

Workshop on Enhancing Elementary School Teachers' Competency in Interactive Digital Learning Through The Use of Smartphone-Based Digital Platforms

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Abstract

This workshop aims to improve the competence of elementary school teachers using digital learning media, in particular, Wordwall, Pickerwhell and Ahaslides. This activity is a Community Service Program of the Elementary School Teacher Education Lecturer Team of Universitas Pelita Bangsa which was carried out online involving 2 Principals, 15 Elementary School Teachers, and 79 Students spread across regions in Indonesia, especially Bekasi, West Java. The workshop was carried out through three stages, namely preparation, material delivery, and evaluation. In the preparation stage, the service team prepared an online workshop by inviting the cooperation of several schools and involving students. In the implementation stage, workshop participants participated in the presentation of theory and practice in the use of digital platforms through Zoom Meetings and then the evaluation was carried out through the help of Google Form after the implementation. The results of the evaluation showed that 82% of participants gave a very useful, solution, and innovative assessment of the implementation of the workshop, while 56.1% of participants rated YouTube as the easiest platform to use, followed by Wordwall at 34.1%. Overall, this workshop received an average satisfaction of 4.88 out of 5. Thus, this digital learning workshop is effective in improving teachers' competence in smartphone-based digital learning. It is hoped that there will be no more limitations for teachers to implement digital learning by utilizing gadgets owned by all groups, namely smartphones.

Keywords: Workshop; Digital Learning; Elementary School Teachers; Smartphone

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Workshop Peningkatan Kompetensi Guru Sekolah Dasar dalam Pembelajaran Digital Interaktif melalui Pemanfaatan Platform Digital Berbasis Smartphone

Abstrak

Workshop ini bertujuan meningkatkan kompetensi Guru SD memanfaatkan media pembelajaran digital, khususnya, Wordwall, Pickerwhell dan Ahaslides. Kegiatan ini merupakan Program Pengabdian Masyarakat Tim Dosen Pendidikan Guru Sekolah Dasar Universitas Pelita Bangsa yang dilaksanakan secara daring dengan melibatkan 2 Kepala Sekolah, 15 Guru SD, dan 79 Mahasiswa yang tersebar di wilayah di Indonesia khususnya Bekasi, Jawa Barat. Workshop dilaksanakan melalui tiga tahapan, yaitu persiapan, penyampaian materi, dan evaluasi. Pada tahap persiapan tim pengabdian mempersiapkan workshop secara daring dengan mengajak kerjasama beberapa sekolah dan melibatkan mahasiswa. Tahap implementasi, peserta workshop mengikuti pemaparan teori dan praktik dalam penggunaan platform digital melalui Zoom Meeting kemudian pada evaluasi dilaksanakan melalui bantuan Google Form usai pelaksanaan. Hasil evaluasi menunjukkan 82% peserta memberikan penilaian sangat Bermanfaat, Solutif, dan Inovatif terhadap pelaksanaan workshop, sementara 56,1% peserta menilai YouTube sebagai platform yang paling mudah digunakan dan disusul Wordwall 34,1%. Keseluruhan, workshop ini mendapatkan rata-rata

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kepuasan 4,88 dari 5. Dengan demikian workshop pembelajaran digital ini efektif meningkatkan kompetensi guru dalam pembelajaran digital berbasis smartphone. Diharapkan tidak ada lagi keterbatasan guru mengimplementasikan pembelajaran digital dengan memanfaatkan gawai yang dimiliki semua kalangan yaitu Smartphone.

Kata kunci: Workshop; Pembelajaran Digital; Guru SD; Smartphone

Introduction

Education in the digital era demands creativity and innovation from teachers in learning. Currently, digital learning continues to be intensified. The development of information and communication technology (ICT) has significantly changed the learning landscape. In the context of elementary schools, smartphones are the most accessible digital devices and have the potential to be used in learning. However, many primary school teachers have not made optimal use of these tools to support creative and interactive teaching and learning processes. The main obstacles include limited digital competence, low confidence in using educational applications, and lack of pedagogical understanding of technology integration in the curriculum (Machmud, Fadhilatunnisa, & Miftach Fakhri, 2021).

