

Training on AI-Based Learning Media Development for Teachers of Special Needs Schools in Kamal Madura

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ABSTRACT

This community service program aimed to enhance the competence of special education teachers in utilizing AI-based digital tools to support differentiated learning. The activity was conducted at SLB PGRI Kamal Madura and involved 10 teachers with various years of teaching experience. The service comprised workshops and guided practices introducing AI platforms like ChatGPT, Pixton, InVideo, and D-ID. Implementation methods included offline and online sessions. Findings showed an increase in teachers' confidence and skills in creating customized learning media, despite technical challenges. The results support the use of AI to strengthen inclusive education practices and suggest scaling the training to other regions.

INTRODUCTION

Education for students with special needs has always required a more adaptive and personalized approach (Darman, 2017; Robiatul Adawiyah, Yunus Setyo Wibowo, & Yuyun Kartika, 2017). At the elementary to secondary school level, the government has issued a curriculum known as the Independent Curriculum, which was developed to provide students with freedom in learning (Widiastuti, Rifki, & Arief, 2023). One of the independent curriculum project activities is implementing a project to strengthen the profile of Pancasila students. One of the activities that is a manifestation of the implementation of P5 activities is the application of differentiated learning, where a process of adjustment occurs to the interests, learning preferences, and learning readiness of students, so that good learning outcomes are obtained (Yuntawati & Suastra, 2023). Differentiated learning strategies have been proven to increase student learning interest (Suwandi et al., 2023). With the implementation of the Merdeka Curriculum in Indonesia, schools are now urged to adopt differentiated learning to accommodate students' readiness, interest, and learning profiles. This approach is even more crucial in Special Needs Schools (SLB) where the learning diversity is not just based on academic ability but also on the type of disability.

There are three types of special education in Indonesia: segregated education, integrated pedagogy, and inclusive education (Prakoso & Oktora, 2023). Segregated education is an education system for children with special needs that is separate from the education system for ordinary children and is realized through the implementation of special schools (SLB) (Effendi, 2016; Moreno, 2021). SLB PGRI Kamal Madura serves students with various disabilities such as visual impairment, hearing impairment, and intellectual disabilities. The school is managed by a limited number of teachers who often struggle to provide appropriate materials and teaching strategies for each individual student (Güven et al., 2023; Moreno, 2021). The traditional teaching methods are insufficient to meet the educational needs of these students. A situational analysis reveals a competency gap among teachers in developing adaptive, technology-based learning media. Despite the high demand for appropriate digital media, most teachers lack the skills to utilize AI technology to support differentiated learning. This gap results in limited variety of teaching methods and materials, which ultimately impacts the achievement of learning objectives for students with special needs.

In light of these challenges, integrating technology into the learning process becomes essential. Digital learning media, especially those enhanced with Artificial Intelligence (AI), can provide significant support in designing materials that cater to a wide range of student needs (Bhimavarapu, 2025; Constantinescu, Sillion, & Iftene, 2024). AI tools can automate, customize, and visualize content in ways that are more accessible and engaging.

The community service project described in this paper was designed to empower SLB teachers with skills to utilize AI-based tools in their teaching. By equipping them with the knowledge and practice in using platforms like ChatGPT, Pixton, InVideo, and D-ID, the program hopes to bring about a transformative impact on the way special education is delivered.

This paper outlines the background, implementation, and results of the AI-based media development training, presenting evidence of increased teacher competence and enthusiasm. It also proposes recommendations for broader application and sustainability of similar programs.

IMPLEMENTATION AND METHODS

Implementation of AI Utilization Skills Training in Developing Learning Media as an Effort to Implement Differentiated Learning for Teachers at PGRI Kamal Madura Special Needs School through the following stages:

