Issues in Applied Linguistics & Language Teaching
Volume 07, Issue 02, 2025, pp. 384-396
E-ISSN: 2597-9825
Open Access: https://dx.doi.org/10.37253/iallteach.v7i2.11619

Training EFL Pre-Service Teachers in Using AI Tools to Create Digital Narrative Teaching Materials

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ARTICLE INFO

Article history:
Received November 30, 2025
Revised December 08, 2025
Accepted December 10, 2025
Available online December 17, 2025

Kata Kunci:
Kecerdasan Buatan (AI), Digital Storytelling, Pelatihan Calon Guru, Pengembangan Materi EFL, Literasi AI

Keywords:
Artificial Intelligence (AI), Digital Storytelling, Pre-service Teacher Training, EFL Material Development, AI Literacy

ABSTRAK

Kecerdasan Buatan (AI) semakin banyak digunakan untuk mendukung pengembangan materi pembelajaran Bahasa Inggris sebagai Bahasa Asing (EFL), namun banyak calon guru seringkali kurang memiliki keterampilan untuk mengintegrasikannya secara efektif. Berdasarkan kebutuhan ini, penelitian ini mengkaji implementasi dan dampak sesi pelatihan terstruktur yang terintegrasi dengan AI untuk mengembangkan kompetensi digital storytelling (DST). Menggunakan pendekatan campuran (mixed-methods), penelitian ini melibatkan 90 calon guru EFL yang mengikuti sesi pelatihan AI yang mengikuti alur kerja lima tahap: pembuatan prompt, pembuatan narasi suara, generasi gambar, pengeditan video, dan perencanaan pelajaran. Data dikumpulkan dari observasi pelatihan, analisis 23 proyek DST, dan survei kepuasan dengan skala Likert 10 item. Hasil penelitian menunjukkan bahwa peserta berhasil menghasilkan narasi multimodal DST menggunakan 4-7 alat AI per proyek, seperti ChatGPT, Canva AI, AI Video Cloud, dan Magic School AI, untuk menghasilkan materi narasi digital yang beragam. Produk digital tersebut ditujukan untuk siswa dan dirancang dengan rencana pelajaran yang selaras secara pedagogis untuk kelas 2 hingga 12, yang menilai berbagai keterampilan bahasa Inggris, dengan mendengarkan dan membaca sebagai keterampilan yang paling sering diintegrasikan. Fabel juga menjadi genre yang paling banyak dipilih, diikuti oleh romansa, fantasi, dan dongeng. Hasil survei menunjukkan tingkat kepuasan yang tinggi (M=4.25), kepercayaan diri, dan kegunaan yang dirasakan dari alat AI untuk pengembangan materi EFL. Studi ini menekanakan akan potensi pedagogis dari integrasi alat AI dalam persiapan guru EFL dan menerapkan manfaat pratis bagi perancang kurikulum dalam program pendidikan guru.

ABSTRACT

Artificial Intelligence (AI) has been increasingly used to support EFL material development, yet many pre-service teachers often lack the skills to integrate it effectively. In response to this need, this study examines the implementation and impact of a structured AI-integrated training session to develop digital storytelling (DST) competencies. Using a mixed-methods approach, the research involved 90 EFL pre-service teachers participating in AI training sessions that followed a five-stage workflow: prompting, voice-over creation, image generation, video editing, and lesson planning. Data were collected from training observations, analysis of 23 DST projects, and a 10-item Likert-scale satisfaction survey. Findings show that participants successfully produce multimodal narrative DST using 4-7 AI tools per project, such as ChatGPT, Canva AI, AI Video Cloud, and Magic School AI, to produce diverse digital narrative materials. The digital products targeted students and designed pedagogically aligned lesson plans for Grades 2 to 12 that assessed multiple English skills, with listening and reading being the most frequently integrated. Fables were also the most selected genre, followed by romance, fantasy, and fairy tales. Survey results indicate a high level of satisfaction (M=4.25), confidence, and perceived usefulness of AI tools for EFL material development. The study highlights the pedagogical potential of integrating AI-driven tools in EFL teacher preparation and suggests practical implications for curriculum design in teacher education programs.

1. INTRODUCTION

The use of artificial intelligence (AI) in language teaching has significantly influenced the modern instructional strategies and the development of instructional materials (Belda-Medina & Goddard, 2024; Kuddus, 2022). AI allows educators to create engaging resources, including videos, interactive assessments,

and personalized lesson plans, much more efficiently than in the past. Previously, producing these materials required specialized skills and considerable time, however, the AI features now enable teachers to generate images, voiceovers, and complete videos with minimal training. These improvements greatly enhance access to high-quality content, particularly in English as a Foreign Language (EFL) instruction, where multimedia can boost learner motivation and improve learning outcomes (Moybeka et al., 2023; TÜTÜNİŞ et al., 2025).

However, even with the increasing availability of AI tools, many pre-service teachers struggle with AI literacy, limiting their ability to incorporate these technologies into their teaching. In the Indonesian context, research shows that teacher education programs typically provide insufficient training in AI-supported teaching methods, especially compared to the ongoing professional development available to in-service teachers (Aisyiyah, 2022; Idham et al., 2024). This lack of foundational AI knowledge and digital skills creates significant obstacles to effective AI integration in the classroom. Given these challenges, it is necessary to provide structured, guided AI training to ensure that pre-service teachers can use AI tools effectively, critically, and pedagogically, rather than merely using them for basic knowledge. Such support can empower future educators to develop engaging digital narratives and multimodal materials that enhance EFL learning (Haas & Tussey, 2023).