Research shows that the use of mobile devices at the elementary school level can increase students' motivation to learn, literacy, and numeracy if used in a targeted manner (Dorris, Winter, O'Hare, & Lwoga, 2024). The urgency of strengthening teacher competence in digital learning has increased sharply after the COVID-19 pandemic. Teachers are required to be able to adapt to a hybrid learning model that combines face-to-face and online learning. In this situation, teachers' ability to use smartphones to create interactive teaching materials and manage digital classrooms is crucial. The inability of teachers to manage smartphone-based learning not only decreases the effectiveness of learning, but also has the potential to cause distractions and digital ethical problems among students (Huang, Liang, Xiong, Wu, & Lim, 2024). Therefore, training and workshops that emphasize digital literacy and technology-based pedagogy are urgent needs.

One of the solutions that can be applied is the implementation of a workshop to strengthen the competence of elementary school teachers in digital learning through smartphones. This workshop not only trains technical skills in using educational applications, but also improves teachers' ability to design digital learning strategies that suit the needs of elementary school students. Studies show that mobile-based training with a microlearning and certification approach can significantly improve teacher learning outcomes (Dahri et al., 2023). A training approach that combines hands-on practice, reflective learning, and professional community support has proven to be more effective than conventional one-way training (Liu, Aziku, Qiang, & Zhang, 2024).

However, there are research gaps that need to be considered. First, most of the research on teacher digital training still focuses on the middle or university level, while the primary school context is relatively underexplored (Morina, Fütterer, Hübner, Zitzmann, & Fischer, 2025). Second, some studies only measure teacher competency improvement in the short term without evaluating their impact on changes in teaching practices and student learning outcomes. Third, research that highlights local contexts such as digital access disparities between urban and rural areas is still limited. This gap shows the need for a research design that assesses the effectiveness of smartphone-based workshops in the medium and long term by considering the contextual factors of Indonesian elementary school teachers.

Finally, the success of such workshops is determined not only by the quality of the training, but also by systemic support such as school policies, the provision of time for professional development, and the sustainability of the post-training community of practice. Professional Learning Communities that are integrated with teachers' digital development can strengthen knowledge transfer and technology application in classroom practice (Liu et al., 2024). Therefore, further research and implementation need to be directed to an adaptive, sustainable, and contextual workshop model in order to truly strengthen the competence of elementary school teachers in the digital learning era.

Method

This Digital Learning Workshop was initiated through the activities of the Community Service Team of PGSD Lecturers of Universitas Pelita Bangsa. This workshop was held by implementing various strategies, such as lectures, demonstrations, and practices by participants through virtual using Zoom Meeting. This workshop is designed to ensure that elementary school teachers can implement digital learning effectively using their own gadgets, namely smartphones. The main goal of this community service program is to improve teachers' skills in designing smartphone-based digital learning. With this workshop, it is hoped that teachers can take advantage of various digital platforms to create a more interesting and interactive learning experience for students through their smartphones.

The implementation of the workshop consists of three stages, (1) Preparation stage, This stage begins with cooperation with the target schools. In addition, students are also invited to participate in this activity so that they can contribute to the workshop. (2) The implementation stage of the workshop, namely the delivery of materials and practical sessions virtually with integrated smartphone screen mirroring through zoom meetings. In this stage, participants were introduced to two digital learning platforms, namely LearningApps, Wordwall, Wheel of Names, YouTube and Padlet, which can be implemented as an interactive learning evaluation medium for students without the need to install applications because they only use a Browser on a Smartphone. The resource person explained related to digital learning tips and tricks, providing an explanation of the features, advantages, and weaknesses of each platform so that teachers can adjust the digital platform according to the needs of students in the classroom. After the presentation of the material, participants were given the opportunity to practice asynchronously using the digital platform introduced. A question and answer session was also held to provide solutions to various obstacles faced by participants. (3) Evaluation and follow-up stage, at this stage participants are directed to fill out a questionnaire with the help of Google Form to assess the effectiveness of the workshop implementation based on their experience during the activity. Participant feedback is essential to understand the extent to which this workshop is effective and provides benefits and aspects that still need to be developed. In addition, participants who have participated in the workshop until the end will be given a certificate as a form of appreciation for their participation and further cooperation will be held. After the evaluation stage, the results of the questionnaire obtained were analyzed to find out the response from this activity and presented in the form of graphs and tables. The service team compiles activity reports and begins to publish the results of their service based on the responses that have been collected from the results of the participant's evaluation.

