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Improving Teachers' Digital Pedagogy Through the Use of Interactive Multimedia Using Genially in Elementary School Learning at the Pringgodani Cluster Teachers' Working Group

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ABSTRACT

Teachers must have the ability to align learning objectives with students' diverse characteristics in the digital era; therefore, teachers' classroom management skills need to be improved, especially in mastering, analyzing, and wisely utilizing technology-based learning media. This community service activity aims to provide knowledge insights and improve digital pedagogy by creating interactive multimedia through training and mentoring using the Genially application in learning for elementary school teachers at the Pringgodani Cluster Teachers' Working Group (KKG) in Semarang. The methods used include lectures, pre-tests and post-tests, training and mentoring, demonstrations, simulations, and assignments. The results of the community service implementation show an improvement in teachers' knowledge and skills in creating interactive multimedia, as evidenced by the average pre-test score of 56.08% and post-test score of 84.13%, indicating an increase of 28.1%. This community service activity concludes that the training and mentoring on the development of interactive multimedia using Genially in IPAS learning improves the knowledge and digital pedagogy of elementary school teachers at the Pringgodani Cluster Teachers' Working Group (KKG) in Semarang.

Keywords: digital pedagogy, genially, interactive multimedia

INTRODUCTION

In the era of education that is increasingly affected by technological advancement, teachers must have skills in the use of technology as well as the wisdom to apply technology in classroom learning. The involvement of technology in various aspects of learning carried out by teachers indicates that digital literacy has become a necessity in supporting student learning. Teachers' readiness and skills in using technology to support the diversity of students' learning needs in the digital era in learning aim to create 21st-century learning (Asmoro et al., 2021). Teachers' readiness relates to digital literacy skills, the availability of facilities and infrastructure, student characteristics, and proficiency in using technology (Yuniarti et al., 2021). Along with that, students who grow up in the midst of the digital era demand the wise implementation of technology as a response to learning needs that are relevant to the times.

Teachers must have the ability to align learning objectives with students' diverse characteristics in the digital era; therefore, teachers' classroom management skills need to

be improved, especially the skills to master and utilize technology-based learning media, one of which is digital pedagogy. Digital pedagogy refers to teachers' ability to use and utilize technology in designing learning to develop students with critical thinking skills, adaptability, and social intelligence (Purfitasari et al., 2019). In short, digital pedagogy refers to the use of electronic elements to enhance or transform the educational experience (Croxall & Koh, 2012). In addition, teachers are also required to have ethics in the use of technology as a medium for learning, instructional materials, and learning evaluation. Teachers need to respond to the flow of information more wisely by filtering information that is accurate, appropriate, and not misleading, so that the learning materials provided to students can meet their learning needs (Ramdhan et al., 2021) and support the development of teachers' pedagogical competence as educators.

Pedagogic competence encompasses skills in managing the learning process, curriculum design, implementation of instruction, evaluation of learning outcomes, and development of students to optimize their various potentials (Wiratmaja, 2022). The roles and responsibilities of teachers in learning design are closely linked to pedagogic competence (Purnasari & Sadewo, 2020). Teachers with teaching skills are expected to design or develop effective and efficient technology-based learning activities. Digital pedagogy should not be viewed merely as the use of digital technology in a teacher-led approach; rather, it also encompasses practices where technology, information, and communication technology (ICT), are used to enable collaboration, creation, and active information use by students (Prestridge, 2012). One such area of competence is the absolute mastery by teachers of models, methods, strategies, and teaching techniques, and their ability to apply these in the teaching process (Nur, 2014).

