Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Enhancing ICT Teachers' Competence with Nearpod : Transforming Interactive Learning Media in the Digital Age

Hastria Effendi[1], Hansi Effendi[2], Yeka Hendriyani[3], Fadhli Ranuharja[4*], Igor Novid[5], Erni Marlina Saari[6]
[1]Department of Health and Recreation, Faculty of Sports Science,
[2,4*]Department of Electrical Engineering, [3]Department of Electronics Engineering,
Faculty of Engineering, Universitas Negeri Padang, Indonesia.
[5]Department Department of Engineering Science, Graduate School of Engineering,
Gifu University, Japan.
[6]Departement of Science, Faculty of Computing and Meta-Technology,
Universiti Pendidikan Sultan Idris (UPSI), Perak, Malaysia.
*Corresponding Author. Email: fadhliranu@ft.unp.ac.id

Abstract: This community service program aimed to enhance junior high school teachers' understanding and ability to utilize interactive learning media through the Nearpod platform Conducted in collaboration with the Technology and Information Communication Subject Teacher Consultation (MGMP TIK) in the Fifty Cities Regency, involving 25 teachers from junior high schools and Islamic junior high schools as participants. The initiative employed the ABCDE method, encompassing five stages: (1) Assessment, (2) Building, (3) Collaboration, (4) Delivery, and (5) Evaluation. Data analysis included pre- and post-test comparisons, descriptive statistics, and questionnaire evaluations to assess knowledge improvement, performance, and interest in adopting Nearpod Evaluation results indicated a high level of interest and readiness among teachers to implement Nearpod in their instructional practices. The results showed a significant increase in post-test scores compared to pre-test scores, meeting the target of a minimum 20% knowledge improvement. A total of 80% of participants were able to apply Nearpod effectively, and 75% demonstrated a high interest in integrating this technology into their teaching These findings suggest that Nearpod-based training is effective in improving teachers' competencies and digital skills, thereby holding the potential to strengthen educational quality in the digital era.

Article History:
Received: 15-11-2024
Reviewed: 27-12-2024
Accepted: 12-01-2025
Published: 18-02-2025

Key Words:
Artificial Intelligence (AI); Teacher Training; Educational Technology; Teacher Intention.

How to Cite: Effendi, H., Effendi, H., Hendriyani, Y., Ranuharja, F., Novid, I., & Saari, E. (2025). Enhancing ICT Teachers' Competence with Nearpod : Transforming Interactive Learning Media in the Digital Age. *Jurnal Pengabdian UNDIKMA, 6*(1), 1-9. doi:https://doi.org/10.33394/jpu.v6i1.13553

https://doi.org/10.33394/jpu.v6i1.13553

Introduction

In the rapidly evolving digital era, the integration of technology in educational processes has become essential for educators aiming to create effective and engaging learning experiences for students (Mirata et al., 2022). One particularly beneficial technology in the educational context is Nearpod, an interactive platform that enables teachers to design and deliver creative and innovative instructional media (Anthonia & Francisca, 2020; Arianti et al., 2023; Elisa et al., 2020). Nearpod not only allows educators to develop more captivating content, but it also facilitates the adaptation of teaching methods to meet diverse student needs, addressing challenges that arise during online learning—especially those amplified by the Covid-19 pandemic.

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Improving teachers' skills in using educational technology supports the global objectives outlined in the 2030 Agenda for Sustainable Development. Specifically, it contributes to SDG 4 (Quality Education), which emphasizes the need for inclusive, equitable, and quality education for all, and the importance of improving the use of technology in education, specifically Goal 4, which emphasizes the need to ensure inclusive, equitable, and quality education for all (Indana & Pahlevi, 2023; Obaideen et al., 2022). In this context, advancing teachers' competencies in utilizing information and communication technology (ICT) has become a strategic priority. Teachers proficient in technology not only elevate the quality of learning but also contribute to the development of 21st-century skills such as Problem-solving, collaboration, and creativity, which are essential for students to tackle future global challenges (Kim et al., 2019; Ranuharja et al., 2024).