Results and Discussion

The Smartphone-based Digital Learning Workshop will be held on October 24, 2025 online via Zoom Meeting. This activity was attended by 2 Principals, 15 Teachers from various Public and Private Elementary Schools in Indonesia, especially West Java and 79 students from Pelita Bangsa University and the Prince Dharma Kusuma Institute.

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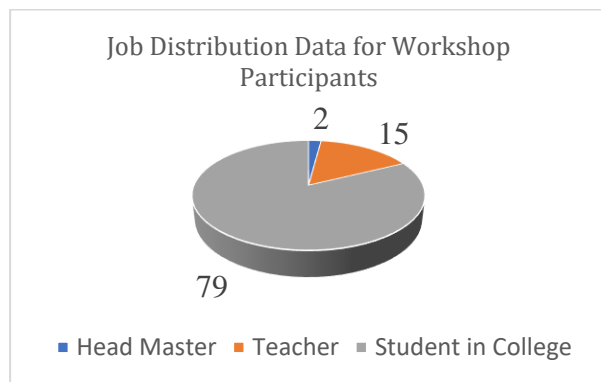


Figure 1.

Data on the Distribution of Work of Digital Learning Workshop Participants

Furthermore, based on the origin of the participants' regions spread across several regions on the islands of Java and Sumatra. The data is presented in the following Figure:

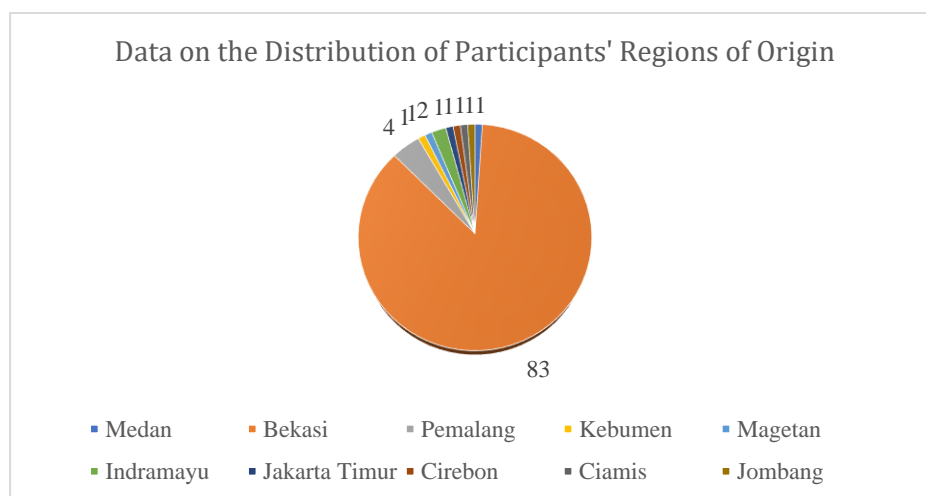


Figure 2.

Distribution Data of the Origin of the Participating Regions

Based on the data in the pie chart above, the participants were dominated by participants who lived on the island of Java, namely in West Java Province, especially Bekasi Regency, besides that the farthest participants who attended came from Medan, North Sumatra. This service activity aims to drive digital learning, especially for elementary school teachers, through the introduction of digital platforms that are easy to use on smartphones and without having to install new applications to save capacity. The platforms introduced include Wordwall, LearningApps, YouTube, Wheel of Names and Padlet.



Figure 3.
Digital Learning Platform introduced

One of the platforms practiced is Wordwall which is a platform that contains simple but interactive game features for students for all subjects in elementary school. The platform, Wordwall, allows teachers to easily create engaging learning materials, including multiple-choice questions, word matching exercises, and picture- and text-based games. Wordwall can increase student engagement in learning, allowing them to practice the concepts being taught in a fun and interactive way (Yuliyanto et al., 2025).