Tabel 1. Implementation Method

No	Type of activity	Activities	Success indicators
1	Coordination with Partners:	Meetings between the PKM team and partners discuss the issues faced by the partners, the PKM team's solutions, training needs, and the training schedule	1. Coordination and interviews with partners are completed. 2. Agreement on training implementation. 3. Preparation of the training activity schedule. 4. Agreement between training participants.
2	Preparation of Training Modules	Meeting of the PKM team and experts in their fields to prepare modules/handouts according to partner needs	1. Coordination runs smoothly 2. Preparation of modules/handouts in PowerPoint format for each material
3	Training	a. Opening	the activity was carried out according to the planned schedule
		b. Introduction to Digital Learning Media	1. Presence of training participants (teachers) during the activity 2. Interactive discussions between participants and resource persons during the activity 3. Participants understand the types of digital learning media
		c. Training on the use of digital platforms.	1. The presence of training participants (teachers) during the activity. 2. Interactive discussions between participants and

			resource persons during the activity. 3. Participants are able to understand and use digital platforms.
		d. Digital media compilation and development techniques for student learning	1. Presence of training participants (teachers) during the activity. 2. Interactive discussions between participants and resource persons during the activity. 3. Participants are able to identify appropriate digital media that can be applied in learning.
		e. Discussion and Closing	1. An interactive discussion about the event 2. summary of attendance data and training effectiveness data
4	Mentoring and Review of Results Mentoring	Results Mentoring is carried out by the PKM Team regarding improvements to the participants' trial results.	1. Interactive discussions are held between participants and mentors. 2. Participants are able to carry out demonstration tasks.
5	Evaluation and Reflection	Meeting with partner representatives	There was input and suggestions from participants regarding the implementation of the event for future improvements.

The training is aimed at approximately 10 teachers at the PGRI Kamal Madura Special School. The training will be held in May-June 2025, with five resource persons from within and outside the PKM members. The training will last one day offline, followed by online mentoring. The follow-up plan for this training is to provide mentoring for participants in developing digital media for student learning.

Data analysis used quantitative descriptive methods. The research instrument was a questionnaire distributed to respondents with a Likert scale of 1-5 and semi-structured interview questions.

RESULTS AND DISCUSSION

The Community Service Activity was carried out at SLB PGRI Kamal Madura with respondents being 10 SLB PGRI Kamal teachers who were also training participants. The questionnaire was distributed after the training was carried out using a Likert scale of 1-5 with a value of 1 for a response that is very inappropriate, a value of 2 for inappropriate, a value of 3 for neutral, a value of 4 for appropriate, and a value of 5 for very appropriate.

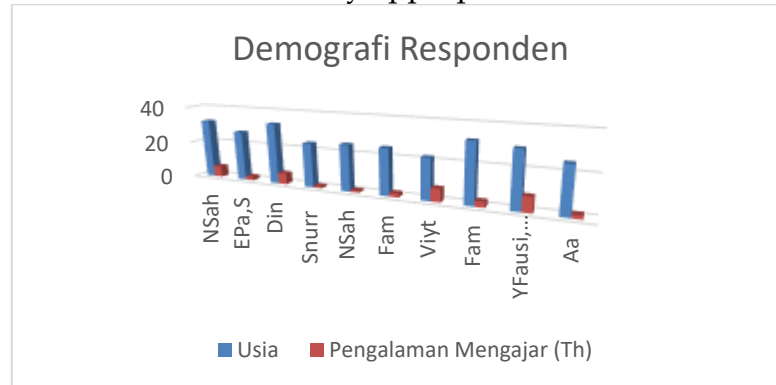


Figure. 1 Demographics respondents

Figure 1 explains the demographics of respondents, including data on teaching experience for teachers at Kamal Bangkalan Special Needs School. Furthermore, there is demographic data related to the age of the teachers at Kamal Bangkalan Special Needs School. The demographics in Figure 3 show that the oldest respondent is 32 years old, with 6 years of teaching experience, owned by NSah. Meanwhile, the longest teaching experience is held by the respondent with the initials YFausi, S.S., who has 8 years of teaching experience and is 30 years old. The youngest is 22 years old, owned by Viyt, with 1 year of teaching experience. This is also the shortest teaching experience compared to other respondents. The average demographic age of respondents is 27.5 years, while the average teaching experience is 3.8 years.