Furthermore, in the EFL context, digital storytelling (DST) has become a valuable teaching method, encouraging creativity, multimodal literacy, and learner engagement (Yu & Wang, 2025). DST combines visual, auditory, and textual elements to create immersive narrative experiences, allowing students to express their cultural identities while practicing communication skills in personalized and collaborative settings. Research indicates that DST not only develops technological literacy but also fosters critical thinking, both of which are essential in today's digital communication landscape (Yu & Wang, 2024, 2025).

However, despite this potential, DST often requires technical skills, which may discourage pre-service teachers from implementing it unless they receive adequate, step-by-step support. Integrating AI into DST practice also offers advantages by simplifying the creation of scripts, illustrations, and audio, allowing teachers to focus on pedagogy rather than technical skills. Therefore, with these developments, teacher education programs must prioritize comprehensive training that enhances AI literacy and multimodal teaching skills. When provided with structured training, pre-service teachers often report increased motivation, confidence, and competence in incorporating AI tools into their lesson design (Guan et al., 2025; Kayaalp et al., 2025.; Pu et al., 2021).

In this context, the current study investigates a structured AI-based program designed to improve EFL pre-service teachers' digital storytelling capabilities. More specifically, this study explores: (1) how pre-service EFL teachers participate in AI-supported digital storytelling production; (2) what types of digital stories and teaching materials they develop; and (3) their perception of the training experience. By addressing these research questions, the findings can help prepare future educators for the challenges and opportunities presented by AI-enhanced language instruction, particularly in curriculum design and development.

These aims highlight this study's contribution to documenting a complete AI training workflow, explaining why DST was selected as the primary pedagogical medium, and addressing a methodological gap in previous research, which often lacked detailed descriptions of training stages.

Digital Storytelling in EFL Education

Digital storytelling (DST) combines narrative structures with multimedia elements, facilitating language learning through creativity and interactive engagement (Moradi & Chen, 2019). Some studies show that DST boosts students' motivation, comprehension, and communication skills by providing meaningful opportunities for language use (Banoth & Muthyala, 2025; Tamimi, 2024). Furthermore, DST aligns with other skills, such as collaboration, creativity, and critical thinking, making it a powerful tool for modern classroom settings.

Moreover, integrating text, images, audio, and video in DST helps students develop vocabulary and fosters multimodal literacy, an essential skill in today's technological era (Tamimi, 2024). Many studies have demonstrated that DST encourages a deeper connection with the target language by promoting extended language use and reflective learning (Banoth & Muthyala, 2025; Moradi & Chen, 2019; Tamimi, 2024). In addition to language gains, according to (Kaminskienė & Khetsuriani, 2019), DST also helps students build a sense of achievement and confidence, allowing them to express their opinions, organize their thoughts, and engage their creativity through learner-centred activities. Therefore, there is a crucial need to use DST in this era as it provides a significant pedagogical method in the EFL teaching and learning process by integrating language skills, creativity, and digital literacy.

However, despite these potential benefits, some technical challenges in developing DST, such as video editing, voiceover production, and multimodal design, may challenge the pre-service teacher who

lacks prior digital media experience (Panchenko & Panchenko, 2021). Therefore, integrating AI into DST offers an essential solution by reducing technical issues and barriers and focusing more on pedagogical design.

AI Tool for Developing EFL Teaching Material

The development of generative artificial intelligence (GenAI) has significantly influenced language education, particularly in the creation of instructional materials for learning and teaching (Medina & Goddard, 2024). Some AI tools, such as ChatGPT, have been found helpful for rapidly generating scripts and narrative stories, helping educators quickly develop content materials (Widianingtyas et al., 2023). At the same time, platforms like Canva, which integrate with AI, enable teachers to create visually appealing resources without specialized graphic design skills. Additionally, AI-driven voice-over applications can also produce high-quality audio narration for multimedia resources. These advantages could address challenges related to limited preparation time and educators' lack of technical skills (Akbarani, 2024). However, the effective integration of these AI tools still requires pedagogical decision-making, such as aligning AI outputs with learning objectives, selecting appropriate language input, and designing meaningful comprehension skills that a pre-service teacher may not have fully developed during their university studies.

Moreover, AI tools can support multimodal instruction by combining media such as text, images, audio, and video to create an interactive learning experience. This multimodality helps students engage and learn in multiple ways, enriching their learning experiences. However, despite this AI's potential to ease the production process, many pre-service teachers still report uncertainty about the effectiveness of using such AI tools, underscoring the critical need for comprehensive training programs that enhance both technical and pedagogical competencies (Gander & Shaw, 2024; Söğüt, 2024). Thus, structured training is needed to guide them in evaluating AI outputs critically and integrating them responsibly. Some studies suggest that, with proper guidance, educators can use AI tools to create engaging teaching materials and enrich EFL learning environments (Aisyiyah, 2022; Belda-Medina & Goddard, 2024; Hastomo et al., 2024).

AI Literacy for Pre-service Teachers

AI literacy is the ability to understand, evaluate, and use AI technologies effectively and ethically (Ng et al., 2021). This required foundational knowledge of how it works, the ability to assess its outputs critically, and an understanding of the ethical and social implications of AI. In the education context, AI literacy is not just technical skills but also the pedagogical knowledge necessary to apply the tools effectively in teaching (Daher, 2025). As AI becomes increasingly integrated into educational settings, these training programs must prepare future teachers with the skills to evaluate, design, and implement AI to develop better instructional materials. However, most teacher education programs provide limited exposure to AI-supported lesson planning, leading to a lack of readiness and confidence among pre-service teachers (Aisyiyah, 2022; Gander & Shaw, 2024).