Wordwall can be accessed via <https://wordwall.net/>. Teachers can create activities or quizzes digitally through their respective smartphones such as adding text, images, numbers and even simple mathematical formulas. Interactive learning like this will encourage students' interest and motivation and even understanding in learning. Studies say the use of Wordwall can increase students' engagement levels in the classroom in learning basic English vocabulary (Sya'diyah, Novi Rahmania Aquariza, Afandi, & Authar, 2024). The platform allows teachers to easily create engaging learning materials, whether in the form of multiple-choice questions, word matching, or image- and text-based games. Wordwall can be used to increase student engagement in learning, allowing them to practice the concepts taught in a fun and interactive way <https://wordwall.net/> (Khasanah & Majid, 2024). The following is presented the creation of digital learning activities with wordwall:

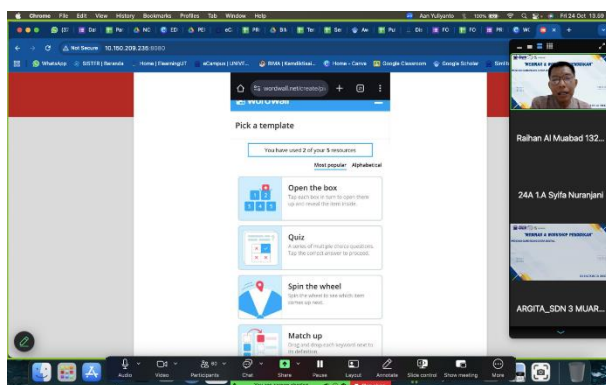


Figure 4.
Wordwall Platform Introduction

The implementation of the workshop showed a positive impact on strengthening teachers' skills in carrying out digital-based learning assisted by smartphones. The teachers who participated showed quite good enthusiasm, especially during the tips and tricks session on the implementation of digital learning to direct practice in using their respective smartphone digital platforms. Through the

presentation of materials and hands-on practice even online, participants can more easily understand and be able to implement the results of the workshop that have been obtained in learning in their respective classes. The workshop provides practical information on the design, development, implementation, and evaluation of Integrated Learning teaching methodologies and assessments. Teachers who attend workshop can meet new friends, and share educational perspectives in an independent setting on campus or in a conference center. Teachers will show a high level of professional enthusiasm in this setting (Yuliyanto et al., 2025). In addition, the workshop will also be influenced by the subject matter, the teacher's teaching objectives, and the students' past experience with the topic (Holland, Susan, & Douglas, 2016).



Figure 5.
Pamphlet Workshop

This workshop involves several elements in education, namely Principals, Teachers and Students. The involvement of students shows the openness of this workshop to provide opportunities not only for teachers but also prospective teachers in implementing digital learning. Through digital learning workshop activities using this website, it is hoped that teachers can utilize digital platforms to improve student competence, provide motivation and attract student interest in learning. Interesting and innovative learning media like this can reduce students' feelings of boredom during classroom learning which aims to improve student learning outcomes (Yuliyanto et al., 2024). Technology provides students with unpredictable power to enhance their thinking, learning, communication, collaboration and production skills. However, in order to use this power, students must first learn the skills needed to understand, manage and use this information, media and technology (Trilling & Fadel, 2009).



Figure 6.

Community Service Documentation through Online Workshops

In order to get feedback on the participants' responses to the implementation of the workshop related to the use of the Wordwall, LearningApps and YouTube platforms as alternative solutions for digital learning in elementary schools. The service team distributed the questionnaire through Google Forms after the material delivery session was completed and the question and answer session. This questionnaire contains five questions that focus on expecting participants' responses related to community service implementations through the Digital Learning Workshop aimed at principals, teachers, and students who attend.

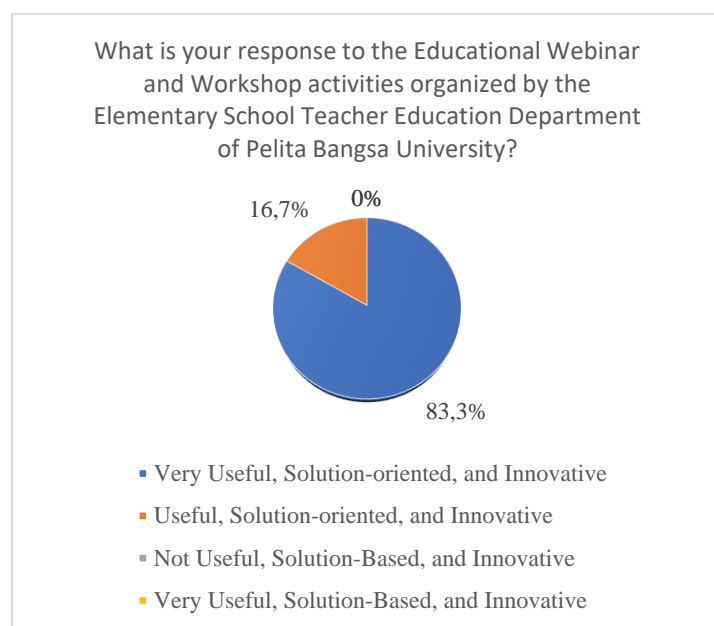


Figure 7.

