

Developing teaching professionalism through nearpod.com integration: TPACK framework

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ABSTRACT

This act of community service in the form of a workshop for senior high school teachers was to enhance the participants' professionalism in teaching in the 21st century. The integration of technology is unavoidable. Therefore, this workshop is aimed at introducing one of the Learning Management Systems (LMS) named Nearpod that can help teachers teach effectively. The method used in this community service activity is Service Learning (SL) which consists of planning and preparation stage, implementation stage, and evaluation stage. In the planning and preparation stage, there are problem identification activities, distributing questionnaires about teacher's teaching habits and pretest. The implementation stage consists of material delivery session, demonstration, practice, discussion, and assignments. Then, the evaluation stage through committee discussions that consider the results of the pretest and posttest as well as the satisfaction questionnaire that has been distributed to participants. 96 workshop participants, who are senior high school teachers in various regions of East Java Province, gave a positive response to the implementation of this workshop. There was an increase in the percentage score for the pretest (57,6%) and posttest (85,4%), which shows that there was an increase in teacher understanding and skills after attending the workshop, namely 27,8%. To conclude, this workshop activity is considered very useful for teachers in improving the quality of learning and developing teaching professionalism, especially in designing teaching and learning activities for Gen Z.

INTRODUCTION

Recently education has been affected by the demands of 21st century which needs students to have 4Cs skills (Critical thinking, Creativity, Collaboration and Communication). In addition, education nowadays cannot avoid from transformation due to the advancement of technology and globalization (Almalki, 2020; Anwar et al., 2021). This lead a significant changing and shifting in the way education is perceived, delivered, and accessed, offering new opportunities and challenges for students, teachers, and educational institutions.

One of the vital elements of education in this 21st century is the involvement of technology in the learning process. Digital media such as computers, tablets, smartphones, and online platforms have brought students to a new engagement. The use such technologies help them engage with educational content which allowing them for personalized experience, interactive lessons and access to a vast array of resources. Additionally, technology has also made teaching and learning easier for students and teachers (Erbas et al., 2021; Merta et al., 2023; Solikhah, 2023; Wardani et al., 2021). It gives students flexibility to study beyond the classroom, anywhere in the world. Teachers could also teach anywhere eliminating geographical barriers.

Not only technology but also globalization has a profound impact on education in this century because it has increased the interconnectedness of societies and economies (Kumaravadivelu, 2008). This has led to a growing emphasis on cultural diversity, global awareness, and the development of skills for a global workforce. Students today are encouraged to think critically, solve problems creatively, and work collaboratively with peers from different backgrounds, preparing them for the challenges and opportunities of a globalized world (Limbong, 2017).

Besides, the 21st century has shifted from teacher-centered towards a more student-centered approach to education, meaning that students are actively engaged in the learning process and encouraged to take ownership of their education. It emphasizes skills such as critical thinking, creativity, communication, and collaboration, which are essential for success in the modern world. Teachers are no longer seen as the only source in the teaching and learning process, or just imparting knowledge but they become facilitators of learning, guiding students towards developing the skills they need to adapt and survive in a rapidly changing society.

On account of the advancement in education in the 21st century, there are some challenges exist especially in case of Indonesia. In Indonesia there are unequal access to quality education, and some of the issues that need to be addressed to ensure that all students have the opportunity to receive a high-quality education. One of the key factors in leading quality in education is the teachers since they are who conduct the teaching and learning process in the classroom, no matter how sophisticated the curriculum is, teacher is the key.

One of the current pivotal skills for the teachers is to apply Technological Pedagogical Content Knowledge (TPACK) as a framework that helps them

integrate technology into their teaching practices in a meaningful and effective way (Beri & Sharma, 2021; Ginting & Linarsih, 2022; Nugraha et al., 2020). The framework emphasizes the importance of understanding how to use technology to enhance teaching and learning, rather than just using technology for the sake of using it.