The pedagogic competence of a teacher in designing learning that meets needs is crucial for achieving the set educational goals, yet in reality, many teachers still fail to meet or achieve the necessary pedagogic competence (Purnasari & Sadewo, 2020). This is evidenced by problem identification results conducted in the Teacher Working Group of Diponegoro Cluster, West Ungaran District, Semarang Regency. Several issues are hindering the development of digital pedagogy among elementary school teachers. The main problems include the minimal organization of activities to improve digital pedagogy, low skills and creativity of teachers in integrating technology into teaching, and a lack of understanding among teachers in designing technology-based learning. This results in poor learning quality and low student engagement in the learning process. Teachers' learning management skills still need to be enhanced, particularly in mastering and utilizing technology in teaching. Teachers must be able to align learning objectives with the unique characteristics of students in the digital generation.

As a solution to overcome these problems, the Community Service Team of the Elementary Teacher Education Program (PGSD) at Universitas Negeri Semarang conducted an activity to improve elementary school teachers' digital pedagogy through the development of technology-based learning media in the form of interactive multimedia using Genially in a workshop format. By implementing this activity, it is expected that elementary school teachers at the Pringgodani Teachers' Working Group (KKG) will enhance their skills and understanding related to digital pedagogy, enabling them to design more engaging and meaningful learning experiences for students. Through this effort, it is hoped that education in the digital era can run more effectively and efficiently, and equip students with the skills needed to face future challenges.

Genially is a digital platform designed to support interactive learning by presenting materials in a dynamic and engaging format (Safira & Suprayitno, 2024). Learning media based on Genially has several advantages that traditional media do not possess. In addition to its attractive design, this platform allows for modular content arrangement, thereby

facilitating teachers in delivering materials according to students' needs (Paramita et al., 2025).

This is in line with the study conducted by Permatasari et al., (2021) which found that the use of Genially has several advantages, including: (1) creating content that captivates the audience due to the availability of hundreds of templates; (2) creating interactive content that supports an interactive visual experience and enhances communication with the audience; and (3) developing interactive presentations and modules with animation creations integrated with the internet. This is supported by a study conducted by Mariana et al., (2024), which showed that the implementation of Genially-based monopoly media can improve student learning outcomes, as this media involves students directly in the learning process, making the learning experience more engaging and enjoyable.

The success of education in elementary schools is partly determined by the teacher's ability to use digital learning and collaborate with students through active information exchange. Therefore, this community service workshop not only equips teachers with a series of workshop activities and materials but also inspires them to deliver differentiated learning that is enjoyable, meaningful, and fosters students' critical thinking skills, adaptability, and social-emotional intelligence in the classroom. Enjoyable learning enables mastery and the achievement of learning objectives (Suyadi, 2010). Based on the background description, this community service activity aims to provide knowledge insights and improve digital pedagogy through training and mentoring in creating interactive multimedia using the Genially application in learning for elementary school teachers at the Pringgodani Cluster Teachers' Working Group (KKG) in Semarang.

METHOD

This community service activity consisted of a series of programs carried out from March to September 2024 at the Pringgodani Cluster in Semarang. The participants consisted of 45 elementary school teachers from the Pringgodani Teachers' Working Group (KKG), representing eight public elementary schools: SDN Langensari 01, SDN Langensari 02, SDN Langensari 03, SDN Langensari 04, SDN Candirejo 01, SDN Candirejo 02, SDN Gogik 01, MI Gogik, and SD Islam Gintungan. Each school sent representatives comprising one principal and four classroom teachers, consisting of Grade 3, 4, 5, and 6 teachers. The selection was based on the number of teachers participating in self-competency development programs, the number of teachers using technology in learning, and their competence in designing instructional plans and producing learning media.

The stages of the community service activity included the preparation, implementation, and evaluation phases. The preparation phase began with observation, interviews, and a request for permission in March 2024 to confirm the school's willingness to serve as a community service partner. The initial observation started with a visit by the head of the community service team to SDN Langensari 02 to specifically identify the problems faced by teachers in the cluster. The main problems included the limited implementation of activities to improve digital pedagogy, the low level of teachers' pedagogical skills and innovation in adopting technology in the teaching and learning process, and the limited competence of teachers in designing instructional plans that incorporate technology.