To achieve this goal, collaboration with the Information and Communication Technology (ICT) Subject Teacher Consultation Group (MGMP) becomes highly relevant. ICT teachers face challenges such as limited technological competencies, inadequate access to resources and facilities, resistance to change, heavy workloads, and insufficient training support in integrating the latest technologies into their teaching practices. MGMP serves as a platform for teachers to collaborate, share knowledge, experiences, and best practices in ICT teaching. Through this synergy, the community service program is expected to address the challenges faced by teachers in integrating technology into their teaching processes, while also enhancing their competencies and confidence in utilizing platforms such as Nearpod. Thus, the development of teachers' capacity through technology-based training will not only enrich students' learning experiences but also improve the overall quality of education in Lima Puluh Kota Province of West Sumatera Indonesia.

Method

This community service program is an initiative from the Research and Community Service Institute (LPPM) of Padang State University (UNP) under the Community Partnership Program (PKM) scheme. Prior to the implementation of the activities, an initial observation was conducted to understand the needs and conditions faced by teachers on the ground, as well as to obtain the necessary permissions from the partners. The activities are carried out in Lima Puluh Kota District, particularly in schools that are part of the Information and Communication Technology (ICT) Subject Teacher Consultation Group (MGMP). The selection of this location is based on observations that teachers in the area face challenges in utilizing technology in the teaching process. Collaboration with the MGMP ICT is expected to provide strong support in the development of teachers' capacities and create synergy between theory and practice in the use of educational technology.

This community program employs a systematic approach using the ABCDE method, which consists of five stages: Assessment, Building, Collaboration, Delivery, and Evaluation (Atuhairwe et al., 2023; Sutrisno et al., 2024). Each stage plays a crucial role in achieving the goal of enhancing teachers' competencies in using the Nearpod platform.

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

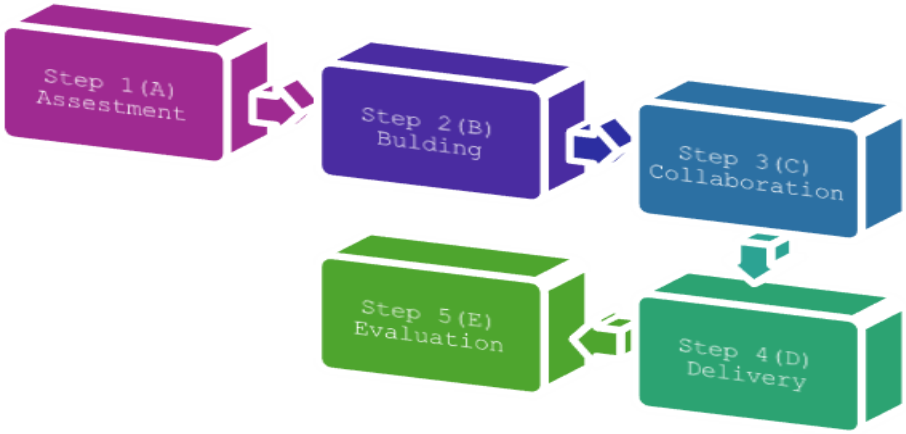

Figure 1. The socialization method for Nearpod utilized the ABCDE approach

The ABCDE method (Bailie et al., 2010) in the Nearpod socialization process involves five key stages. The first stage, Assessment (A), is conducted to understand the teachers' needs and readiness in adopting technology. Next, Building (B) involves the development of relevant instructional materials and strategies using Nearpod. Collaboration (C) refers to the collaboration between facilitators and teachers to share knowledge and experiences. The fourth stage, Delivery (D), focuses on the implementation of socialization or training sessions using Nearpod as an interactive medium. Finally, Evaluation (E) centers on assessing the effectiveness of the training and how well the apps can be applied by teachers in their teaching practices (Samala et al., 2022). Questionnaire evaluations conducted to assess knowledge improvement. This method is designed to ensure that teachers not only become familiar with Nearpod but also gain the skills to use it effectively in their classrooms.