Responses of Digital Learning Workshop Participants

Based on the diagram in Figure 7, it can be concluded that the smartphone-based Digital Learning Workshop held by the Service Team received a very positive response from all participants present. This is presented in the survey results which show that 83.3% of respondents rated this activity as Very Beneficial, Solutive and Innovative and 16.7% rated this activity as Beneficial, Solutive and Innovative. This absolute percentage shows that participants feel the direct benefits of the workshop that has been held. This can be due to the presentation in theory and practice by the resource persons considered relevant to the learning needs in the digital era by utilizing smartphones as a gadget owned

by all circles. Integrating learning with theory and practice, and its incentive value can drive trainee and industry participation and success (Kebede, Asgedom, & Asfaw, 2024). Thus, workshops can be assumed to provide a stimulus of practical skills that can be implemented by teachers and prospective teachers in their academic and professional lives.

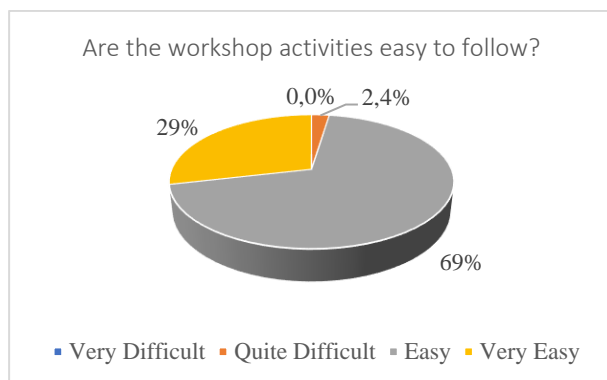


Figure 7.

Response to the Ease of Participating in Digital Learning Workshop Activities

Based on the diagram above, it can be seen that the majority of the participants of the Digital Learning Workshop felt that this activity was quite easy to follow. It can be seen that 69% of participants chose the "Easy" option, while 29% felt "Very Easy", although 2.4% of participants felt "Quite Difficult". Thus, the majority of all participants considered that this workshop was presented in a systematic, clear, and quite easy to understand way, allowing them to follow the session well and minimize significant difficulties. However, it can be seen that few respondents chose other categories. A small percentage of participants chose the "Enough" option, which means that even though they were able to keep up with the activity, there were certain aspects that felt a little challenging or required repetition in explanation. Workshops that are easy to understand will be able to improve the ability of participants to implement the material delivered (Ridwan, Qur'ani, Hamsar, Nurhijrah, & Suryana, 2023).

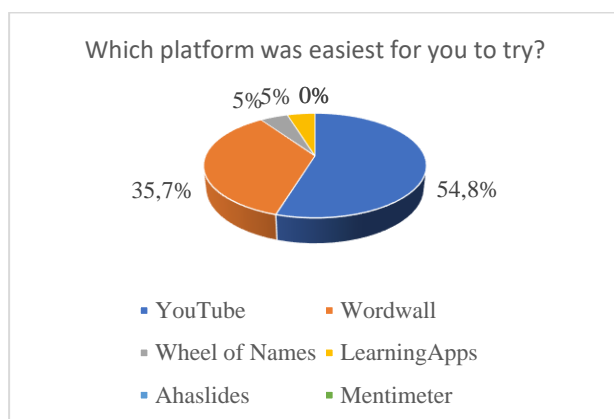


Figure 8.