Some studies show that structured AI training improves pre-service teachers' confidence, creativity, and their ability to incorporate AI tools into lesson planning (Guan et al., 2025; Hastomo et al., 2024). However, only a few studies focus on AI-driven material development within teacher education. Additionally, existing studies rarely provide methodological detail on training implementation, such as session duration, workflow details, and product analysis, making it difficult to evaluate the training's effectiveness. Therefore, some studies argue that providing guided skills development in AI literacy within teacher preparation programs prepares teachers for future education by equipping them to meet the demands of the modern classroom (Daher, 2025; Ismail et al., 2024). With proper training, pre-service teachers can effectively utilize AI technology to enhance teaching quality and engage students.

Research Gaps

There are some studies on EFL pre-service teachers and the use of AI tools in developing teaching materials. However, only a few studies have focused on how pre-service teachers can effectively use AI tools to create digital narratives. (Medina & Goddard, 2024) studied 115 pre-service teachers' use of AI to develop EFL materials. Still, their study emphasizes the need for further investigation into how AI can enhance digital storytelling in EFL contexts. Their work does not address the specific training methodologies needed for EFL pre-service teachers to use AI tools. Furthermore, they also required further research to explore the effectiveness of a training framework that promotes the integration of AI in digital storytelling within teacher education.

Furthermore, research by (Hastomo et al., 2024) indicates that among 55 Indonesian EFL pre-service teachers, only moderate levels of technological knowledge regarding AI-powered tools are exhibited. This suggests a need for comprehensive training programs that enhance their proficiency and

confidence in utilizing such technologies. Future research could explore specific training interventions to improve pre-service teachers' technological pedagogy competencies.

In addition, regarding technology readiness, (Aisyiyah, 2022)explored the technology readiness of 21 pre-service EFL teachers who took a course on Artificial Intelligence, considering four components: basic digital skills, didactic ICT competence, learning strategies, and digital skills. However, her study did not specifically examine students' preparedness to use AI tools. Addressing this gap requires examining AI tool use among pre-service teachers and developing strategies to enhance their readiness for integrating technology into language learning.

Lastly, the potential benefits of collaborative learning experiences using AI for digital storytelling remain underexplored. A study by (Liu et al., 2025) showed that 597 preservice EFL teachers in China see a crucial role for professional identity and for preservice teachers' beliefs in using technology for language instruction, and that collaborative engagement can enrich learning. However, the need for teacher-training programs to prepare innovative educators warrants further study. Therefore, by addressing these research gaps, this study aims to evaluate pre-service EFL teacher training programs that use AI tools to develop teaching materials.

2. METHODS

This study employed a mixed-method approach to explore the implementation and outcomes of an AI-integrated training program for EFL pre-service teachers. By combining quantitative data, such as perception measures through Likert-scale surveys, with qualitative data from training observations and product analyses, the study provides a comprehensive overview of the training's impact.

The participants consisted of ninety (N=90) third-year EFL pre-service teachers from the English language education major at UIN Sayyid Ali Rahmatullah Tulungagung. The sample consisted of 77 females and 13 males aged 20-23 years. Students were divided into two classes (TBI 6A and TBI 6B) and randomly assigned to 23 project teams of 4 to 6 members. The sampling method used a convenience sampling approach because the participants were students enrolled in the same course. Then the 'random' assignment refers to the class-based random grouping into teams from the two classes that participated in this study.

The AI training includes three sessions: an AI introduction and tutorials, practicing various AI tools, and engaging in team-based projects. The training sessions included both face-to-face and synchronous online formats. The stages were as follows: (1) Prompting: using AI tools to generate narrative ideas and scripts. (2) Voiceover generation: producing AI-based narration using various software. (3) Picture creation: designing visual elements with available AI design tools. (4) Video editing: assembling narratives using editing software. (5) Lesson planning: developing teaching materials with the integration of AI tools. Each session lasted approximately 100 minutes, or one class meeting. This training is actually a part of the full research stages from 9 sessions, which will still need further activity, such as production, presentation, and discussion stages, which were adopted from the study of (Belda-Medina & Goddard, 2024)

Three types of data were collected during the study. First, training documentation and observational field notes were used to document training activities and participant engagement. The observations were structured and conducted by the course lecturers and research teams, who acted as the AI trainers and observers. The observers used the class notes during the training session, which focused on students' engagement, collaboration, tool use, and the challenges and questions raised during the session. Additionally, during the training, the research teams also took photos for documentation.

Then, analysis of digital stories and instructional materials is used to analyze the produced digital storytelling videos alongside their respective instructional materials, assessing narrative genre, target grade level, skills evaluated, and AI tools employed. Coding categories for product analysis, including the narrative genre type, AI tools used, English skills purpose, and pedagogical components, were predefined. Finally, the study qualitatively described the collected data.

Lastly, a 5-point Likert-scale perception survey was administered to measure participants' satisfaction with the training program, gauge their impressions of its usefulness, and assess their confidence in applying what they learned. The survey consisted of 10 items measuring three points: (1) satisfaction; (2) perceived usefulness; (3) confidence, and this instrument was adapted from previous AI literacy studies.

