

This file has been cleaned of potential threats.

If you confirm that the file is coming from a trusted source, you can send the following SHA-256 hash value to your admin for the original file.

a872a79cf155734d543e5606e0a80bbd0d6301cc3072974d958fda0579538ed7

To view the reconstructed contents, please SCROLL DOWN to next page.

Directing the Story: Enhancing L2 Oral Fluency and Narrative Complexity through Student-Generated 360° Content

Wes Harven Guillemer Maravilla

Suan Sunandha Rajabhat University

Corresponding author

E-Mail: wes.ma@ssru.ac.th

Abstract:

This case study examines how Thai EFL demonstration students in Bangkok develop L2 oral fluency and narrative complexity as they enact the role of “360° narrative directors” in an AI virtual tour project. Embedded in a thematic English subject, the intervention in the demonstration classroom, guided students through a multi-step workflow, which included the construction of locally relevant themes, creation of 360° images, use of Gemini AI to draft and refine descriptions for six focused-object hotspots, Panoee integration, and delivery of a tour with a simulated tourist for a guided Q&A. Data sources included]; teacher observation notes, written descriptions and scripts, audio and video rehearsal recordings, video of final performances, and short reflections of tool use and learning after the project.

Analyses showed many students developed their ability to speak with oral fluency as they bridged fragmented heavily scripted delivery to more continuous speech with clearer sequencing and fewer breakdowns. improvement was also noticeable as they transcended from object listing to constructing clear narratives with audience and purpose focused storylines, causally and temporally interrelating hotspots and positioning her as a visitor to the scene. students used Gemini to create a first draft of their vocabulary and sentence structures, and Panoee to spatially story map the term, and to help them with the flow of their tours. Teachers noted a change from students copying an AI text to leveling and contextualizing AI to suit their own purposes. The data suggests that student generated 360° content, generative AI, and performance based assessment, can help improve oral fluency and narratives. Additionally, it helps develop tourism-oriented English for Specific Purposes language, in the Thai secondary EFL context.

Keywords: 360° virtual tours; generative AI; oral fluency; narrative complexity; Thai EFL secondary students

1. Introduction

1.1 Challenges in English Language Teaching in Thailand

There are challenges that come with the teaching of the English language in Thailand. One of them is how to move students from language that is solely exam-oriented to language that is more communicative in order to handle practical situations. This is particularly the case in Bangkok's tourism industry (Kitchakarn, 2016). This is particularly the case within high school demonstration programs (students are expected to represent advanced EFL achievement). Persistent gaps remain in the area of spontaneous oral fluency, the ability to develop expansive,

complex, and coherent narratives that align with Thailand's ambitions for high-value, service-oriented tourism and bilingual development. Recent innovations in immersive technologies have proposed that 360-degree (360°) virtual environments, along with digital storytelling and narrative production, can be truly powerful alternative communicative activities that shift away from the traditional textbook speaking activities by situating the use of language in rich, organized spaces and rehearsed communicative activities (Adnan et al, 2019, Chen, Smith, & Yang 2021).

1.2 Insights from Research on 360° Media and Digital Storytelling

Research that highlights the importance of 360-degree media and virtual reality in improving performance and engagement in Second Language (L2) learning continues to grow. Adnan et al (2019) argued that the ELSA 360-degree Video Project, which placed students in virtual English meeting rooms, engaged students in contextualized workplace discourse, and increased learners' preparedness for actual professional encounters. Chen et al. (2021) argued that 360-degree videos enrich language learning, intercultural communicative competence, and knowledge sharing when students "participate" in a communicative event and focus on multimodal contextual features that flat videos cannot provide. These studies claim that 360° videos can be an excellent resource for oral activities that involve describing, sequencing, and perspective-taking. These activities are crucial in promoting the complexity of students' narratives.