The Easiest Platform Response

Based on the diagram shown in the image, it can be seen that more than half of the workshop participants chose YouTube as the easiest platform to try, with a percentage of 54.8%. As such, YouTube is considered an easier platform to use, and it is suitable for application in digital learning through smartphones because it only provides video links to learners. Ease of access, user-friendly

display, and attractive visual audio are the main factors that make YouTube the top choice for most participants. From these results, it can be concluded that in the context of digital learning, participants are more likely to choose platforms that have a simple and accessible interface, such as Youtube. In addition, Wordwall is the second choice in digital learning, which is 35.7% which is possible with interactive displays and features and a choice of digital learning activities that are interesting and easy for students. Based on student interview sheets, it is known that many students consider animated videos as entertainment spectacle, in addition to being a learning medium. This is most likely due to students' familiarity with digital content such as YouTube (Maulana, Yuliyanto, & Amanarrakhmah, 2025). Wordwall can be used to create learning media such as quizzes, matchmaking, matchmaking, matchmaking, anagrams, word randomization, word search, grouping, and others. Interestingly, the wordwall application can provide access to media that has been created online or can download PDF versions and print them on paper (Aprilia & Hartutik, 2024).

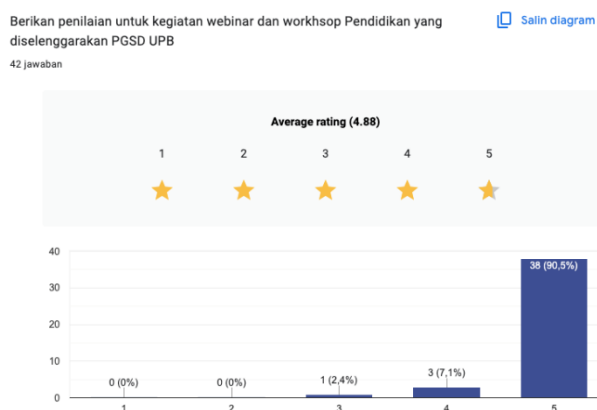


Figure 9.

Assessment of Workshop Activities based on Rating

Based on the results of the ratings shown in the picture, it can be concluded that the smartphone-based Digital Learning Workshop activity by the UPB PGSD Lecturer Service Team received very good appreciation. This is clearly seen as the rating reached 4.88 out of 5.00. From these results, the majority of participants gave a rating of 5 stars, which indicates that participants were very satisfied with the course of the smartphone-based digital learning workshop, both in terms of delivering material, interaction during practice, and the benefits they obtained even though it was carried out remotely. However, there were participants who gave a score of 4 or even 3 possible because the implementation was carried out online via zoom meeting so that there were parts of the delivery that were not maximal, such as network constraints and interactivity of participants and speakers. Online delivery is considered less effective because sometimes they do not focus on participating in the presentation activities because they do other activities while at home (Setiaji, Mufida, & Puspitasari, 2023).

Overall, this smartphone-based digital learning workshop has succeeded in creating an interactive and easy-to-apply learning environment, where teachers and students can use their gadgets for more interactive learning anytime, anywhere. After participating in this workshop, teachers and students can be better prepared to implement digital platforms in their classrooms, so that learning becomes more adaptable, interesting, effective, and in accordance with the needs of the digital era.

Conclusion

The Digital-Based Digital Learning Workshop which was held on October 24, 2025 online via Zoom Meeting has succeeded in stimulating the knowledge and competence of elementary school teachers and PGSD students related to the use of smartphones in digital learning. This workshop is designed to introduce the platform, Wordwall, Wheel of Names, and Padlet as digital learning ideas, with the aim of encouraging teachers to create a more adaptable, engaging, effective, and interactive learning experience for learners. Through this activity, as many as 15 teachers from various elementary schools on the islands of Java and Sumatra, 2 principals, and 79 students from Universitas Pelita Bangsa and Institut Pangeran Dharma Kusuma have gained indirect experience in the use of several platforms introduced. They were not only given theoretical material, but also presented virtual practice of using the digital platform. Overall, this workshop has a positive influence on improving teachers' competence in integrating smartphones in digital learning. Through this workshop, teachers and students: Prospective teachers can be more confident in using their smartphones to design digital learning that is more interesting and effective for students. The success of this workshop is a small step in encouraging the use of smartphones that are wiser and more widely used in the school learning system, so that it can encourage a more innovative learning environment that is in accordance with learning in the digital era. Of course, this workshop still has some limitations, especially the introduction of digital platforms virtually, so it is necessary to explore digital platforms and implement them offline more effectively.

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