Table 1. Indicators of Success for the Nearpod Training Community Engagement Program

Evaluation Criteria	Indicator	Goals
1. Knowledge Improvement	Teachers' understanding of Nearpod usage	Minimum 20% increase
2. Usage Skills	Teachers' ability to implement Nearpod effectively	80% of teachers can use it well
3. Interest and Motivation	Level of teachers' interest in implementing technology	75% of teachers show high interest
4. Classroom Implementation	Application of Nearpod in classroom learning	70% of teachers report usage in teaching
5. Continued Usage	Nearpod usage after training	Minimum 60% of teachers continue using Nearpod

Result and Discussion

Assessment

A total of 25 ICT teacher participants agreed to be respondents for this study. The sampling method used was non-probability purposive sampling, where due to the limited number of participants in the study, all training participants were included. The results of the pre-test indicated that the initial proficiency of the teachers was very low, with the majority of them being unfamiliar with and not yet using the Nearpod learning platform.

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Tabel 2. Respondent demographics

	F	Percentage %
Gender		
Male	0	0
Female	25	100
Age		
17-20 Yo	0	0
21-25 Yo	0	0
26-30 Yo	4	16
31-35 Yo	3	12
>35 Yo	18	72

The distribution of data in this study shows that the respondents, ICT teachers from the MGMP, are predominantly female. The respondents are divided into several age categories, with the majority, 72%, being teachers over the age of 35. A pre-test was conducted to assess the teachers' initial ability to use the Nearpod media. This assessment aimed to determine the level of material absorption in the upcoming training and to evaluate the effectiveness of the ICT MGMP teachers in using AI-based Nearpod as a learning environment. The results of the pre-test are shown in the table below.

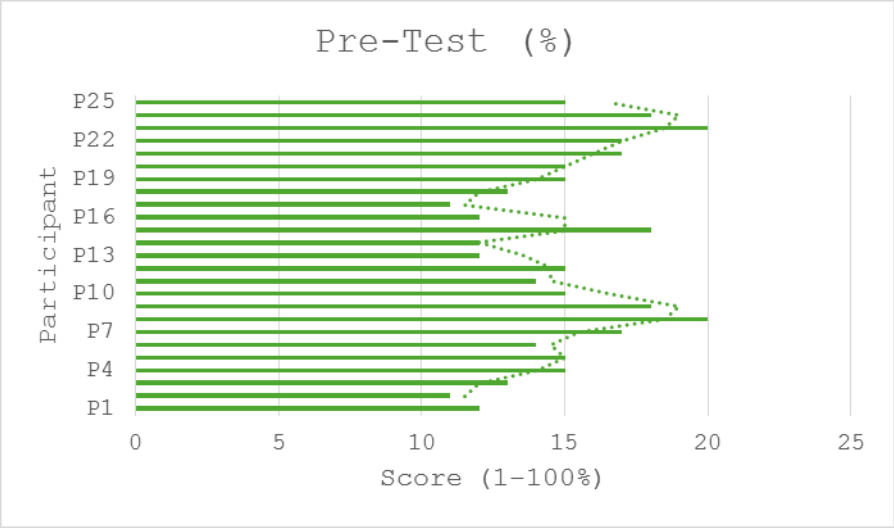

Figure 2. Pre-test result

The figure above displays the results of the Pre-Test for participants P1 to P25 in the form of a horizontal bar chart with a score range of 1-100%. Overall, the participants' scores are at a low level, with the majority falling below 20%, indicating that their initial understanding of the material being tested was very limited before the intervention using Nearpod. There is also minimal variation in scores among participants, with most participants having nearly identical scores. This suggests that the level of initial understanding is relatively uniform, with no participants possessing significantly superior knowledge compared to others. Given these low initial scores, there is a substantial potential for score improvement in the Post-Test after participating in the Nearpod training.