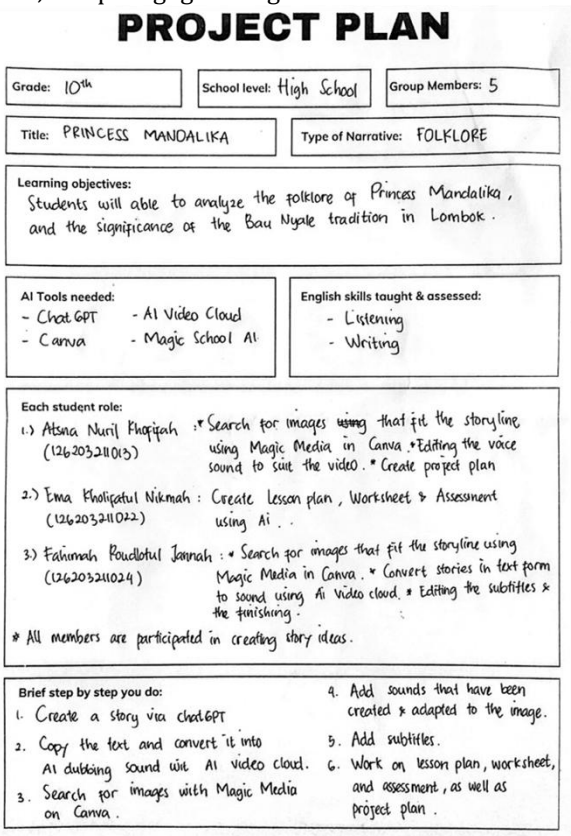
Finally, the data collected were analyzed in several steps. The qualitative data, including training descriptions and product analyses, were coded descriptively to identify recurring themes and insights. The quantitative survey responses were analyzed using descriptive statistics to determine means and standard deviations. Lastly, a frequency analysis was conducted of narrative types, tools used, and targeted language skills, providing insight into the training outcomes. This analysis was conducted to ensure alignment between the research question and the collected data.

3. RESULT AND DISCUSSION

Implementation of the AI tools Training Sessions

Before the group work began, in the training session, the group was given a worksheet to outline their project plan. This worksheet required detailed information, including the grade level for which the material was designed, the school level, the digital story title, the type of narrative (e.g., fable, folklore, romance), the tools to be used, and the English skills to be taught and assessed. Additionally, the group had to specify each student's role and provide a step-by-step process for completing the project. This planning stage ensured that groups use the AI tools' pedagogical intentions and role divisions, which contributed to better collaboration during the training session.

For example, in Figure 1, one group created a project for 10th-grade senior high school students and titled their digital story "Princess Mandalika," selecting folklore as the narrative type. The tools they used included ChatGPT for story generation, Canva AI for visual elements, AI Video Cloud for voice-over, and Magic School AI for lesson planning and assessments. In terms of roles, Student 1 was responsible for searching for images that matched the storyline in Canva and for editing the voice. Student 2 created the lesson plan, worksheets, and assessments using Magic School AI, while Student 3 handled the image search, video subtitle editing, and final touches before submission. This example shows how students navigated multiple AI tools in an integrated way, using each tool according to its strengths, such as text generation, visual design, audio production, and pedagogical alignment.



PROJECT PLAN

Grade: 10th | School level: High School | Group Members: 5

Title: PRINCESS MANDALIKA | Type of Narrative: FOLKLORE

Learning objectives:
Students will able to analyze the folklore of Princess Mandalika, and the significance of the Bau Nyale tradition in Lombok.

AI Tools needed:
- Chat GPT
- Canva
- AI Video Cloud
- Magic School AI

English skills taught & assessed:
- Listening
- Writing

Each student role:
1.) Atsna Nuril Khafifah (1262032110013) : * Search for images ~~using~~ that fit the storyline using Magic Media in Canva. * Editing the voice sound to suit the video. * Create project plan
2.) Ema Kholifatul Nikmah (1262032110022) : Create lesson plan, Worksheet & Assessment using Ai..
3.) Fahimah Roudlotul Jannah (1262032110024) : * Search for images that fit the storyline using Magic Media in Canva. * Convert stories in text form to sound using Ai Video cloud. * Editing the subtitles & the finishing.
* All members are participated in creating story ideas.

Brief step by step you do:
1. Create a story via chatGPT
2. Copy the text and convert it into AI dubbing sound wit AI video cloud.
3. Search for images with Magic Media on Canva.
4. Add sounds that have been created & adapted to the image.
5. Add subtitles.
6. Work on lesson plan, worksheet, and assessment, as well as project plan.

Figure 1. An Example of a Project Plan Created by a Group

Their process began with using ChatGPT to brainstorm and create the story for "Princess Mandalika". The generated text was then converted into an AI-generated voice-over with AI Video Cloud. Images were sourced from Magic Media on Canva and combined with the voice-over. Student 2 developed related lesson plans, worksheets, and assessments, while Student 3 edited the video subtitles and made final adjustments. The completed project was then submitted, including both the digital story and the accompanying teaching materials.

Furthermore, the AI training sessions adopted a five-stage workflow as follows.