There are three major components in TPACK framework: technological knowledge, pedagogical knowledge, and content knowledge. Technological knowledge refers to a teacher's understanding of how to effectively use technology tools in the classroom. This includes knowing how to use different software programs, use digital resources, and troubleshoot technical problems. Pedagogical knowledge is the teacher's ability in understanding how students learn and how to design effective instructional strategies. Meanwhile Content knowledge refers to a teacher's expertise in the subject matter they are teaching.

The framework which combines these three components is aimed to create dynamic and engaging lessons that leverage technology to enhance student learning (Aisyah et al., 2021; Rohmitawati, 2018). For example, a science teacher might use a virtual reality simulation to allow students to explore the inside of a cell, giving them a more interactive and immersive understanding of the topic. Or a language arts teacher might have students create digital presentations to demonstrate their understanding of a novel, incorporating multimedia elements like videos and images to enhance their message.

One of the key advantages of the TPACK framework is that it stimulates teachers to integrate technology in a thoughtful and purposeful way. As opposed to merely using technology for the sake of using it, teachers are motivated to think about how technology can support and enhance their instructional teaching objectives. This approach can lead to more engaging and effective learning experiences for students.

As technology keeps growing, teachers have to keep improving their technological, pedagogical, and content knowledge. One of the ways is by attending professional development workshops, experimenting with new technology tools, and collaborating with colleagues to share ideas and best practices. By continuously building their TPACK skills, teachers can become more effective and innovative teachers.

Therefore, this community service in a form of workshop was done as a means to aid teachers elevate their TPACK so that they could bring an innovative and effective teaching into their classroom. One of the tools that could help teachers in their teaching practice is Nearpod. Nearpod is a powerful platform that has transformed the way teaching and learning take place in the modern classroom. This interactive tool allows teachers to engage with their students in ways that were never before possible, making lessons more dynamic, engaging, and personalized.

As it is known that students nowadays are attached to technology and traditional teaching practices will only bring some boredom for them. Therefore, Nearpod has features to generate interactive presentations that keep students actively involved in the learning process through its multimedia elements such

as videos, images, and quizzes, teachers can suit its usage to different learning styles and keep students engaged throughout the lesson (Anggoro et al., 2022; Powa & Murniarti, 2022; Wang & Chia, 2022). This not only makes learning more enjoyable for students but also helps to improve retention and understanding of the material being taught.

Additionally, it provides real-time feedback to both teachers and students. Teachers are able to monitor their student progress through live quizzes and polls, allowing them to gauge understanding and adjust their teaching accordingly. Students can also ask questions and provide feedback through interactive features, fostering a more collaborative learning environment (Abdullah et al., 2022; Efendi et al., 2023; Le & Doan, 2023).

Nearpod also provides teachers with a wealth of resources to enhance their lessons. From pre-made lesson plans and activities to customizable templates and interactive simulations, teachers have access to a vast library of content that can be tailored to meet the needs of their students. This not only saves teachers time in lesson planning but also ensures that lessons are engaging and relevant to students' interests and abilities.

Furthermore, Nearpod promotes active learning by encouraging students to take a more hands-on approach to their education. Through features such as virtual field trips, simulations, and collaborative activities, students are able to explore concepts in a more immersive and interactive way. This approach not only helps students to better understand the material but also fosters critical thinking, problem-solving, and creativity skills.

METHOD

This workshop was conducted using the Service Learning (SL) method. Service Learning method is a learning approach in an effort to raise awareness in solving problems that occur in a community or community group (Setyowati & Permata, 2018). The community referred to in this activity is senior high school teachers. This community service activity is carried out by implementing three stages of Service-Learning conceptualization, namely (1) planning and preparation stage, (2) implementation stage, and (3) evaluation stage. The stages of community service activities are presented in Figure 1 below.

