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Training on Nearpod Implementation to Enhance Students Engagement and Prepare Gen-Z Pre-Service Teachers to Be Interactive and Innovative

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Abstract: *The Nearpod Implementation Training, attended by ten students from the Indonesian Language Education Study Program was conducted, with the aim of enhancing student engagement in learning and preparing gen-z pre-service teachers to become interactive and innovative educators. this activity was designed based on students' needs for improved digital literacy and pedagogical competence in designing technology-integrated learning. the method included need identification, in-person training, demonstration of Nearpod features, and hands-on practice in creating interactive learning content. The training evaluation used three instruments: a training evaluation questionnaire, field notes, and a participant assessment rubric. the results revealed significant improvements in five key areas: technological proficiency, student engagement strategies, confidence in digital teaching, creativity, and peer collaboration. Participants with diverse technological backgrounds were able to show meaningful progress due to the inclusive and interactive training approach. these findings emphasize the importance of strengthening pre-service teachers' competencies through participatory digital tools like Nearpod to address the challenges of 21st century learning.*

1. INTRODUCTION

The development of digital technology has brought significant impact in education, especially in encouraging active participation of learners. Gen-Z exhibits unique learning traits because they were raised in the digital age. They enjoy interactive and visual presentations, are accustomed to using digital gadgets, and seek out rapid feedback during the learning process.(Paulo and Ramirez 2025). According to (Düzenli 2021) this generation has a short attention span and is highly responsive to digital media that is immediate and engaging. (Manjillatul Urba et al. 2024) stated that audiovisual approach is perfect for Gen-Z as it helps them understand and remember the material better. They also show a preference for project-based, multimedia, and collaborative learning. Unfortunately, the learning process in higher education, especially in educational study programs, still relies on conventional approaches such as the lecture method and the use of static materials. According to preliminary observations of ten students in the University of Nias Indonesian Language Education Study Program, although having personal digital abilities, they have not been able to use them to their full potential in the classroom.

(Efendi 2024) emphasized that students often have difficulties in integrating technology

into learning activities, even though they are used to using technology in their daily lives. In fact, the use of interactive digital learning media can increase motivation, engagement and overall learning quality. In this context, student engagement is an important aspect that does not appear automatically, but can be formed through the use of appropriate learning strategies and media (Jones 2024). (Nkomo, Daniel, and Butson 2021) outlined the cognitive, emotional, and behavioral components of student involvement that need to be intentionally incorporated throughout learning activities. Thus, it's critical that aspiring educators comprehend how technology might be utilized to promote this kind of interaction. (Ajani 2025) emphasizes that prospective teachers need to be equipped with inclusive digital tools to create equitable and responsive classrooms, especially in diverse learning environments. One of the learning media that suits the characteristics of Gen-Z is the Nearpod application. This application allows teachers to present material interactively through polls, quizzes, collaborative boards, videos, and real-time tracking of learning outcomes. (Khairany et al. 2024) mention that learning strategies in the digital era not only content, but also encourage active participation as well as the development of critical and collaborative thinking skills. (Robianto 2024) claims that interactive learning resources can enhance the quality of education, particularly in social studies. (Suhaemi, Asih, and Handayani 2020) also state that the combination of visual and audiovisual media can increase the effectiveness and efficiency of learning, make the material easier to understand, and attract students' attention. (Sangboonraung et al. 2024) emphasize that the digital transformation of education, particularly after the COVID-19 pandemic, requires pre-service teachers to adapt to hybrid and technology-driven instruction. Research by (Pasrija and Malik 2025) shows that Nearpod is able to increase student attention and engagement and create a fun learning atmosphere. (Abdullah et al. 2020) also confirmed that multimedia features such as animation and audio in Nearpod are very effective in clarifying learning concepts. (Anggoro, Khasanah, and Milnes 2022) found that the flexibility of Nearpod's features supported students' independent learning, while (Kalsum 2021) showed that the attractive visual design in this application was able to increase learners' focus and engagement during learning. (Anggoro and Khasanah 2025) even revealed that Nearpod's interactive video feature is effective in the flipped classroom learning model, as it encourages independent learning, reflection, and in-depth interaction with teaching materials. In light of this context, the implementation team created and carried out Nearpod training exercises for 10 aspiring teachers enrolled in the University of Nias' Indonesian Language Education Study Program. The students

were chosen because they are currently taking microteaching courses and will soon undergo teaching practice at school. The objectives of this service activity are:

- Increase the knowledge and skills of prospective student teachers in using Nearpod as an interactive learning media; and
- Encourage the confidence, creativity, and innovative abilities of gen-Z students in designing student-centered digital learning.

This activity is expected to have a social impact in the form of increasing students' digital pedagogical literacy, the formation of a technology-based learning culture, and students' readiness to face the demands of 21st century education which is increasingly technology-based.

