interactive and student-centered

Post-intervention observations recorded greater use of collaborative discussions, problem-solving activities, interactive quizzes, digital simulations, and reflective learning tasks. Students participated more frequently in classroom discussions, asked more questions, and expressed their opinions more actively. Teachers were also observed using scenario-based and project-oriented activities that involved teamwork, critical thinking, and independent learning.

Participants' Perceptions of the Training

The analysis of semi-structured interviews and reflective journals identified three main categories: the practical relevance of the training, engagement with the gamification features, and changes in classroom implementation. Participants described the training as more practical and participatory than professional development activities dominated by lectures and note-taking. The classroom scenarios and problem-solving activities were repeatedly associated with opportunities to apply the training content to situations encountered in schools. One participant explained:

"Usually training programs only involve listening to presentations and taking notes, but in this program we directly practiced solving classroom problems that frequently occur during teaching activities. I became more aware of how to apply positive discipline without scolding students." (Participant 08, Interview, February 2026).

Another participant reported that the scenarios reflected situations commonly encountered in the classroom:

"The classroom scenarios felt very realistic because they reflected situations that we often face in school. This made it easier for me to understand how to respond to student behavior in a more positive way." (Participant 17, Interview, February 2026).

Participants also reported changes in their instructional practices following the training. These changes included the use of interactive quizzes, small-group discussions, collaborative tasks, and technology-supported activities. One teacher stated:

"I started using interactive quizzes and small-group discussions after joining the training. Students became more active and more confident in expressing their opinions during classroom activities." (Participant 24, Interview, March 2026).

A reflective journal entry similarly described changes in the classroom atmosphere:

"The atmosphere in my classroom became more relaxed and supportive. Students seemed more enthusiastic because learning activities were no longer repetitive and monotonous." (Participant 31, Reflective Journal, March 2026).

Engagement and Motivation During the Training

Interview and reflective-journal data showed that digital badges, progress tracking, interactive quizzes, visual storytelling, and challenge-based activities were frequently mentioned in relation to participant engagement. Participants reported that progress indicators helped them monitor module completion and encouraged them to continue through each stage of the program. One participant stated:

"Digital badges and progress tracking motivated me to complete every stage of the training modules. It felt more engaging than traditional workshops because I could clearly see my progress." (Participant 41, Interview, March 2026).

The challenge-based format was also associated with curiosity about subsequent activities:

"Each module felt like a mission that needed to be completed. I was always curious about what activities would appear next." (Participant 29, Reflective Journal, March 2026).

Participants additionally reported that visual storytelling and simulations supported their interaction with the training content:

"The visual storytelling and simulations made the content easier to understand. Instead of simply reading material, we could interact with it and immediately apply what we learned." (Participant 45, Interview, March 2026).

Challenges Encountered During Implementation

Three recurring challenges were identified from the interviews and reflective journals: differences in digital literacy, unstable internet connectivity, and difficulties in consistently applying positive discipline in large and behaviorally diverse classrooms. Teachers with less experience using educational technology reported requiring additional time to become familiar with the interactive platform:

“At the beginning, I needed more time to understand how to use some of the interactive tools because I was not accustomed to this type of digital platform.” (Participant 14, Interview, February 2026).

Internet connectivity occasionally disrupted access to multimedia materials during asynchronous activities:

“Sometimes the internet connection affected my ability to access the modules smoothly, especially when multimedia content was involved.” (Participant 37, Reflective Journal, March 2026).

Participants also reported that applying positive discipline required consistency and emotional self-regulation, particularly when managing large classes:

“Sometimes it is difficult to maintain a calm and reflective approach when managing a large classroom, but this training helped me become more patient and communicative.” (Participant 52, Reflective Journal, March 2026)

Another participant highlighted challenges associated with differences in students' motivation and self-control:

“Positive discipline works well, but it requires consistency. There are situations where managing adolescent behavior can be challenging, especially when students have different levels of motivation and self-control.” (Participant 63, Interview, March 2026).

DISCUSSION

The findings of this study demonstrate that Genially-based gamified teacher training significantly improved teachers' competencies in implementing joyful learning, positive discipline, child-friendly classroom management, and digital pedagogical adaptation. The significant increase in post-test scores across all competency dimensions indicates that the integration of gamification and interactive micro-learning successfully facilitated meaningful professional learning experiences among secondary school teachers. These findings suggest that teacher professional development becomes more effective when participants actively construct knowledge through engagement, reflection, collaboration, and problem-solving rather than passively receiving information (Wijoyo, 2025). The results further indicate that digital professional development programs can serve as effective mechanisms for strengthening teachers' pedagogical readiness and supporting educational transformation in contemporary secondary education settings, where teachers are increasingly required to address complex academic, social, emotional, and technological challenges. The effectiveness of the intervention demonstrates the potential of gamified learning environments to support sustainable professional growth and pedagogical innovation among teachers in the digital era (Buschmann, 2024; Liu et al., 2023).