Table 2. Data tabulation

Aspects/Names	NSah	EPa,S	Din	Snurr	NSah	Fam	Viyt	Fam	YFausi, S.S	Aa	Rata2
The timing of the training has been well designed	4	5	5	5	5	5	4	5	5	5	4,8
Training schedule is carried out on time	4	5	4	4	5	4	4	5	5	5	4,5
Training materials are relevant to the needs of SLB teachers	4	5	4	5	4	5	4	5	5	5	4,6
The training materials are easy to understand and applicable	4	5	4	5	4	5	3	5	5	5	4,5

Training helps understanding AI concepts in developing learning media	4	5	4	5	5	4	4	5	5	5	4,6
Training introduces the use of AI in learning media effectively	4	5	4	5	4	4	3	5	5	5	4,4
I feel more confident in using AI in developing learning media	3	5	4	4	5	4	4	5	5	5	4,4
I understand AI learning media that is tailored to the needs of SLB students	4	5	4	5	4	5	5	5	4	5	4,6
The resource person delivered the material clearly and communicatively	4	5	5	5	5	4	4	5	5	5	4,7
Resource persons can answer questions well and relevantly	4	5	5	5	5	4	4	5	5	5	4,7
This training motivated me to continue learning and innovating in developing learning media	4	5	4	5	5	5	5	5	5	5	4,8
Training like this needs to be continued at the next opportunity	4	5	4	5	5	4	4	5	5	5	4,6

The data collection indicators included time allocation, punctuality, material presented, ease of implementation, training usefulness: increased knowledge of digital learning media, training usefulness: skills in creating digital media, the urgency of training in the Merdeka curriculum, pre-activity knowledge, resource person explanations, resource person language style, resource person responsiveness, and increased motivation.

The time allocation indicator had the highest average score of 4.8. The highest score for this indicator was 5, scored by respondents with the initials EPaS, Din, Snurr, Fam, Y Fausi, SS, and Aa. The lowest score for this indicator was 4, scored by respondents with the initials NSah, Vyt, and FZ. This first indicator measures whether the time allocation for implementation was

appropriate and sufficient, enabling participants to effectively apply the knowledge presented by the resource person in practice. The average total score was 4.8 out of a maximum of 5. Therefore, the allocation of resources for the activity implementation was deemed adequate and should be maintained in future programs. Other indicators had a good average score of 4.5–4.7 in their assessment of research implementation.

The indicator with the lowest average score was "Training to introduce the use of AI in learning media effectively." The average for this indicator was 4.4, with the highest score being 5: 5 participants, 4 participants, and 1 participant, giving it a score of 3. The ineffective assessment by students was due to several factors, including school infrastructure issues with the LCD display and cables, which occasionally became unresponsive. Poor internet access prevented participants from conducting independent trials quickly and efficiently. This is because AI applications can only be run through a stable internet connection, which requires a stable internet connection to produce learning media products. This situation made one of the evaluation points for the team to thoroughly prepare the necessary equipment to support participants' practical work, namely the provision of internet access by the PKM team. The questionnaire responses and results regarding teachers' confidence in using AI to develop their learning media were within the very good range, at 4.7 out of a maximum score of 5. This means that, despite the training being less effective due to internet access constraints, they were highly motivated to use AI to develop student learning media. This enthusiasm, in turn, boosted their enthusiasm for teaching students with special needs and resulted in enjoyable learning (Falla, Gómez, & Del Pino, 2022; Harris, 2011).

Coordination with Partners

The first stage in implementing this Community Service program began with coordination activities with partners, namely the PGRI Kamal Bangkalan Special Needs School (SLB). The activity was carried out on February 3, 2025 through an online discussion for 1.5 hours. During this coordination, the Community Service team from Surabaya State University (Unesa) held a direct discussion with the principal, Ms. Yasmin Firdausi, S.S., Gr., to further explore the conditions, needs, and challenges faced by teachers at the school.

The meeting revealed that SLB PGRI Kamal already had a good initial step—the development of a web-based learning platform designed as a platform for independent learning for students. However, a new challenge arose: how to easily, effectively, and efficiently fill this platform with appropriate learning content?

Furthermore, a major challenge for teachers is the diverse characteristics of the students' special needs that they encounter every day. This situation makes the process of creating learning media challenging, as one medium may not be suitable for all types of student needs. This often leaves teachers feeling overwhelmed, especially when it comes to preparing adaptive digital teaching materials (Alqahtani, 2025; Arpacık, Kurşun, & Göktaş, 2024).

Given this situation, the Unesa Community Service (PkM) team offered a practical and innovative solution. We introduced several artificial intelligence

(AI)-based platforms that can help teachers create learning content more quickly, engagingly, and tailored to each student's needs. The hope is that with AI support, teachers can focus more on pedagogical aspects, without being burdened by complex technical processes.