Subsequently, the head of the community service team also requested permission and interviewed with the principal of SDN Langensari 02, Mr. Mohamad Ali Munawir, S.Pd., M.Si., to carry out the community service activity as part of the Tri Dharma of Higher Education (a fundamental principle of Indonesian Higher Education, comprises education, research, and community service). Based on the interview results, the workshop topic was

determined through brainstorming with the members of the community service team, namely, improving teachers' digital pedagogy through the use of interactive multimedia using Genially. The final stage of this preparation phase was the development of materials relevant to the needs of the partner. After that, the team divided the community service materials according to each member's expertise based on the agreed topic and prepared a supporting module. The first speaker, Dr. Sri Sulistyorini, M.Pd., delivered material on the implementation of differentiated learning in the Merdeka Curriculum, and the second speaker, Aldina Eka Andriani, S.Pd., M.Pd., shared knowledge on creating interactive multimedia using Genially to enhance elementary school teachers' digital pedagogy.

At the implementation stage of the community service activity in the form of a workshop, the event began with participant registration, followed by an opening ceremony attended by the Regional Coordinator, the Head of the Pringgodani Cluster Teachers' Working Group (KKG), and the Head of the Community Service Team. Before entering the core material, participants were given a pre-test to measure their initial knowledge about the implementation of the Merdeka Curriculum and the application of digital pedagogy aspects in the use of technology-based learning media. The workshop materials included the implementation of differentiated learning in the Merdeka Curriculum and the creation of interactive multimedia using Genially to improve the digital pedagogy of elementary school teachers. After the material presentation, participants were provided with assistance and opportunities for discussion, then practiced and presented the results of their interactive multimedia projects using Genially, particularly in the creation of an educational Snake and Ladder game. At the end, participants were given a post-test to assess the knowledge and digital pedagogy gained after participating in the activity.

The evaluation stage included data processing by calculating the average scores from the pre-test and post-test results, and participants were also given the opportunity to express their messages, impressions, and suggestions regarding the implementation of the community service activity in the form of open statements.

RESULTS AND DISCUSSION

This The implementation of the community service activity was designed in the form of a workshop with the theme "Improving Digital Pedagogy through the Use of Interactive Multimedia Using the Genially Application for Elementary School Teachers," which was conducted in a blended format, combining face-to-face offline sessions for material delivery and online sessions via digital platforms such as WhatsApp Group and Zoom Meeting to provide intensive mentoring on the development of interactive multimedia based on Genially for the 45 participating teachers.

a. Implementation Stage

The first stage of the service workshop was conducted offline. Participants engaged in training and material socialization sessions led by two speakers on Saturday, August 31, 2024, starting at 08:00 WIB until completion. This community service activity began with participant registration, followed by an opening ceremony featuring speeches from various stakeholders, including the Regional Coordinator, Task Force Head, and the Head of the Organizers. The ceremony was followed by a prayer, and participants then completed a pre-test to assess their initial understanding of digital pedagogy, differentiated learning, and interactive multimedia using Genially Inspire.

The first material was presented by Dr. Sri Sulistyorini, M.Pd., focusing on the Implementation of Differentiated Learning in the Merdeka Curriculum. The presentation aimed to encourage workshop participants to apply learning differentiation, including differentiation of process, product, content, and environment. The speaker advised that

student grouping in differentiated learning should be based on readiness and basic ability rather than learning style. Educators should expand and develop students' learning methods to ensure they are not confined to a particular way of learning. This is because the objectives can be achieved by integrating various methods, such as reading descriptions, viewing examples, watching videos, imitating/applying, practicing, etc. Thus, educators need to combine varied teaching materials and methods. The presentations by the first and second speakers are illustrated in Figure 1 below.