The next step involves conducting a survey to gather data on the distribution and identification of the respondents. This step is part of the initial assessment to obtain accurate data (Apoko et al., 2022; Dien et al., 2022). The survey items include questions regarding the experience of ICT teachers who have used similar platforms. The results of the survey are presented in the figure below.

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

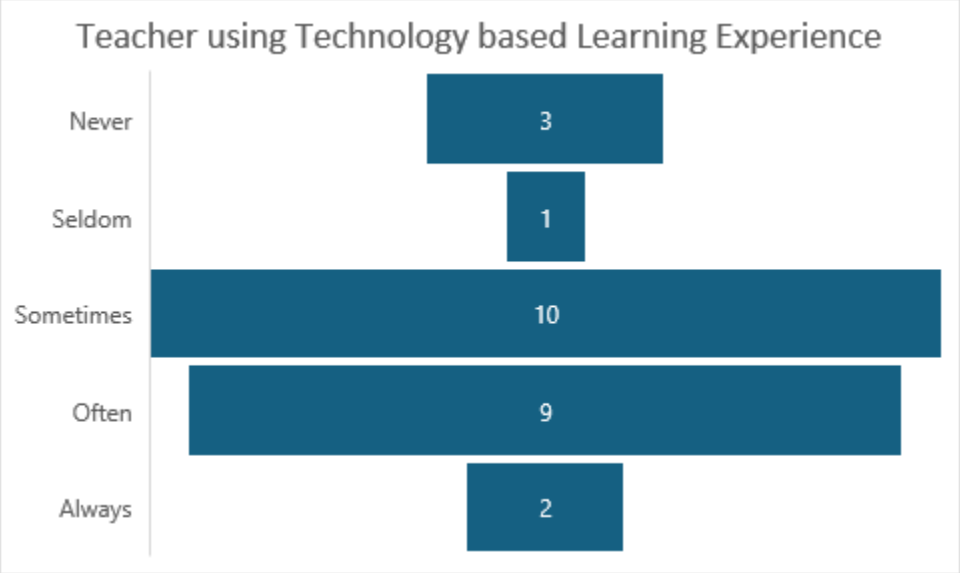

Figure 3. Teachers' Experience in Using Technology-Based Media

The analysis shows that the majority of teachers (10 individuals) use technology occasionally in their teaching, while a smaller group (9 individuals) uses it frequently. However, there are still some teachers who rarely (1 individual) or even never (3 individuals) use technology. Only a few teachers (2 individuals) consistently apply technology in their teaching. This data indicates the need for intensive training to encourage a more consistent and optimal adoption of technology among teachers.

Building

The second stage, Building is based on the results of the assessment. The community service team developed training materials and modules that align with the participants' needs. These modules cover the introduction to Nearpod's features, techniques for developing interactive media, and strategies for applying technology in teaching. The development of the materials involved experts in the fields of ICT and education. The module designed for the Nearpod training is shown in the figure below.

Collaboration.

Next, Collaboration: This stage involves collaboration with the management of the ICT Teacher Consultation Group (MGMP TIK) as a strategic partner. MGMP plays a key role in organizing the training activities and facilitating communication between the participants and the experts. This collaboration also creates a space for participants to share their experiences and best practices in using technology, fostering a supportive learning environment where teachers can learn from one another.

Figure 4. Collaboration between the LPPM UNP Service Team and the Harau ICT MGMP

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Delivery

Next, the Delivery stage: The training was conducted in person over two days, from September 6 to 7, 2024. The activities included presentation sessions, group discussions, and hands-on practice with Nearpod. Participants were encouraged to design interactive learning media based on the modules that had been prepared, and they received feedback from both the experts and their peers. This practical approach aimed to ensure that teachers gained the skills necessary to effectively use Nearpod in their teaching practices

Figure 5. Material Delivery and Training

Evaluation

The final stage Evaluation, In this stage, an evaluation was conducted to measure the effectiveness of the training in enhancing teachers' interest and ability to use Nearpod (Ranuharja et al., 2021). Evaluation data was collected through a questionnaire in the form of a post-test, focusing on the application of technology in the classroom after the training. The results of the evaluation will be used to refine the program in the future and ensure the sustainability of technology use in teaching by the teachers.