After the coordination process was completed, the next step was to develop a training pamphlet, which was used for outreach activities and information dissemination to teachers at the PGRI Kamal Special Needs School.



Figure. 2 activity flyer

The process ran smoothly, and the school provided full support for the planned activities. This initial phase was considered successful, as evidenced by the following achievements:

- Coordination and face-to-face interviews with partners were successfully conducted with the Principal of SLB PGRI Kamal Bangkalan, Ms. Yasmin Firdausi, S.S., Gr.
- The training date was agreed upon, namely June 17, 2025.
- The training schedule (rundown) was successfully developed and mutually agreed upon.
- The number of training participants was also determined, namely 10 teachers from the SMP (Junior High School) and SMP (Senior High School) levels at SLB PGRI Kamal Bangkalan.
- The type of AI to be used as an assistive device was determined based on an analysis of the partners' needs and conditions.

Preparation of Training Modules

After the coordination process with partners was carried out smoothly, the Unesa PkM team proceeded to the next stage, namely the preparation of training module over 4 days.. This stage is a crucial foundation for the program's success, as all training activities will be based on the material contained in this module.

The module was developed collaboratively by the team, taking into account the real-world needs and conditions faced by teachers at SLB PGRI Kamal Bangkalan. The material was designed to be applicable, easy to understand, and immediately applicable to participants, particularly in developing digital-based learning media using AI technology. This module was

then implemented in three training sessions, each designed with a different focus and approach.

The training sessions included: First Session – Introduction & Initial Practice (Offline): The first session was held face-to-face at SLB PGRI Kamal Bangkalan. In this session, participants were introduced to AI and how it can be utilized to streamline the process of creating digital learning media. In addition to theory, participants were also given hands-on experience with several AI platforms and guided in developing simple and contextual learning materials.

Second Session – Mentoring of Trial Results (Online): After participants completed their independent practice, the second session focused on mentoring and improvement. Teachers brought their work from the previous meeting and received feedback and guidance from the team to refine the learning media they had created. The training atmosphere felt interactive and participatory, as teachers were able to directly discuss the challenges they faced.

Third Meeting – Media Design Improvement (Online): The final session was conducted online via Zoom. The material discussed focused on refining the appearance and design of digital learning media to make them more engaging, user-friendly for students with special needs, and in accordance with the principles of differentiated learning. Despite the online environment, participant enthusiasm remained high, and the event ran smoothly.

To support documentation, the module development and training process were also photographed and presented in Figure 1 of this report. The module development phase was deemed to have gone very well. Several indicators of success were achieved:

- Smooth coordination of module development, with active communication between the team and partners.
- Development of PowerPoint presentations/training handouts covering all AI topics to be taught to participants.
- The types of AI that were trained included Pixton AI, InVideo, D-id, ChatGPT.

Training Preparation and Implementation

After coordinating with the school and developing the training modules, the most anticipated moment arrived—the training itself. At this stage, the enthusiasm of the teachers at SLB PGRI Kamal Bangkalan was palpable. They demonstrated a strong desire to learn and master AI technology as a solution for developing more effective and enjoyable learning media, especially for students with special needs.

The training consisted of three main sessions, designed to be gradual, structured, and applicable. Each session focused on different but interconnected material, allowing participants to easily follow the material.

First Meeting – June 17, 2025 (Offline) (6 hour duration)

The first meeting took place in person at SLB PGRI Kamal Bangkalan. In a warm yet enthusiastic atmosphere, the training was officially opened by the PkM team. In this session, participants were introduced to the basic concepts of AI and its use in education, particularly in the development of digital learning media.

Some of the AI platforms introduced and directly practiced by participants include: 1. ChatGPT – to help teachers create teaching materials, questions, and video scripts. 2. Pixton AI – to create visual learning comics suitable for visual learners or students with speech disorders. 3. InVideo AI – to easily create interactive learning videos. 4. D-ID – to generate video narrative avatars that help explain material visually and auditorily.



Figure. 3 implementation of training

Participants were very enthusiastic as they tried these tools firsthand. Many of those who were initially unfamiliar with technology began to realize that AI platforms could be a practical solution for a more inclusive learning process.