Figure 1. Presentation of material by speakers 1 Figure 2. Presentation of material by speakers 2

The second topic, discussed by Aldina Eka Andriani, S.Pd., M.Pd., focused on creating interactive multimedia using Lectora and Genially Inspire to improve digital pedagogy for elementary school teachers. Genially Inspire is a web-based platform that allows for the easy and quick creation of interactive multimedia content (games & challenges, presentations, quizzes, infographics, animations), facilitating engaging and meaningful technology-based learning. Participants were directed to practice creating interactive multimedia learning materials using Genially Inspire.

The learning multimedia created during the practice session was in the form of a Games and Challenges feature titled "Snakes and Ladders." This interactive multimedia could be played in groups and was equipped with quizzes or questions placed at certain points, which had to be answered by students or players who landed on those specific points. The quiz or interactive question feature allows teachers to directly assess students' understanding and provide immediate feedback. This helps students quickly identify their strengths and weaknesses, so they can focus on areas that need improvement (Nurjannah et al., 2025). Genially is also equipped with technical implementation features, such as agreement-based rules including score addition if students answer correctly, step reduction if they answer incorrectly or imprecisely, or allowing students to roll the dice again if they get a six, and so on. These agreed-upon rules are combined with the use of "Snakes and Ladders" in Genially, which presents the concept of interactive multimedia while still supporting student-centered learning.

The activity continued with a discussion and Q&A session, presentation/explanation of interactive multimedia development based on the Snake and Ladder Games and Challenges feature using Genially, and a post-test to assess improvements in digital pedagogy and differentiated learning. One of the participants presented a project titled "Interactive Multimedia in the Form of Games and Challenges: Snake and Ladder" on the topic "Let's Get to Know the Animals Around Us," intended for Grade 3 elementary school students, using word problems to increase students' interest in science learning in elementary school. In addition, the participant emphasized that variation in question stimuli and formats is also necessary to facilitate students in developing critical thinking skills, thereby enabling effective digital pedagogy on the teacher's part. This is supported by (Wulandari, 2023), who states that Genially allows the integration of learning elements such as text, video, images, animation, and interactive quizzes, which are capable of capturing students' attention. The presentation of the participant's work is shown in Figure 3 below.



Figure 3. Presentation of interactive multimedia work by a participant

b. Evaluation Stage

The second phase of the workshop was conducted on Saturday, September 7, 2024, online using WhatsApp Group, Zoom meetings, and Google Forms to assist and evaluate the tasks assigned to participants. The service team then reviewed and provided feedback on the participants' work. The results of the tasks submitted by participants are displayed in Figure 4 below.

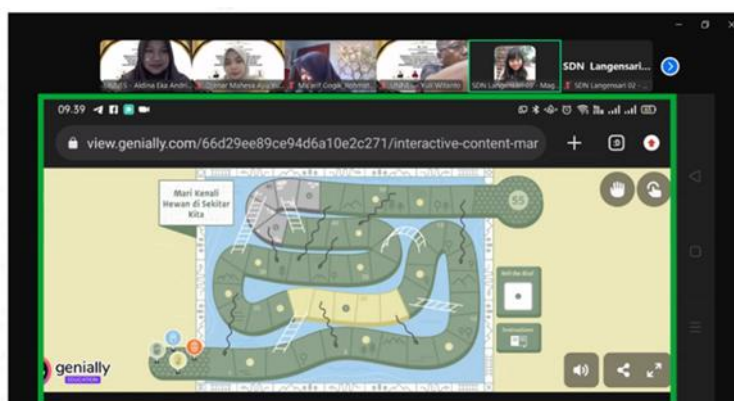


Figure 4. Results of interactive multimedia creation using genially inspire by workshop participants

The evaluation of the implementation of the community service workshop indicated several aspects of success, namely the achievement of the activity objectives, the effectiveness of material delivery, and the improvement of participants' digital pedagogy competence (as reflected in the pre-test and post-test results). The pre-test and post-test results of the workshop participants can be seen in Table 2, showing a 28.1% increase in participants' knowledge and understanding. This is in line with a study conducted by Nurhalifah & Falah, (2024) at SDN 2 Puteran, Tasikmalaya Regency, which found a significant increase in the understanding of fourth-grade students after the implementation of Genially-based learning media, as indicated by the students' average pre-test score of 58.92, which increased by 23.58 to 82.5 in the post-test. These results demonstrate that the use of Genially-based learning media effectively improves the understanding of fourth-grade students. The results of the pre-test and post-test of the community service workshop participants are shown in Table 2 below.