2. METHODS

This Nearpod application training activity was held at University of Nias on May 5th, 2025. Increasing students' involvement in the learning process was the primary goal of the training and to prepare them as interactive and innovative Gen-Z pre-service teachers through the use of the Nearpod application. The first step in the planning phase was to determine the participants' requirements for technology literacy in the classroom. The training materials were designed to cover an introduction to the main features of Nearpod, such as account creation, the use of interactive slides, media integration (videos, images, quizzes), as well as hands-on practice in designing learning content. According to (Wahyudi et al. 2022), Nearpod is an easily accessible web-based interactive learning technology that facilitates professional and interesting learning processes. The training was conducted offline in a regular classroom equipped with internet access and a projector. Each participant brought a personal laptop to attend the training. The activity began with an introductory session on the Nearpod application, followed by a demonstration of its main features by the facilitator. Then, the participants were individually guided through the process of account creation and feature exploration until they were able to independently design interactive learning content. This training approach aligns with the findings of Amelia (Septiyanti 2023), who claimed that the effectiveness of the teaching and learning process as well as interactivity can be enhanced by using Nearpod. The activity's implementation procedure is presented in Figure 1.

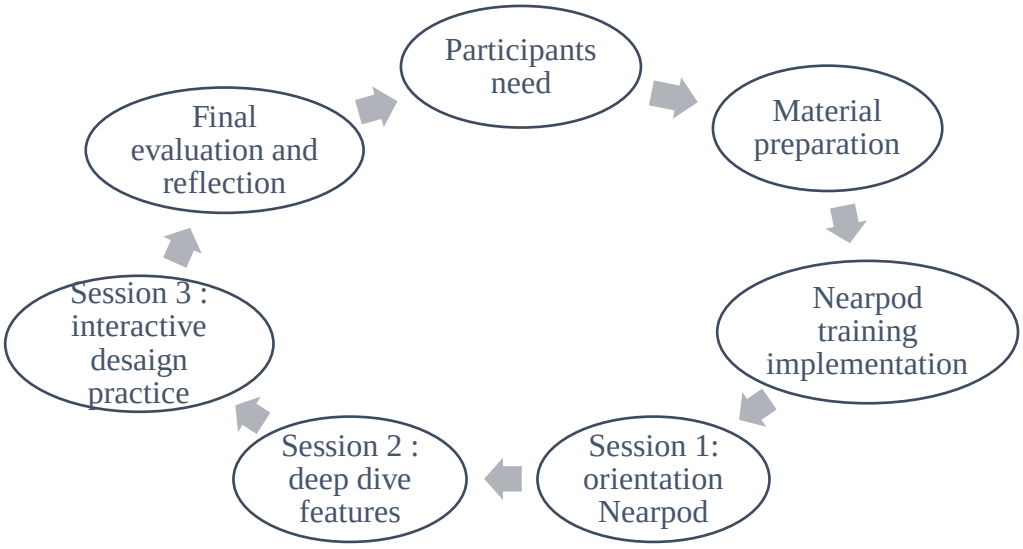

Figure 1. The process of Nearpod training activities

To evaluate the effectiveness of the training, three instruments were used: Field Notes, Training Evaluation Questionnaire, and Participant Assessment Rubric. The questionnaire was designed to measure participants' initial knowledge, the training process, skill improvement after the training, as well as participants' satisfaction and expectations. The questionnaire consisted of closed-ended statements with "Yes" or "No" answer options, covering four main aspects. During the training, the facilitator recorded the dynamics of the activity, including participants' engagement, responses to the material, and challenges encountered. These notes were used to analyze the development of the participants' pedagogical character in adapting to educational technology. On the other hand, the participant assessment rubric was applied during the practical use of the application to measure the extent to which participants quickly understood how to use the Nearpod application, based on 10 assessment aspects.

3. RESULTS

This section presents the results of the training evaluation conducted on 10 participants with given initials M1 to M10 from the Indonesian Education Study Program, focusing on the implementation of Nearpod as an interactive learning platform. The data used in this analysis was obtained through three main sources: Training Evaluation Questionnaire, Field Notes, and Participant Assessment Rubric. The questionnaire measured four main aspects: participants' prior knowledge, training experience, skill improvement, and satisfaction. It used yes/no questions. Field notes taken by the facilitator was to record participant engagement, responses to the material,

collaboration, and challenges during the training. They also noted traits like creativity, persistence, and problem-solving. The assessment rubric evaluated participants' practical use of Nearpod based on 10 indicators, such as logging in, navigating features, creating content, adding media, and working with peers. The following is a summary of the data organized into a table format for clarity.

Table 1. Summary of the data organized

Participant code	Initial Knowledge (A)	Training Process and Quality (B)	Improvement in Knowledge and Skills (C)	Satisfaction and Expectations (D)	Notes
M1	Medium	High	High	High	M1 familiar with some Nearpod features; showed high engagement.
M2	Low	High	High	High	M2 new to Nearpod; followed well during training
M3	Low	High	High	High	M3 needed initial guidance, but adapted quickly.
M4	Low	High	High	High	M4 quiet at first, but improved in practice.
M5	Low	Medium	High	High	M5 faced minor tech issues but completed tasks.
M6	High	High	High	High	M6 confident and fast learner; helped peers.
M7	Medium	High	High	High	M7 participated actively; strong creativity.
M8	Low	High	High	High	M8 gained confidence throughout the training.
M9	High	High	High	High	M9 mastered Nearpod quickly and created creative content.