Second Meeting – June 24, 2025 (Online via Zoom)

In the second meeting for 2 hour, the teachers returned to bring their work from the first meeting. This session focused on mentoring and evaluation, where each participant received direct guidance from a team of experts to refine the digital learning media they had created. The discussion was lively, and the teachers were very open to feedback and the exchange of ideas within the group.

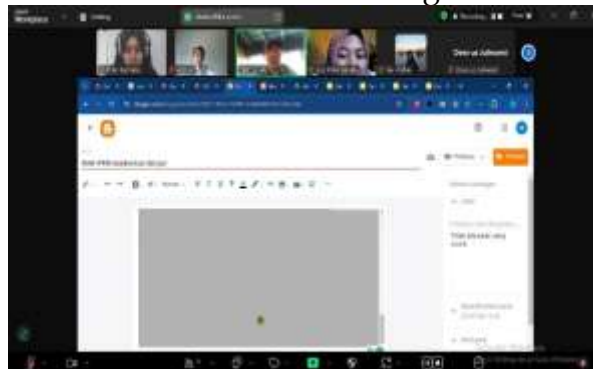


Figure. 4 Third Meeting – June 27, 2025 (Online via Zoom)

The final meeting was held online via Zoom. In this session, each group presented the final results of their learning media. Some presented educational videos with AI narration, interactive comics, and learning modules with engaging visuals. Despite being conducted online, the atmosphere remained interactive. Teachers confidently explained their work, all of which was based on the AI platform they had previously studied.

Evaluation and Reflection

Evaluation and Reflection are the final stages of this Community Service activity. At this stage, the Community Service Team ensures that the learning media developed by teachers using AI can be implemented effectively. The learning videos developed generally consist of concise explanations of thematic material, with clear voice-over narration and visuals that support student understanding. Meanwhile, comics are used to convey procedural information and everyday concepts that are easily understood by students with intellectual disabilities (McNicol, 2017; Pange, 2023; Widyastuti, Mardiyana, & Saputro, 2017). The comics contain simple images with minimal text, thus helping to improve concentration and the ability to understand context.

These learning media are not only used in the classroom but are also disseminated for independent learning at home. Teachers share videos and comics online or in printed form with parents/guardians, hoping to create synergy between school and home learning (Pi et al., 2025). This also encourages parental involvement in their children's learning process (Laranjeiro, Antunes, & Santos, 2018; Wallner, 2017).

Based on interviews, observations, and feedback sheets, the majority of teachers stated that students showed increased interest in learning and engagement when using AI-based media. Some teachers also noted improved student understanding of certain material that was previously difficult to grasp using conventional lecture methods. Despite challenges such as limited internet access and devices, teachers felt more confident and motivated to continue innovating after participating in the training (Awang, Zulkifli, & Hamzah, 2025; Kalyar, Ahmad, & Kalyar, 2018).

Reflections on this activity indicate that teachers feel professionally empowered. Previously, they felt inadequate in creating engaging media that meets the needs of students with special needs. Through this training, teachers gained not only technical skills but also new perspectives on developing more inclusive and individualized learning.

CONCLUSIONS AND RECOMMENDATIONS

This community service program successfully increased the capacity of teachers at the PGRI Kamal Special Needs School (SLB) in developing AI-based learning media. The resulting media innovations improved the quality of learning and positively impacted the motivation and learning participation of students with special needs. Furthermore, this technology-based approach bridged the gap in providing teaching materials that align with the principles of differentiated learning.

The application of AI in media creation, such as the use of InVideo, Pixton, and D-ID, proved effective in addressing teachers' limitations in creating engaging and easily understood content. Evaluation results showed that teachers experienced increased confidence, creativity, and awareness of the importance of technology integration in inclusive education.

For sustainability and broader impact, it is recommended that this training activity be followed by an ongoing mentoring program. Furthermore, improvements to digital infrastructure in schools, such as providing a stable

internet connection and adequate devices, are needed. Local governments and higher education institutions are expected to form strategic partnerships to support digital transformation in special needs schools.

This program can also be replicated in other special needs schools facing similar challenges, so that more teachers and students can benefit from innovative learning technology. In the long term, this type of training is expected to strengthen the implementation of the Independent Curriculum, which is adaptive and equitable for all students, including those with special needs.

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