One of the most significant findings concerns the improvement in joyful learning competency. Prior to the intervention, many teachers still relied on teacher-centered instructional approaches characterized by one-way communication, lengthy explanations, and limited student participation (Sun et al., 2024). Following participation in the training program, teachers increasingly adopted collaborative discussions, interactive quizzes, classroom simulations, project-based activities, and reflective learning tasks. This shift is particularly important in secondary education because adolescent learners are more likely to engage in learning when classroom activities provide opportunities for autonomy, social interaction, creativity, and meaningful participation (Foster & Shah, 2020). The findings suggest that joyful learning should not be interpreted merely as creating entertaining classroom activities, but rather as establishing learning environments that encourage emotional engagement, intrinsic motivation, active participation, and positive learning experiences (Cronqvist, 2021). The observed increase in student confidence, classroom participation, and learning enthusiasm reported by participants further supports the argument that emotionally supportive learning environments contribute significantly to instructional effectiveness and student engagement (Andayanie et al., 2025).

Another important finding relates to the substantial improvement in positive discipline competency, which recorded the highest gain among all measured indicators. This result suggests that classroom discipline remains one of the most challenging aspects of teaching at the secondary school level. Adolescent learners often experience emotional fluctuations, peer influence, behavioral challenges, and varying levels of learning motivation, creating complex classroom management situations for teachers. Before participating in the training, several teachers reported relying on

corrective and authority-oriented disciplinary practices. However, after the intervention, participants increasingly applied reflective dialogue, positive reinforcement, empathy-based communication, and restorative approaches when responding to student behavior. These changes indicate that teachers began to view discipline as a developmental and educational process rather than merely a mechanism for controlling behavior. The findings also suggest that positive discipline contributes not only to classroom order but also to the development of psychological safety, mutual respect, emotional regulation, and stronger teacher–student relationships. Such conditions are particularly important in secondary education because positive social-emotional relationships often serve as the foundation for effective learning and responsible student behavior (Burden, 2025; Gandzel, 2022; Patel, 2021).

The observation findings indicate that pedagogical transformation occurred not only at the level of knowledge acquisition but also within actual classroom practices. Prior to the intervention, instructional activities were predominantly characterized by teacher-centered communication and limited opportunities for student interaction. Following the training program, teachers increasingly facilitated collaborative learning, inquiry-based discussions, peer interaction, reflective activities, and technology-supported learning experiences (Budnyk, 2021).

These findings suggest that the training successfully bridged the gap between pedagogical theory and classroom implementation, a challenge frequently identified in teacher professional development programs. The integration of classroom simulations, collaborative problem-solving activities, and reflective tasks allowed teachers to contextualize theoretical concepts and apply them within authentic instructional situations. Consequently, the training promoted observable behavioral changes rather than merely increasing conceptual understanding. This finding reinforces the importance of practice-oriented professional development models that emphasize experiential learning, reflection, and contextual application in supporting sustainable pedagogical change (Greaves & Vlachopoulos, 2023).

The findings further demonstrate the important role of gamification in enhancing teacher engagement throughout the professional development process. Participants consistently described the training as more enjoyable, motivating, interactive, and relevant than conventional professional development programs. The integration of digital badges, progress tracking systems, interactive quizzes, classroom case simulations, and achievement-based activities appeared to strengthen learning persistence and motivation among participants (Berestok, 2021). These findings suggest that gamification functions not merely as a technological feature but as a pedagogical mechanism capable of fostering active participation, intrinsic motivation, and reflective learning. In professional development contexts, where training activities are often perceived as repetitive and disconnected from practical teaching realities, gamification appears to create a more meaningful and engaging learning experience (Robles et al., 2023). Consequently, participants were more willing to complete learning activities, explore instructional innovations, and apply newly acquired knowledge within their classrooms.

Another significant finding concerns the role of Genially as an interactive micro-learning platform. Unlike conventional professional development programs that frequently rely on lengthy presentations and information-heavy workshops, Genially enabled participants to access content through visually rich, interactive, and modular learning experiences. The micro-learning format appeared particularly beneficial because participants were able to complete learning activities gradually while balancing teaching responsibilities, administrative duties, and extracurricular commitments. This flexibility reduced barriers to participation and promoted more manageable learning experiences. The findings suggest that combining micro-learning and interactive digital media may enhance accessibility, engagement, and learning effectiveness by reducing cognitive overload and allowing participants to learn at their own pace. Therefore, the success of the intervention can be attributed not only to gamification but also to the accessibility, flexibility, and interactivity provided by the digital learning environment (Bitar & Davidovich, 2024).