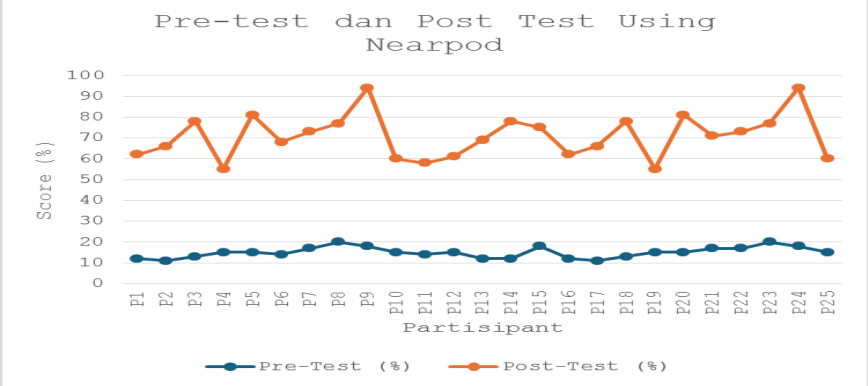

Figure 6. Result of Pre-test dan Post test

The graph shows a comparison between the Pre-Test and Post-Test scores of 25 participants who used Nearpod. It is evident that the Post-Test scores were consistently higher than the Pre-Test scores, indicating a significant improvement in performance after using Nearpod. The majority of participants had low Pre-Test scores, ranging from 10-20%, while most of the Post-Test scores were above 50%.

The significant difference between the Pre-Test and Post-Test scores suggests that Nearpod had a positive impact on improving participants' understanding or skills in the material being tested. Some participants achieved the highest scores in the Post-Test, such as P9 and P24, with scores around 76%, indicating a variation in improvement among the participants. Overall, these results demonstrate that Nearpod is effective as a learning tool to

Jurnal Pengabdian UNDIKMA:
Jurnal Hasil Pengabdian & Pemberdayaan kepada Masyarakat
https://e-journal.undikma.ac.id/index.php/jpu/index
Email: pengabdian@undikma.ac.id

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

enhance participants' learning outcomes. However, the variation in Post-Test scores across participants suggests that the effectiveness of Nearpod may be influenced by other factors such as motivation and individual engagement

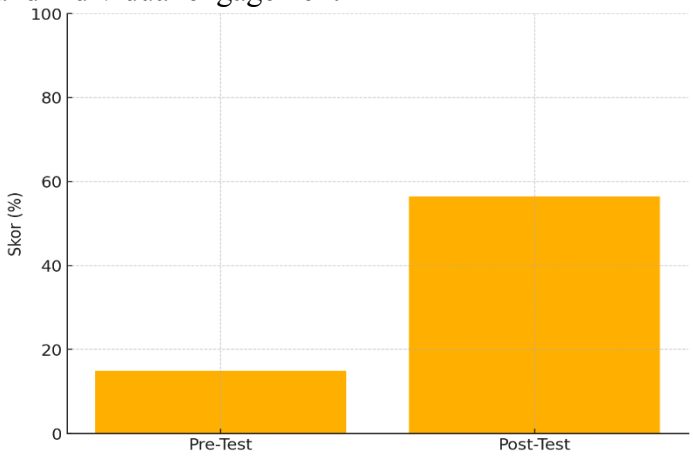

Figure 7. Average Pre-Test and Post-Test Scores

The graph above shows the average Pre-Test and Post-Test scores of all participants. A significant improvement is evident in the average score after using Nearpod, with the average Pre-Test score being relatively low compared to the much higher average Post-Test score. This indicates that Nearpod was successful in enhancing the participants' performance or understanding of the material being tested.