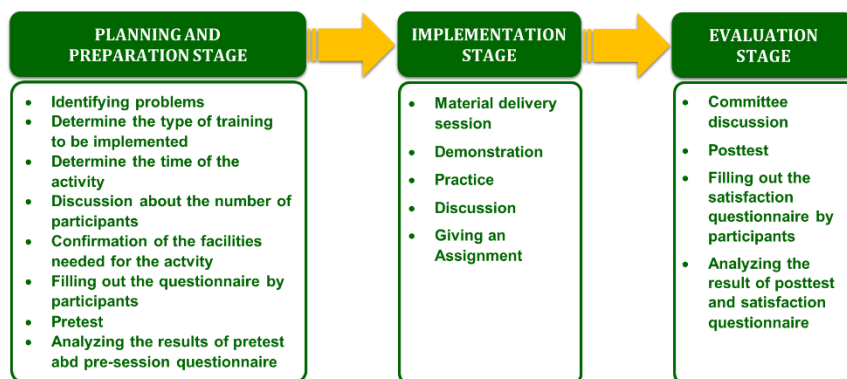


Figure 1. Community service activities stages

First stage of the workshop implementation was the planning and preparation stage. Planning stage are carried out by identifying problems followed by discussions to determine the type of training to be implemented, the time of the activity, the number of participants, and confirmation of the facilities needed for the activity. Preparation stage began by filling out the pre-session questionnaire and pretest by participants, and then analyzing the results of pretest and pre-session questionnaire to identify the initial knowledge about technology-based learning and teaching habits of workshop participants.

The next stage was the implementation which consisted of a material delivery session, demonstration, practice, discussion, and giving an assignment. The workshop materials include the concept of 21st century teaching and learning, the definition and components of TPACK, technology in teaching and learning, and an introduction to Nearpod. After the material delivery session, the speaker demonstrated how to design interactive learning-based technology through Nearpod, followed by the workshop participants' practice. The discussion was conducted through questions and answers, which were used to provide opportunities for participants who did not understand the material or had obstacles during the practice.

Participants participate in all activities, including material delivery sessions, demonstrations by the speaker, practice, discussion, and when the speaker gives assignment. Workshop participants were given the assignment of creating a TPACK learning design through Nearpod using the features provided by Nearpod. The assignment must be completed and sent by participants via WhatsApp group. Participants completed the assignments given independently and filled out the satisfaction questionnaire as feedback, which was used as evaluation material for the committee.

The last stage of this community service activity is the evaluation stage. In this stage, participants did a posttest and fill out the satisfaction questionnaire. The result of posttest and questionnaire will be analyzed by the committee for the activity evaluation. The evaluation process also involved the committee discussing things that need to be fixed or improved for the next event which is carried out approximately 1 hour after the workshop ends. Some of the evaluation materials involve the revision of the event schedule to be more effective.



Figure 2. Workshop flyer

The workshop was held offline on July 29, 2023 in the Prof. Saleh Soegiyanto auditorium STKIP Bina Insan Mandiri Surabaya with 96 participants. Workshop participants were senior high school teachers of mathematics, English, and Indonesian language who came from various regions of East Java province. The speaker of workshop is one of the English lecturers of STKIP Bina Insan Mandiri, Tri Achmad. Efendi, M.Pd.

RESULT AND DISCUSSION

In order to gain comprehensive insight into the level of participants' knowledge regarding Technological Pedagogical Content Knowledge (TPACK), a questionnaire was devised and administered. This method was chosen due to its effectiveness and efficiency in facilitating a productive workshop and training session that aimed to enhance participants' understanding and implementation of TPACK principles. The questionnaire served as a valuable tool for assessing the depth and breadth of the participants' knowledge base, enabling facilitators to tailor the workshop content to address specific areas of strength and areas in need of improvement. By leveraging this data-driven approach, the workshop was able to deliver targeted instruction and activities that resonated with participants, fostering a more engaging and impactful learning experience. This strategic use of the questionnaire not only guided the workshop structure but also ensured that the training session was purposeful and aligned with the participants' needs and objectives. Ultimately, the questionnaire played a pivotal role in optimizing the effectiveness of the workshop and training program by fostering a deeper understanding of TPACK among participants and empowering them to apply this knowledge in their professional practice. The following is the result of pre-session questionnaire on Technology use:

Table 1. Pre-question session on technology use

Statement	Never	Sometimes	Often	Always
I use PPTs to explain the material to my students.	0%	40.9%	45.5%	13.6%
I use Videos from YouTube to help me teach.	4.5%	50%	40.9%	4.5%
I use games to do assessments.	27.3%	50%	18.2%	4.5%
I make teaching materials that can be accessed by students through social media.	18.2%	63.6%	18.2%	0%
I often provide material in the form of links or websites to deepen the material.	0%	72.7%	27.3%	0%
I give an assessment or assignment by speaking through voice notes.	0%	63.6%	36.4%	0%

In the 21st century, the use of technology is inevitable (Anwar et al., 2021; Arvesu, 2023; Prayudi et al., 2021). It is in line with the findings above that most teachers incorporate technology in various forms, particularly PPTs and links/websites, into their teaching practices. However, the use of games and voice notes is less frequent, indicating potential areas for increasing technology integration in assessments especially for humanities subjects such as English and Bahasa Indonesia.

Based on the data above, Nearpod was seen as a prominent aid to enhance the participants' teaching through TPACK Framework since it has features to accommodate such as interactive slide presentation discussion board, interactive videos, game and activities as well as assessment (Sanmugam et al., 2019; Xian, 2021). Those features were proven effective and helpful in the teaching and learning process in various fields (Ahmad et al., 2023; Nurmailia et al., 2024; Sanmugam et al., 2019).

The workshop committee also provided a pretest to test teachers' understanding of their ability to utilize IT and learning management systems in learning. The pretest indicators are teachers' understanding of learning management systems in learning to present presentations, videos, games, website links, and voice notes, procedures for designing IT-based learning, and knowledge related to teaching with the TPACK Framework. From the pretest results, the percentage score was 57,6% of all indicators tested. This shows the fact that teacher's understanding of learning management systems, IT-based learning design, and the TPACK Framework still tends to be low. In Fact, teachers' understanding of using IT is very important for creating interesting and enjoyable learning (Siregar & Kadir, 2024). Teachers are also expected to be able to use technology in learning to create effective and efficient learning (Ramadan et al., 2022).

As the workshop aimed to use Nearpod as a learning platform to help teachers create new teaching strategy and give students a fresh way to learn to avoid boredom in the classroom, this groundbreaking platform was brought in to fit the different needs of those taking part. Activities in this workshop are material delivery session, demonstration, practice, discussion, and giving assignment.

The first activity in this workshop is material delivery session. The main focus of the workshop material was on using Nearpod's features to make teaching more interactive creating a lively and interesting learning activity with the hope that the participants' students could engage in the teaching and learning process. Some studies also showed that this platform could enhance students' engagement (Efendi, 2024; Nabilah, 2024).



Figure 3. Material delivery session

Next, in the engaging demonstration session, the speaker demonstrated a step-by-step walkthrough on how to create a Nearpod account first. Then, it was followed by the participants creating Nearpod account and designing interactive learning through Nearpod. In this session, participants also soaked up details about Nearpod's new features, immersing themselves in the hands-on experience on the platform and familiarizing themselves with the Nearpod's interface.



Figure 4. Demonstration session

Then, in the practiced session. Everyone followed each step that had been demonstrated by the speaker indicated their enthusiasm. Also, the participants seemed had a strong will to try new methods and elevate their teaching skills and making their teaching session more interactive for their students. The session walked them through how to build an engaging classroom, including how to use each feature of the Nearpod such as interactive presentations slide, interactive videos and games. The interactive activities with the involvement of technology could address students lack of participation and boredom (Skaik & Tumpa, 2022).

More importantly, the participants also learned how to make use of Nearpod as a means of creating tests and giving feedback. The session also stressed on how important it is to use Nearpod for assessment. Additionally, the workshop showed how the platform could give quick and helpful feedback that making it easy for teachers and students to talk to each other. Feedback is important in the teaching and learning process either for students or teachers (Obo, 2022). Both parties could see the gaps and what to improve. By diving into how to use Nearpod well, the teachers showed they were ready to use new tech to create lively lessons.



Figure 5. Practice session

The next session is discussion. At this session, participants were invited to ask questions related to the material or obstacles during the practice session. There were many questions, opinions, and shared experiences by participants which proved that participants are very enthusiastic and actively participate in this workshop activity.