M10	Medium	High	High	High	M10 asked many questions and showed growth.

Data analysis shows that participants' performance across the four assessed aspects was strongly influenced by their initial understanding of technology, personal motivation, and adaptability during the training. For example, participants like M6 and M9, who had a high level of prior knowledge, demonstrated excellent performance in all aspects and were even able to assist their peers indicating strong leadership and confidence. In contrast, participants with low initial knowledge, such as M2, M3, and M8, still managed to achieve high final outcomes, demonstrating that the training was effective even for beginners. Participant M5 experienced some technical issues but still successfully completed the tasks showing strong learning resilience. Meanwhile, M7 stood out for their creativity and active engagement, even though they only had a medium level of prior knowledge, highlighting that personal enthusiasm plays a significant role in learning outcomes. As explained by (Hakami 2020), learners with varying levels of digital readiness can still achieve optimal results when supported in an interactive and inclusive learning environment. This aligns with the findings of this study, where all participants regardless of their initial background achieved significant improvements in skills and high satisfaction. These findings reinforce the importance of implementing inclusive digital pedagogy that is hands-on and responsive to diverse learner profiles.

Figure 1. One of the tutors was mostly explaining how to create an account on the Nearpod application

Figure 1.above the tutor is standing in front of the class, demonstrating the steps to create a Nearpod account using a projector. The students are attentively listening and practicing directly on their laptops. This activity aims to improve students' digital literacy and facilitate interactive,

technology-based learning. The use of applications like Nearpod in learning aligns with connectivism theory, which emphasizes the importance of networks and collaboration in digital learning (Goldie 2016). Moreover, interactive digital learning media such as Nearpod has been shown to increase student engagement and learning outcomes (Bond et al. 2020).

Figure 2. One of the tutors was demonstrating Nearpod features

Figure 2.above shows a tutor guiding training participants in exploring the main features of Nearpod, including creating learning materials, adding interactive quizzes, and integrating learning resources such as videos and images. The session is designed to enhance prospective teachers' skills in designing interactive digital learning. Such training has proven effective in improving media-based material design abilities. According to (Effendi, 2025), The implementation of Nearpod in training activities significantly improved teachers' skills in designing interactive learning materials. the use of Nearpod also created a more dynamic and engaging learning atmosphere. (Hutagalung et al. 2024) said that by combining multimedia, real-time interactions, and formative evaluations, Nearpod enables teachers to create a more dynamic and captivating learning environment for students. The following table presents a summary of participants' development before and after the Nearpod training program.

Table 2. Summary of participant development before and after Nearpod training

Aspect Assessed	Before Training	After Training
Technological Familiarity	Most participants had never used Nearpod.	All participants were able to independently operate basic Nearpod features.
Student Engagement Strategies	Limited use of interactive media; learning was mostly teacher-centered.	Participants designed quizzes, polls, and collaborative boards that stimulated active student participation.

Confidence in Digital Teaching	Moderate to low confidence in managing digital classes.	Increased confidence in delivering interactive lessons using Nearpod.
Pedagogical Creativity	Digital content was minimal and monotonous.	Participants created varied and engaging content such as videos, images, and infographics.
Collaboration & Peer Support	Peer interaction was passive and minimal.	A culture of peer support and feedback developed during the lesson design process.

Table 2.above shows the final results of the Nearpod training, It was done in one long session. The table points out important changes in five main areas: comfort with technology, ways to get students involved, confidence in teaching with digital tools, new ideas in teaching, and working with other teachers. The improvements in getting students involved and in new teaching ideas agree with what (Astrini, Wijayanto, and Laila 2024) stated that using Nearpod in teaching, especially in grammar lessons, could help students become more active and creative because it provided easy-to-use and interactive tools. This was also evident in the lesson plans designed by the training participants, which included quizzes, videos, polls, and collaborative boards. Furthermore, there was a significant increase in teachers' confidence in digital teaching and in their collaboration with fellow educators. The study done by (Alawadhi and Thabet 2023) found that Nearpod helps teachers (student and teachers) share ideas, think about how they teach, and feel more ready to handle digital classrooms. This is because the platform gives feedback right away.

4. CONCLUSION

Training on Nearpod application showed that one in-depth workshop could improve their digital skills, make lessons more interesting for students, and encourage creative teaching and teamwork. All teachers, new and experienced, were able to use Nearpod main tools, create interactive quizzes, polls, group discussion boards, and different types of multimedia content. They also felt much more confident in running classes that use technology. These results show that using a Nearpod application system is a useful tool for developing engaging educational activities that cater to Gen-Z learners' needs.

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