Despite the positive outcomes, several implementation challenges were identified. Differences in digital literacy, internet accessibility, and familiarity with online learning environments influenced participants' experiences, particularly during the early stages of the program. Some teachers also reported difficulties in consistently implementing positive discipline strategies within classrooms characterized by large student populations and diverse behavioral characteristics. These challenges indicate that successful educational transformation cannot rely solely on technological innovation. Sustainable implementation requires adequate technological infrastructure, institutional support, continuous mentoring, leadership commitment, and opportunities for ongoing professional learning. Without these supporting conditions, even effective professional development programs may face limitations in generating long-term instructional change. Therefore, future implementation efforts should integrate technological interventions with broader organizational development strategies to maximize their impact on educational practice (Ezinwa, 2024).

A major contribution of this study lies in its focus on secondary school teachers. Existing studies have predominantly examined gamification in student learning contexts or among elementary school teachers, whereas relatively limited attention has been given to integrated professional development programs for junior and senior high school teachers (Ding et al., 2023). The present study demonstrates that gamified teacher training can effectively

strengthen pedagogical competencies while simultaneously supporting the implementation of joyful learning, positive discipline, and child-friendly school principles within secondary education settings (Krishnan et al., 2021). By integrating these dimensions into a single intervention framework, the study contributes new empirical evidence regarding how digital pedagogy can support both instructional improvement and school culture transformation in contexts characterized by adolescent developmental challenges and increasing digitalization. This contribution helps address an important gap within the existing literature on teacher professional development and educational innovation (Rulyansah et al., 2023).

From a theoretical perspective, the findings support the argument that technological innovation becomes most effective when combined with human-centered pedagogical values. Joyful learning, positive discipline, child-friendly education, and digital pedagogy should not be viewed as separate educational concepts but rather as complementary dimensions of effective teaching practice. From a practical perspective, the findings provide evidence that Genially-based gamified training can serve as a scalable and sustainable model for strengthening teachers' competencies in contemporary educational settings. Educational institutions, policymakers, and teacher training providers may therefore consider incorporating gamification, micro-learning, positive discipline, and child-friendly educational principles into future professional development initiatives. Ultimately, sustainable educational transformation requires balancing technological advancement with empathy, participation, inclusivity, and meaningful learning experiences that support both teacher development and student well-being.

CONCLUSION

This study found that teachers demonstrated significant improvements in joyful learning, positive discipline, child-friendly classroom management, and digital pedagogical adaptation after participating in the six-week Genially-based gamified training program. Classroom observations, reflective journals, and interviews also indicated increased use of interactive learning activities, reflective disciplinary practices, supportive classroom environments, and student-centered digital media. Gamification features, including digital badges, progress tracking, interactive quizzes, visual storytelling, and scenario-based activities, were frequently associated with participant engagement and motivation. These findings suggest that Genially-based gamified micro-learning can serve as a relevant professional development approach for supporting child-friendly practices among secondary school teachers.

The findings should nevertheless be interpreted with caution. The study employed a one-group pretest–posttest design without a control group; therefore, the observed improvements cannot be attributed exclusively to the training intervention. The use of purposive sampling involving 72 teachers from eight schools in Jakarta also limits the generalizability of the results to other educational contexts. In addition, the six-week implementation period did not allow an assessment of whether changes in teachers' competencies and classroom practices were sustained over time. Practically, schools and teacher-training providers may adopt the program through six-week modular training that combines interactive Genially content, classroom scenarios, reflective tasks, and continuous mentoring. Program effectiveness should be monitored using pretest–posttest competency assessments, structured classroom observations, module-completion data, and follow-up evaluations. Adequate internet access, introductory digital support, and school leadership commitment are also required, particularly for teachers with different levels of digital literacy.

Future studies should employ experimental or quasi-experimental designs with comparison groups, larger and more diverse samples, and longitudinal follow-up assessments. Further research should also examine changes in student engagement, behavior, well-being, and learning outcomes to determine whether improvements in teachers' competencies produce sustained benefits for students and school culture.

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AUTHOR CONTRIBUTION STATEMENT

SA and NN contributed to the conceptualization of the study, research design, data collection, data analysis, interpretation of findings, and manuscript writing. All authors have read and approved the final version of the manuscript.

AI DISCLOSURE STATEMENT

The authors declare that artificial intelligence (AI) tools were used in a limited capacity to assist in language refinement and improving the clarity of the manuscript. All concepts, analyses, interpretations, and conclusions presented in this study are the original work of the authors, and the authors take full responsibility for the content of this manuscript.

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