To ensure the sustainability of this activity, follow-up plans include regular workshops to reinforce and expand teachers' skills in using Nearpod. Additionally, a peer-sharing community will be established to facilitate continuous collaboration and exchange of best practices among participants. Advanced training sessions will also be developed to help teachers explore more sophisticated features of Nearpod and integrate them effectively into their teaching practices .

Conclusion

Based on the analysis of the Pre-Test and Post-Test results, as well as the success indicators for the Nearpod training program outlined in the table above, it can be concluded that the Nearpod training successfully improved the participants' understanding and skills in implementing this technology. The significant improvement in the Post-Test scores indicates that the participants (teachers) gained a better understanding of Nearpod, meeting the target of at least a 20% improvement. Furthermore, the increase in skills in the Post-Test suggests that Nearpod has the potential to be effectively used in teaching practices, approaching the target of 80% of teachers expected to be able to implement it. This also aligns with the indicators of interest and motivation, where the improvement in understanding can be interpreted as a strong interest in applying this technology in teaching.

Overall, the data from the Pre-Test and Post-Test support the success of the Nearpod training program, particularly in the aspects of knowledge improvement, skills development, and potential classroom application. With these results, there is an indication that Nearpod has the potential for long-term use by training participants, in line with the sustainability target of at least 60%.

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Recommendation

This study offers several recommendations for the routine use of Nearpod in learning. Given Nearpod's effectiveness in enhancing participants' understanding, it is recommended to integrate it regularly into the curriculum or learning activities. This will help participants engage in a more interactive and effective learning experience. (1) Material Adjustment and Variation, To optimize learning outcomes, it is suggested that the materials presented through Nearpod be varied and tailored to different levels of difficulty. This approach can help increase participants' engagement with the material and cater to individual needs, (2) Addressing Differences in Participant Progress, Considering the varying levels of improvement among participants, a more personalized approach is recommended. By understanding the needs of each participant, Nearpod can be utilized more effectively by providing content that is relevant to individual learners or learning groups. With continued collaboration between the service team from Universitas Negeri Padang and school stakeholders in partnership with the MGMP TIK community, it is expected that training and education, particularly in the field of educational technology, will continue in the coming years. Schools can submit requests to the service team based on the specific needs of the teachers.

References

Anthonia, C. U., & Francisca, U. N. (2020). Availability of Innovative Instructional Media for Social Studies Implementation in Enugu State. *International Research in Higher Education*, *5*(1). https://doi.org/10.5430/irhe.v5n1p25

Apoko, T. W., Hanif, I. F., & Putri, S. A. (2022). The Utilization of Flipgrid in Learning English Speaking Skill for EFL Teachers in Muhammadiyah Schools. *Jurnal Pengabdian UNDIKMA*, *3*(3). https://doi.org/10.33394/jpu.v3i3.5687

Arianti, B. D. D., Djamaluddin, M., & Sabila, H. (2023). Pengembangan Media Pembelajaran Bangun Ruang Berbasis Augmented Reality. *Infotek: Jurnal Informatika Dan Teknologi*, *6*(2). https://doi.org/10.29408/jit.v6i2.18812

Atuhairwe, I., Ngabirano, A. A., Ahaisibwe, B., Nsubuga, A., Kanyike, A. M., Kihumuro, R. B., Balizzakiwa, T., Ewing, H., Ellis, R., Forbush, L., Joseph, O., Nakyeyune, M. J., & Waniaye, J. B. (2023). Leveraging tele-mentoring and remote learning to strengthen the emergency care capacity of health workers in Uganda. *African Journal of Emergency Medicine*, *13*(2). https://doi.org/10.1016/j.afjem.2023.04.001