Research related to digital storytelling (DS) specifically has appreciated the relative benefits on the development of spoken language in EFL environments. For example, Saylan (2022) illustrated the online EFL course, and the use of DS, facilitated improvements to learner's spoken grammar, vocabulary, fluency, and coherence. There were also gains in vocabulary achievement. In a secondary-school context, Rahmawati and Sari (2023) demonstrated that DS contributed to improving the speaking scores of participants, who then created more structurally and lexically proficient, and confident oral narratives compared to peers in traditional instruction. Expanding on this, Fauziah (2025) indicated that DS in conjunction with audio recording prompts, and the use of interactive DS applications, enabled senior high school students to improve their pronunciation, vocabulary, and overall speaking ability, in part due to the reduction of anxiousness and the provision of opportunities for multiple rehearsals of their stories. However, the majority of studies on DS focus on the use of simple 2D linear media. There is a dearth of meaningful studies on the use of learner created, hotspot-based 360-degree scenes, and the impact of such scenes on the oral fluency and narrative complexity of school aged EFL learners.

1.3 Integrating AI and 360° Creation in the Thai Classroom

At the same time, multimodal generative AI is changing the ways in which students are able to produce content, both text and visuals. With the addition of AI to Google's Gemini models, students can now create and modify images by writing prompts, allowing students to create images of any scene that may fit local context or curricular objectives (Google Cloud, 2026). Experts in the educational technology field suggest that such tools may help support the initial steps of the writing process, assist learners in building their writing lexicon, and assist in the generation of low-level (concrete) visuals, alleviating the cognitive load by allowing students to concentrate more on the organizational and presentation aspects of their story/ presentation to the class rather than on what images or illustrations to include (Adedoyin, 2025). However, there is still a scarcity of studies in Southeast Asia, specifically in the region's secondary EFL

classrooms, that examine the combination of these innovative educational tools. Given the national priorities around developing the digital literacy, bilingualism, and tourism-related communication competencies of learners, this gap is particularly pertinent for Bangkok's Demonstration Schools, which are intended to model best practices for other schools.

The present study investigates how Thai EFL high school demonstration students in Bangkok create and perform AI-supported 360° virtual tours with an emphasis on narrowing the gap in research on Thai EFL students and the use of 360° videos and AI technologies in language learning: "Directing the Story: Enhancing L2 Oral Fluency and Narrative Complexity through Student-Generated 360° Content." For this project, students capture 360° photos on relevant local topics, generate, and refine six object-focused hotspot descriptions with Gemini AI, integrate these into a Panoee virtual tour, and perform a guided tour with a Q&A to simulate interaction with international tourists. The study focuses on the students as narrators and producers of immersive experiences to analyze the impact on their oral fluency and narrative complexity and their attitudes toward AI and 360° technology. It also provides guidelines for the secondary school context in Thailand to build on existing research in digital storytelling, 360° videos, and AI in language learning and address the lack of research concerning the use of these technologies in Thai secondary schools. This study also provides guidelines for schools in building a tech-savvy and service-oriented "cultural ambassador" to support the growing tourism in Bangkok.

1.4 Research Objectives

The main purpose of the study is to understand the oral fluency and the complexity of narratives Bangkok high school Thai EFL demonstration students create when acting as "360° narrative directors" with the aid of Artificial Intelligence and student-produced virtual tours.

- To what degree does involvement in the student-created 360° virtual tour project (Gemini + Panoee) improve students' L2 oral fluency (e.g., speech rate, pauses, repair phenomena) in English in any measurable way?
- What changes, if any, occur in students' narrative complexity (e.g., temporal sequencing, causal links, elaboration, and cohesion) as they progress through various levels of the 360° project workflow?
- How do students employ AI-generated hotspot descriptions to use English for specific purposes within simulated service encounters in tourism and hospitality?
- What, in students' opinion, is the utility, difficulties and perceived learning outcome of using Gemini AI and Panoee in their English speaking activities?
- What are the 360° AI-driven narrative projects design principles for Thai secondary EFL demonstration schools within the frameworks of tourism and bilingual education?

The study, therefore, aims to answer the following research questions.