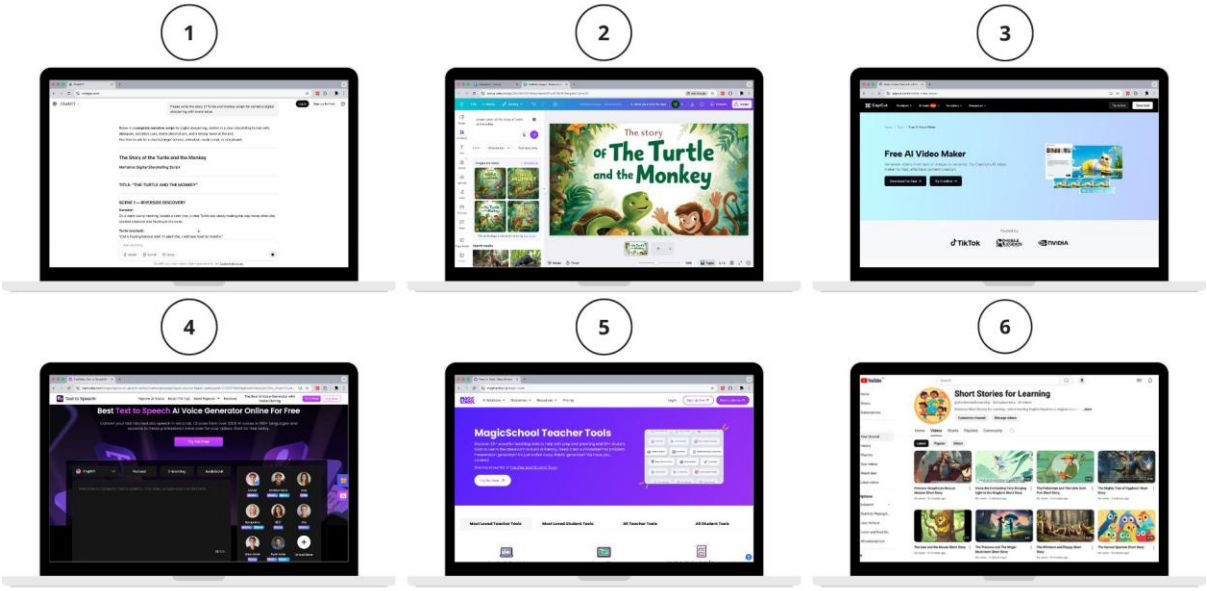


Figure 2. AI tools Training Stages from Prompting to Lesson Planning

a. Prompting

Participants used ChatGPT (https://chatgpt.com) to brainstorm and create compelling narratives. ChatGPT, known for its advanced natural language processing capabilities, facilitated the generation of creative, coherent storylines, helping participants overcome writer's block and enhancing their storytelling skills.

b. Voice Over

Using AI Video Cloud or other relevant AI tools, participants generated voice-overs for their digital stories. This tool enabled them to create professional-quality audio narrations, adding a dynamic, engaging element to their storytelling projects.

c. Picture Creations

Participants employed Canva AI (https://www.canva.com) to create visual elements for their stories. Canva's user-friendly platform enabled them to design attractive, visually appealing graphics that enhanced the overall visual experience of their digital stories.

d. Video Editing

Participants used Canva or CapCut (https://www.capcut.com) to edit their videos. These tools provided them with easy-to-use interfaces and a range of editing features, enabling them to produce polished, cohesive digital storytelling projects.

e. Lesson Planning

Participants used Magic School AI (https://www.magicschool.ai) to develop lesson plans, worksheets, and assessments. This tool helped them create structured, comprehensive teaching materials that could be integrated into their digital storytelling projects, ensuring the educational content was well-organised and effective.

f. Product Publication

The developed digital storytelling videos are available at https://www.youtube.com/@shortstoriesforlearning/videos. The collected video can be watched and downloaded freely for use as teaching material for students from elementary to secondary levels. Meanwhile, materials such as lesson plans, worksheets, and assessments can be accessed via this link: https://drive.google.com/drive/folders/1Wtar0A3iLTqCthbW22XZZN1jzRMg1LEG?usp=sharing.

During the training sessions, students were grouped by their choice. Each student had their role assigned according to their project plans. Each group also brought a laptop to the classroom to follow tutorials on the various AI tools introduced, including ChatGPT and tools for developing digital storytelling videos. As they explored the AI tools and features, students received guidance and were encouraged to discuss within their groups, then asked questions and sought feedback from the lecturer, who served as the AI trainer for these training sessions. Observational field notes indicated active collaboration and peer assistance, particularly when students encountered unfamiliar AI features and some technical difficulties.

This training fostered students' collaborative participation and allowed them to effectively utilise AI tools, providing a new experience for the pre-service English teachers, who later will develop teaching materials in the form of videos and worksheets. These observations support previous studies that have found that DST projects enhance teamwork and digital literacy among pre-service teachers.

Figure 3. The Training Sessions for Each Class of TBI 6A and TBI 6B

Participants' Level of Satisfaction with the AI Training Session (5-point Likert Scale)

Table 1. Participants' Satisfaction Levels with the AI Training Session

No.	Statements	Response (%) (N=90)					Mean	St. Dev
		SD	D	N	A	SA		
1.	I am overall satisfied with the quality and effectiveness of the training session on AI integration in language learning.	1.1	2.2	8.9	40	47.8	4.31	.816
2.	The training session adequately covered the concepts and applications of AI in language learning.	0	1.1	7.8	50	41	4.31	.664
3.	The training session provided me with practical knowledge and skills for integrating AI tools such as Canva AI, Audio AI, and ChatGPT into language education.	0	2.2	7.8	50	40	4.28	.704
4.	AI can aid in creating engaging and interactive learning experiences.	1.1	1.1	7.8	48.9	41.1	4.28	.750
5.	The session on using AI tools for digital storytelling, including Canva AI, Audio AI, and ChatGPT, provided practical guidance on leveraging technology to enhance storytelling experiences.	0	2.2	10	43.2	44.4	4.30	.741
6.	The session equipped me with the necessary skills to effectively utilize AI tools for creating digital storytelling videos in the EFL classroom.	0	2.2	12.2	46.7	38.9	4.22	.746
7.	The training session fostered creativity and innovation in the creation of digital narratives using AI tools.	0	2.2	10	50	37.8	4.23	.720
8.	The training activities and practical exercises, including the use of Magic School AI for developing lesson plans, assessments, and worksheets, were useful and engaging.	1.1	0	12.2	47.8	38.9	4.23	.7503

9.	The trainer(s) were competent, and there were opportunities to ask questions and receive feedback.	0	4.4	7.8	53.3	34.4	4.18	.7581
10.	I feel confident in using AI tools like Canva AI, Audio AI, ChatGPT, and Magic School AI for digital storytelling and integrating them into my lesson plans, assessments, and teaching practices after the session.	1.1	1.1	14.4	43.3	40	4.20	.8100
Mean Average						4.25		

Based on Table 1, participants expressed high satisfaction with the quality and effectiveness of the training session, with a mean score of 4.31. This score reflects a high level of agreement that the training met their expectations. This consistently high mean score across tasks suggests that the training successfully balanced technical guidance with pedagogical application, which is critical for meaningful AI Integration. Both the adequacy of the training in covering AI concepts and applications and the practical knowledge and skills for integrating tools such as Canva AI, Audio AI, and ChatGPT received identical mean scores of 4.31. This suggests that participants found the training comprehensive and helpful in understanding and applying AI tools in language education. This alignment indicates that participants valued not only the introduction to the tools but also the products that enabled them to use them in context.