Table 2. Pre-test and post-test results of participants

Score Range	Category	Respondents (Pretest)	Percentage (Pretest)	Respondents (Posttest)	Percentage (Posttest)
0-50	Very Poor	23	50.00%	2	4.26%
51-60	Poor	18	39.13%	3	6.38%
61-70	Sufficient	5	10.87%	7	14.89%
71-80	Good	0	0.00%	15	31.91%
81-100	Very Good	0	0.00%	20	42.55%
Average		56.08 (Poor)		84.13 (Very Good)	

To ensure the smooth and effective implementation of the community service activities, the service team involved three students as assistants. These students were tasked with assisting in various aspects of the activity, from preparation through to execution and evaluation. Additionally, the involvement of students aimed to provide them with hands-on experience in community service activities and to enhance their skills in collaboration, independence, and creativity.

This community service workshop, themed “Improving Digital Pedagogy through the Use of Interactive Multimedia Lectora and Genially Inspire Based on Virtual Laboratory in Differentiated Learning for Elementary School Teachers,” can be deemed successful. This success is attributed to the excellent cooperation and collaboration between the service team and partners, as well as the participants' efforts in creating interactive multimedia using the Genially application.

The implementation of the community service workshop had a significant positive impact, as reflected in the achievement of one of the activity's objectives, namely the creation of interactive multimedia using the Genially application. This was reinforced by the provision of a supporting module to the participants, entitled “Improving Digital Pedagogy through the Use of Interactive Multimedia Using Genially for Elementary School Teachers,” to deepen their understanding. The use of Genially as a technology-based learning medium can serve as an alternative for teachers in designing enjoyable and meaningful learning experiences (Rajab et al., 2025). In addition, this was evident from the quality of the participants' assignments as well as their satisfaction and enthusiasm in participating in the workshop. The quality of the tasks and their relevance to the learning objectives set by the participants are illustrated in Figure 5 below.

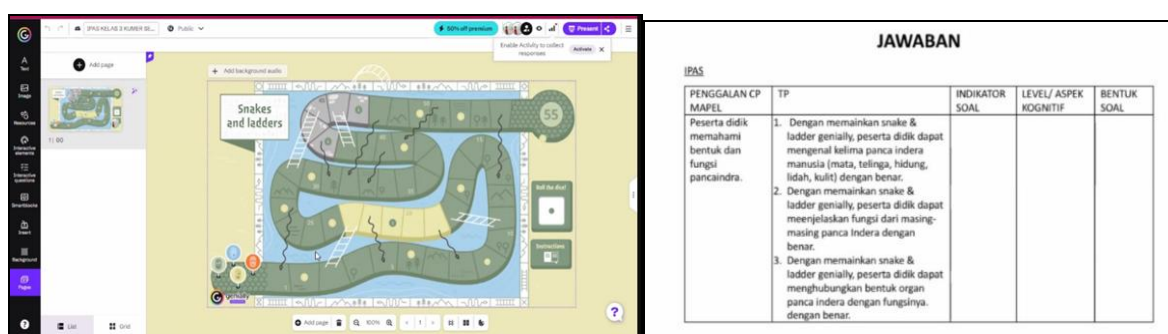


Figure 5. Quality of tasks and relevance to learning objectives created by participants

The second achievement was the generally well-executed coverage of the prepared material. Material delivery was conducted offline, while online support was provided for participant assignments as a reinforcement and follow-up to the tasks already submitted by the participants. The community service workshop material was also packaged in the form of a companion module, which could be accessed by participants anytime, anywhere. This supports the findings by Fong et al., (2022) that workshops utilizing companion

modules, which emphasize experiential and direct learning, make the process enjoyable and effective. This companion module includes content related to differentiated learning, digital pedagogic competencies, the creation of interactive multimedia using Lectora and Genially Inspire applications, and evaluation, thereby significantly aiding participants' understanding.