The last session is giving assignment. Workshop participants were given the assignment of creating a TPACK learning design through Nearpod using the features provided by Nearpod. During the limited time they had, they tried out the different tools at their disposal. So, they decided to send their classroom link to the speaker via WhatsApp group to check the outcomes they produced. This move by the participants showed they were into the content and open to getting input to boost their grasp. Sharing the classroom link led to more back-and-forth between the participants and the speaker allowing for a thorough look at what came out of the session. By taking this step, the participants proved they wanted to get the most out of their time asking for feedback to make their learning even better.

Based on the participation and sincerity of participants in attending the workshop starting from material delivery session, demonstration of designing learning through Nearpod, practice, discussion, and assignments delivery. Workshop participants were given a posttest as an evaluation material from the workshop activities that had been carried out. The evaluation was carried out to ensure that teachers had understood how to design learning with the TPACK Framework and through Nearpod. From the posttest results, the percentage of score was 85,4%, which meets the indicators on the TPACK Framework, designing IT-based learning through an attractive learning management system which includes the ability to create attractive PPTs, varied formative assessments, interactive games, and also adding videos and questions with Nearpod. This shows that there was a significant increase, namely 27,8% after receiving training through TPACK workshop. The results of this posttest also provide an overview that teachers are able to design learning with the TPACK Framework, one of which is through Nearpod independently.

Workshop participants were also given a satisfaction questionnaire in the form of Google form by the committee as evaluation material. The following are

the satisfaction questionnaire results workshop as the community service activities presented in Table 2.

Table 2. Satisfaction questionnaire results of workshop

Statement	Yes	No
Are the workshop materials something new to you?	82,4%	17,6%

Statement	Strongly disagree	Disagree	Agree	Strongly agree
The topic presented is interesting to me	5,9%	0%	70,6%	23,5%
The topic presented are according to my needs	0%	5,9%	70,6%	23,5%

Statement	Yes	Maybe	No
Do you think that TPACK with Nearpod can be implemented in your school?	58,8%	35,3%	5,9%
I will apply the learning design presented in the workshop in class	52,9%	47,1%	0%
Would you tell your fellow teachers about the learning design through Nearpod?	76,5%	17,6%	5,9%

The results of the implementation of this activity were good. This is due to the posttest results and satisfaction questionnaire results in Table 2 and good communication between participants and the committee as well as with the speaker. Another factor that influenced the success of the event was the strong desire of the workshop participants to be able to understand, comprehend, and master the material presented. Referring to the evaluation results of this workshop activity, there are still many teachers who need training or workshops related to TPACK-based learning. Because professional teachers not only have the competence to carry out teacher duties, but they must also be able to adapt to new technologies and global challenges (Nafisah et al., 2020; Yuara et al., 2019). The event helped them grow as teachers giving them the know-how and tools to create lessons that stick with students and make their teaching more effective.

CONCLUSION

This community service activity was carried out well according to the schedule that had been prepared, and received positive responses from all workshop participants. This workshop thankfully could increase insight into implementing technology in learning, especially designing interactive learning through Nearpod.

Based on the comparison of the pretest data results, it was obtained that the teacher's understanding of the learning management system, designing IT-based learning, and also teaching with the TPACK Framework before the workshop was carried out, the percentage score was 57,6%. Meanwhile, after the workshop was carried out, a posttest was conducted and it was found that there was an increase in teacher understanding and teacher skills in designing learning with the TPACK Framework with IT-based learning through the Nearpod learning management system with a percentage of 85,4%, there was an increase in teacher understanding and skills of 27,8%.

The results of the satisfaction questionnaire have been collected from the participants also to be used as evaluation material. Based on these results and the responses of workshop participants during the workshop, it can be concluded that this workshop activity is very useful for teachers in improving the quality of learning and developing teaching professionalism, especially in designing learning for Gen Z. The suggestions for material for the next workshop are compiling learning modules on the independent curriculum, games and icebreaking in learning, developing teaching tools, and the latest learning models.

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