The session's effectiveness in creating engaging and interactive learning experiences, as well as in providing practical guidance on using AI tools for digital storytelling, also scored highly, with mean scores of 4.28 and 4.30, respectively. This indicates that participants found the training effective in enhancing their ability to use AI to create and deliver engaging educational content. Additionally, the training activities and practical exercises, including the use of Magic School AI to develop lesson plans, assessments, and worksheets, were rated positively, with a mean score of 4.23. This suggests that these activities were deemed valid and engaging, contributing to the overall satisfaction with the training.

Participants also felt that the training fostered creativity and innovation, scoring 4.23, and appreciated the trainers' competency and the opportunities for questions and feedback, which received a mean score of 4.18. This highlights the trainers' effectiveness and the interactive nature of the session in addressing participants' needs and queries. This finding supports the previous study suggesting that structured training is essential for building positive attitudes towards AI use among pre-service teachers.

Lastly, participants felt confident in using the AI tools for digital storytelling and integrating them into their teaching practices, with a mean score of 4.20. This indicates a high level of confidence gained from the training, further reinforcing the overall positive evaluation. However, given that other studies have documented low to moderate AI readiness among Indonesian pre-service teachers, this high confidence may reflect short-term gains from facilitated sessions rather than long-term sessions.

Analysis of Students-produced Digital Story Products

Based on Table 2, a total of 23 groups from two classes of pre-service English teachers (TBI 6A = 10 groups; TBI 6B = 13 groups) developed AI-assisted digital storytelling projects, each accompanied by an EFL lesson plan. The target learners ranged from Grade 2 to Grade 12, demonstrating the adaptability of digital stories across primary and secondary educational levels. All groups produced complete narratives with accompanying instructional materials. The variety of study titles demonstrated students' creativity and willingness to explore narrative genres from the textbook narrative stories.

Table 2. List of Digital Story Titles (N = 23)

Group	Story Title	Group	Story Title
TBI 6A	Cinderella	**TBI 6B**	Willy and His Imaginary Friend
	Echoes of Titanic		The Curious Rabbit and the Patient Turtle
	Exploring the Mysteries of Mermaids		The Wind and the Sun
	The Cunning Fox and the Crow		Bufford's Big Decision
	Princess Mandalika		The Wise Deer's Rescue
	The Story of Panda and the Bamboo Tree		Letter to the River
	Whiskers and Floppy: An Unlikely Friendship		The Honest Sparrow
	The Misuse of Magic Brush		The Mighty Three of Yggdrasil

Beauty and the Beast	The Princess and the Magic Mushroom
The Story of Ken Dedes	The Lion and the Mouse
	The Fisherman and the Little Fish
	Viona the Enchanting Fairy
	Princess Seraphin's Rescue Mission

As shown in Table 2, students completed their project from a wide range of narrative types, including classic tales such as *Cinderella*, moral fables like *The Lion and the Mouse*, and culturally rooted stories such as *Princess Mandalika* and *Ken Dedes*. This diversity indicates that pre-service teachers not only adapted well-known narratives but also incorporated local or culturally meaningful stories, reflecting an effort to contextualize learning materials for Indonesian learners. Additionally, several groups experimented with imaginative or original titles, such as *Whiskers and Floppy*: *An Unlikely Friendship and Viona the Enchanting Fairy*, suggesting that AI tools may have supported greater creative exploration.

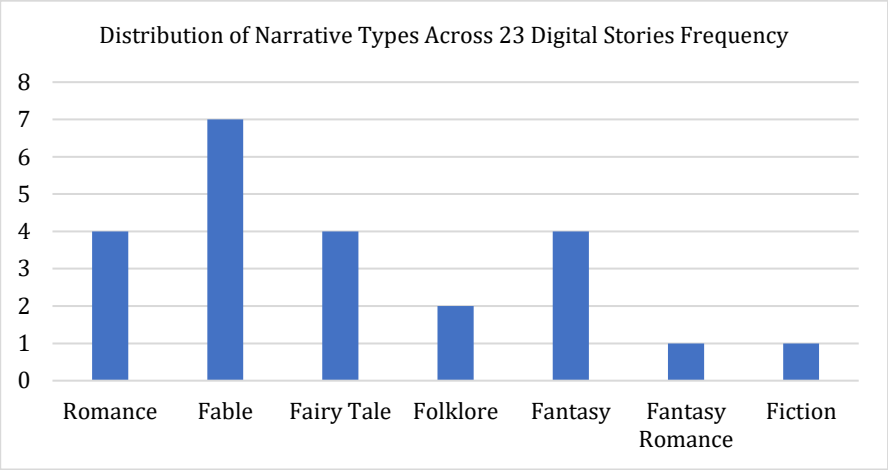


Figure 4. Distribution of Narrative Types Across 23 Digital Stories

From Figure 4, we can see that students produced a varied selection of narrative genres in their digital story projects. The most frequent genre was fables (n = 7), followed by romance narratives (n = 4), fairy tales (n = 4), and fantasy stories (n = 4). Less represented genres included folklore (n = 2), fantasy-romance hybrids (n = 1), and general fiction (n = 1). This distribution indicates that participants tended to choose familiar, highly structured narrative forms, particularly fables and traditional tales, that align with familiar EFL instructional texts and are easier to adapt into multimodal digital formats. The strong presence of fables and classic tale structures also suggests a preference for narrative types that naturally support moral themes, precise sequencing, and straightforward character roles, which may reduce linguistic complexity for language learners.