Bailie, R., Si, D., Shannon, C., Semmens, J., Rowley, K., Scrimgeour, D. J., Nagel, T., Anderson, I., Connors, C., Weeramanthri, T., Thompson, S., McDermott, R., Burke, H., Moore, E., Leon, D., Weston, R., Grogan, H., Stanley, A., & Gardner, K. (2010). Study protocol: National research partnership to improve primary health care performance and outcomes for Indigenous peoples. *BMC Health Services Research*, *10*. https://doi.org/10.1186/1472-6963-10-129

Dien, H. E., Vista, C. B., Sabilla, W. I., Zuraida, V., & Ririd, A. R. T. H. (2022). Pelatihan Pemasaran Digital melalui Pemanfaatan Aplikasi Online Marketplace bagi UMKM di Lapak Berkah PKK Singosari Malang. *Jurnal Pengabdian UNDIKMA*, *3*(3). https://doi.org/10.33394/jpu.v3i3.6030

Elisa, Widyasari, & Amril, L. O. (2020). DEVELOPMENT OF INNOVATIVE INSTRUCTIONAL MEDIA BASED ON LECTORA FOR ELEMENTARY SCHOOL STUDENTS. *Indonesian Journal of Social Research (IJSR)*, *1*(2). https://doi.org/10.30997/ijsr.v1i2.12

Vol. 6, No. 1 (February 2025)
E-ISSN : 2722-5097
Pg : 1-9

Indana, F., & Pahlevi, R. W. (2023). A bibliometric approach to Sustainable Development Goals (SDGs) systematic analysis. In *Cogent Business and Management* (Vol. 10, Issue 2). https://doi.org/10.1080/23311975.2023.2224174

Kim, S., Raza, M., & Seidman, E. (2019). Improving 21st-century teaching skills: The key to effective 21st-century learners. *Research in Comparative and International Education*, *14*(1). https://doi.org/10.1177/1745499919829214

Mirata, V., Awinia, C., Godson, E., & Bergamin, P. (2022). The Future of Technology-Based Learning at the Open University of Tanzania. *International Journal of Emerging Technologies in Learning*, *17*(15). https://doi.org/10.3991/ijet.v17i15.33273

Obaideen, K., Shehata, N., Sayed, E. T., Abdelkareem, M. A., Mahmoud, M. S., & Olabi, A. G. (2022). The role of wastewater treatment in achieving sustainable development goals (SDGs) and sustainability guideline. *Energy Nexus*, *7*. https://doi.org/10.1016/j.nexus.2022.100112

Ranuharja, F., Ganefri, G., Fajri, B. R., Prasetya, F., & Samala, A. D. (2021). DEVELOPMENT OF INTERACTIVE LEARNING MEDIA EDUGAME USING ADDIE MODEL. *Jurnal Teknologi Informasi Dan Pendidikan*, *14*(1). https://doi.org/10.24036/tip.v14i1.412

Ranuharja, F., Toukoumidis, A. T., Oluwaseyi, J., Lofandri, W., Samala, A. D., & Riyanda, A. R. (2024). Investigating the impact of mobile interaction gamification on 4C skills: Perspective from student at vocational higher education in Indonesia. *Advances in Mobile Learning Educational Research*, *4*(2), 1082–1092. https://doi.org/10.25082/amler.2024.02.003

Samala, A. D., Ganefri, G., Yulastri, A., Indarta, Y., Ranuharja, F., & Dewi, I. P. (2022). Entrepreneurial Intentions for Engineering Students: Does Entrepreneurship Education and Family Environment Matter? *Journal of Innovation in Educational and Cultural Research*, *3*(4), 590–606. https://doi.org/10.46843/jiecr.v3i4.300

Sutrisno, E., Mulyani, Y., Rahayu, S. M., Vitniawati, V., Darajat, A. M., Amini, N. U., Pasha, ED. Y. M., & Khotimah, N. I. H. (2024). Edukasi Program A, B, C, D, E, Cegah Stunting Menyiapkan Generasi Unggul, Berdaya Saing Sejak Masa Kandungan pada Kader Kota Bandung. *Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM)*, *7*(3). https://doi.org/10.33024/jkpm.v7i3.12814