The third achievement was the improvement of knowledge regarding the implementation of differentiated learning and the participants' digital pedagogy skills in analyzing the use of technology aligned with the characteristics and needs of students within their respective school environments and individual classrooms. The effectiveness of digital teaching methods is reflected in the increase in the average pretest and posttest scores, which initially rose from 56.08% to 84.13%, an increase of 28.1%. This improvement is illustrated in Figure 6 below.

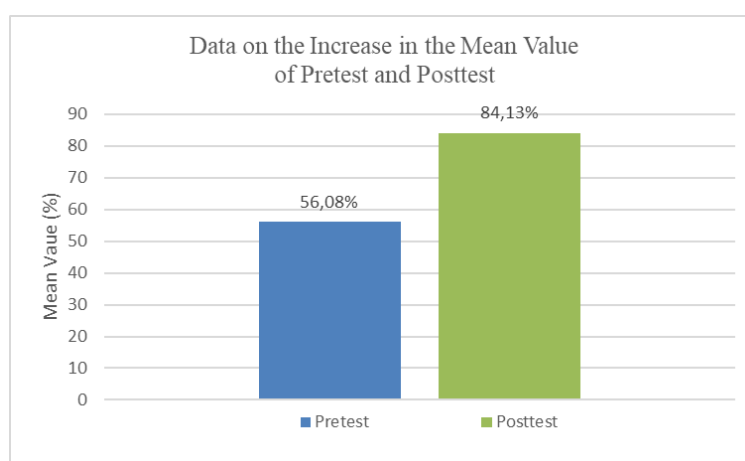


Figure 6. Improvement of workshop participants' digital pedagogy

The community service workshop is expected to contribute positively to improving the quality of learning in elementary schools through the development of teachers' capacity in various aspects, including knowledge, skills, and confidence in implementing interactive multimedia in differentiated learning based on the Merdeka Curriculum, to create engaging, meaningful, and high-quality learning experiences. This is supported by the analysis of open-ended statements submitted by the participants, which showed that they were very pleased with the implementation of this community service activity and expressed positive impressions of all speakers and the UNNES (Universitas Negeri Semarang) community service team involved in the program.

CONCLUSION

A comprehensive evaluation of the implementation of the community service program yielded significant findings regarding the effectiveness of the intervention in improving teachers' digital pedagogy. The evaluation results indicate the success of the program in three fundamental aspects: (1) the facilitation of in-depth understanding of interactive learning media construction, which contributed to the optimization of participants' digital literacy; (2) the implementation of the training curriculum through a blended learning modality that integrated offline sessions, online mentoring, and the distribution of supporting modules; and (3) the measurable cognitive and technical skill improvement of teachers with a significance of 28.1%, as evidenced by the comparison of pre-test and post-test scores, which increased from 56.08% to 84.13%. The coherence between the workshop implementation and teachers' professional development needs has

contributed to strengthening the pedagogical capacity of elementary school educators in developing interactive learning instruments, which implies the potential for improving the quality of the learning process.

Based on empirical evidence of the success of this intervention, it is recommended that the program be expanded through the dissemination of similar training models to other educational institutions with contextual modifications. Further research may explore the long-term effectiveness of the integration of learning technology acquired through the workshop on students' academic performance. Practical recommendations include: (1) the development of a digital repository for collaboration and sharing of best practices among educators; (2) the implementation of a continuous mentoring system to support the sustained application of acquired skills; (3) the diversification of learning technology platforms through the Genially application to accommodate variability in learning preferences and needs; and (4) the development of a longitudinal evaluation mechanism to measure the impact of interactive media implementation on standardized learning performance indicators.

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