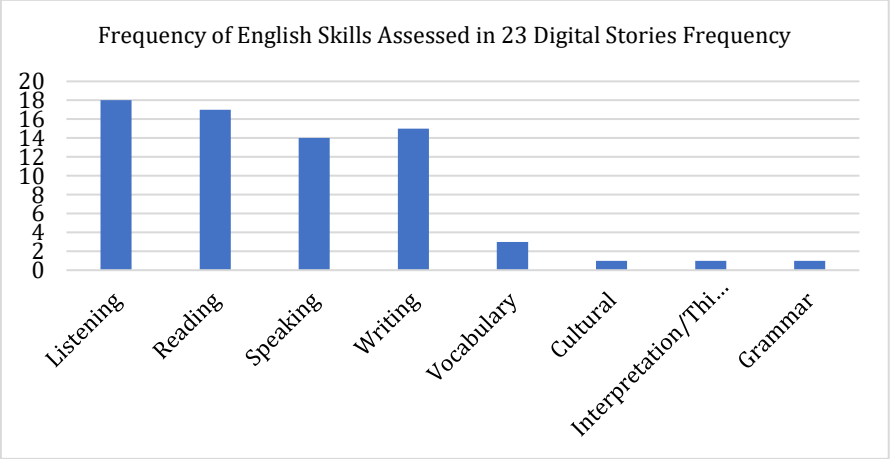


Figure 5. Frequency of English Skills Assessed in 23 Digital Stories

As shown in Figure 5, listening is the most frequently assessed skill (n=18), followed by reading (n=17). Furthermore, speaking (n=14) and writing (n=15) were also commonly targeted across the digital story projects, reflecting participants' effort to integrate both receptive and productive skills into their EFL

material. In contrast, vocabulary (n=4), cultural elements (= n=1), interpretation/thinking skills(n=1), and grammar (n=1) appear less frequently. These findings indicate that participants mainly focus on core comprehension skills when designing their DST-based activities. Listening and reading are shown as the most targeted skills, possibly because DST naturally provides auditory and textual input, making it convenient for designing comprehension tasks.

Furthermore, as shown in Figure 6, all groups integrated AI tools across multiple stages of the digital story production process, including script development, visual design, and video editing. The most frequently used tools were Canva (n = 23), Magic School AI (n = 19), ChatGPT (n = 20), and AI Video Cloud (n = 21), indicating a firm reliance on platforms that support multimodal content creation and pedagogically aligned AI assistance. These tools facilitated tasks such as drafting scripts, generating or editing visual assets, creating animations, and assembling multimedia components into cohesive video narratives. The frequent use of Canva, ChatGPT, and AI Video Cloud reflects their accessibility and ease of use compared to more advanced or specialized AI tools, which students used only occasionally.

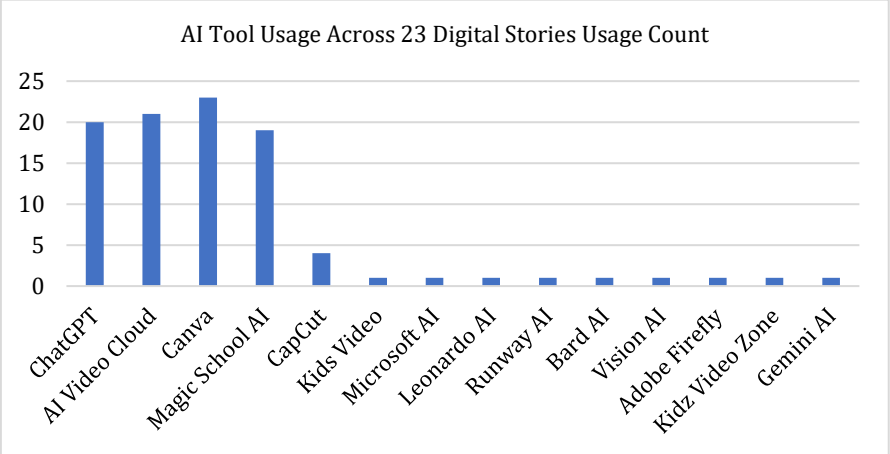


Figure 6. AI Tool Usage Across 23 Digital Stories

Additional tools, including CapCut, Kids Video, Microsoft AI, Leonardo AI, Runway AI, Bard AI, Vision AI, Adobe Firefly, Kidz Video Zone, and Gemini AI, were used more selectively (each appearing once or only a few times), typically to enhance specific stylistic or technical effects within individual projects. All digital stories were accompanied by lesson plans that incorporated the narratives into instructional sequences. Most lesson plans followed a three-stage pedagogical structure, consisting of: (1) pre-viewing activities (e.g., vocabulary activation, prediction tasks); (2) while-viewing comprehension activities (e.g., guiding questions, sequencing tasks); and (3) post-viewing communicative tasks (e.g., speaking discussions, written reflections). This consistent pedagogical structure indicated that pre-service teachers were able to transfer the AI-generated narrative into meaningful instructional resources, showing not only technical skills but also pedagogical reasoning.

Discussion

The findings of this study demonstrate that structured AI-integrated training can effectively enhance EFL pre-service teachers' ability to develop digital storytelling materials, confirming the need to introduce AI tools to improve AI literacy in teacher education programs. This is supported by the participant's high levels of satisfaction and confidence, as well as the completion of 23 AI-assisted digital narratives. The alignment between the training stages and the final product output suggests that a step-by-step process is a critical factor in successfully integrating AI tools. This aligns with prior research showing that structured and scaffolded AI training can improve teachers' readiness and motivation to use AI tools (Daher, 2025; Guan et al., 2025). Based on this finding, this study suggests that providing short, focused training can develop sufficient practical skills and enhance pre-service motivation and confidence in using AI tools.

However, these findings were quite contrasting in some views. Although participants reported high confidence, earlier studies in the Indonesian context, as well as those by (Aisyiyah, 2022; Hastomo et al., 2024), still show that many pre-service teachers exhibit limited AI readiness and only moderate technological knowledge. This suggests that the confidence reported in this study may reflect short-term perceptions influenced by guided support rather than deeply internalized AI competence. Therefore, while the training was practical, sustained learning opportunities and other training methods may be needed to ensure long-term impact. This contrast underscores the importance of providing opportunities for practice through short-term workshops or training to support long-term AI literacy development.

Furthermore, the digital products created by participants reflect the pedagogical advantages of integrating AI into digital storytelling (DST) practices. The selection of genres, dominated by fables, fairy tales, fantasy, and romance, mirrors the typical narrative structures commonly used in EFL classrooms, confirming prior claims that DST provides accessible, linguistically manageable input for learners (Banoth & Muthyala, 2025; Moradi & Chen, 2019). The preference for familiar story types also suggests that AI tools may help reduce cognitive and technical issues, enabling pre-service teachers to focus more on pedagogical alignment and narrative coherence. These patterns support (Yu & Wang's, 2025) findings that DST can enhance teachers' creativity and digital literacy while providing opportunities to use multimodal language-learning activities.

Yet, there is a perception that traditional DST encourages deep reflection and creative thinking; the use of AI tools in this training can simplify content creation, reducing cognitive effort (Wei et al., 2025). In this training, AI tools can generate scripts, visuals, and voice-overs quickly, which poses a risk that the EFL pre-service teacher engages less in reflective and creative development of the DST. Thus, the preference for familiar genres suggests that pre-service teachers may rely on narratives that reduce linguistic and cognitive complexity when new technological workflows are introduced.

Additionally, the widespread use of AI tools across all stages of production demonstrates the feasibility of integrating multimodal AI applications in EFL material development. Tools such as Canva AI, ChatGPT, AI Video Cloud, and Magic School AI were central to students' workflows, consistent with literature describing these platforms as accessible and powerful aids for multimedia story creation (Akbarani, 2024; Belda-Medina & Goddard, 2024). The heavy reliance on ChatGPT for scripting and Magic School AI for pedagogical material development illustrates the growing potential of AI to support both creative and instructional design tasks, which aligns with previous findings that AI can expand teachers' productivity and instructional creativity (Idham et al., 2024; Kuddus, 2022). This also highlights the potential for combining generative AI tools to support both creativity and instructional design.

Moreover, the lesson plans accompanying each story demonstrated that pre-service teachers could not only produce digital stories but also integrate them meaningfully into EFL instructional sequences. The consistent use of three key stages, pre-viewing, while-viewing, and post-viewing, indicates that participants applied pedagogical principles aligned with communicative language teaching and multimodal learning theory. These results mirror earlier research showing that DST encourages the integration of language skills, critical thinking, and creative engagement in EFL contexts (Kaminskienė & Khetsuriani, 2019; Tamimi, 2024). This indicates that teacher education in this AI era has bridged the technological production with the pedagogical integration to create meaningful learning.

Finally, the high satisfaction scores found in the perception survey provide additional evidence that AI-supported training can positively influence pre-service teachers' affective and motivational dimensions. Participants strongly agreed that the training increased their creativity, expanded their practical competencies, and improved their confidence in using AI tools in the classroom. This aligns with studies by (Kayaalp et al., 2025; Pu et al., 2021), which suggest that AI-enhanced teacher training enhances both technological competence and professional self-efficacy. These benefits are essential because motivation and confidence often determine whether pre-service teachers will continue to use AI tools independently after training ends (Guan et al., 2025; Zhang et al., 2023).

4. CONCLUSION

This study shows that structured AI training session plays an essential role in preparing EFL pre-service teachers to design multimodal instructional materials. By engaging in a staged workflow, from prompting to lesson planning, participants gained practical AI literacy, enhanced creativity, and improved confidence in integrating AI-assisted digital storytelling into classroom contexts. These outcomes underscore the importance of AI-focused modules in teacher education curricula and providing institutional support to ensure equitable access to AI tools and the sustained development of digital pedagogical skills.

The findings also suggest practical implications for teaching practice. The AI training workflow enhanced participants' lesson planning skills. Their work demonstrated clear alignment between narrative content, language objectives, and learning tasks. Additionally, the integration of AI tools encouraged more systematic assessment strategies, such as the design of comprehension questions, vocabulary tasks, and reflective activities based on the digital stories. These developments indicate growing readiness for digital pedagogy, as participants demonstrated improved ability to evaluate, select, and apply AI tools in meaningful ways. However, the study's scope is limited to a single institution sample, a short training duration, and a group-based project format, which restricts generalizability and prevents a deeper examination of long-term skill retention or individual competence development. Additionally, the descriptive analysis of digital story products did not include detailed rubric-based evaluations.

Future research should involve broader, more diverse samples, longitudinal follow-up studies, and more systematic assessments of AI-generated materials to better understand the sustainability and pedagogical impact of AI literacy training. Lastly, future studies may also explore how pre-service teachers apply these AI-supported materials during teaching practicum and whether their motivation and confidence remain correlated with continued independent AI use over time.

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