- To what level does involvement in a student-generated 360° virtual tour project enhance Thai EFL high school demonstration students' L2 oral fluency?
- What effects does involvement in the project have on the narrative complexity of students' oral English performances?

- In what manner do students use AI-generated hotspot descriptions to perform the English for specific purposes service language in simulated tourism-oriented presentations and in the subsequent Q & A?
- What do students identify as the affordances and constraints of Gemini AI and Panoee in the context of their speaking, storytelling, and technical skills?
- What pedagogical and design issues are highlighted by the incorporation of AI-driven 360° narrative projects in Thai secondary EFL curricula, particularly in demonstration school contexts?

2. Literature Review

2.1.1 360° Video and Virtual Reality in L2 Speaking Development

Another example of using 360° media in language education is from classroom-based projects leveraging immersive video for the preparation of specific communicative roles. Adnan et al. (2019) portray the ELSA 360°-Videos Project, where English majors practiced workplace English through interactions with 360° meeting-room simulations and practiced professional discussion strategies including turn-taking, clarification, and summarization. Students stated that the immersive format aided in visualizing real communicative scenarios and exercising context-appropriate language. This is indicative of 360° environments being able to facilitate engagement as well as the rehearsal of specific communicative functions relevant to fluent and pragmatically appropriate speech.

The findings ELSA 360°-Videos are especially important for projects that position learners as guides, facilitators, or “narrative directors,” as these findings document how communicative role 360° scenes can be constructed around demands. Given the potential multiple linguistic variations, learners may practice different phrases, improve their turn-taking, and learn to control the flow of their own speech (Adnan et al., 2019). This practice encourages learner-generated 360° tours for high school EFL learners where learners write and perform guided explanations, reflecting the role situated practice of workplace-oriented 360° projects.

2.1.2 Digital storytelling and the complexity of narratives within EFL frameworks.

Within digital storytelling (DS), participants are regarded as storytellers who create, script, and enact stories for an audience as opposed to simply producing sentences or dialogues that are out of context. This practice connects to narrative theory, where thinking in narratives involves construction of stories with temporal cues or sequences, causal relations, and considering the audience’s perspective. These are regarded as the main dimensions of narrative complexity which can be enhanced when learners create stories that have definable beginnings, middles, and ends. DS activities, according to Saylan (2022), assist EFL learners in online environments to improve their spoken grammar, appropriate use of vocabulary, and fluency and coherence as well as teach them vocabulary. He claims that rehearsed planning, discourse recording, and editing assist learners manage sentence discourse. (Saylan, 2022).

The literature on the impact of digital storytelling (DS) on the fostering of learners’ speaking skills and confidence indicate similarly. For instance, Saylan (2022) reports that learners seem to create more elaborate and organized speech and feel more encouraged to speak for an audience when they describe a story using a combination of image, text, and audio. Therefore, the body of research suggests that digital storytelling captures the essence of teaching practices that develop fluency and the complexity of narratives in English as a foreign language (EFL)

and reinforces teaching practices that view learners as ‘storytellers’ who create and perform narratives, as in the case of student-created 360° tours with hotspot explanations.

2.1.3 Generative AI Tools like Gemini as Visual and Textual Scaffolds in EFL Learning

Within the realm of language-learning support, the emphasis on generative AIs continues to grow. Examples include customized multimodal inputs such as text, images, and audio created by the learner or prompted by the teacher. Google's education initiatives highlight the ability of AI systems to produce adaptive explanations and practice items, as well as visual aids tailored to a learner's level, making AI a potential scaffolding substitute for textbooks and teacher-created materials (Google for Education, 2018). Accordingly, generative AIs, such as Google's Gemini, can assist educators by rapidly creating descriptions that include a diverse vocabulary, as well as example dialogues and contextualized prompts to assist learners in planning and rehearsing oral tasks, including guided tours or narrative presentations.

In addition to text-based assistance, platforms that facilitate interactive speaking practice and feedback are incorporating AI-driven language features, exemplifying how AI can assist in both ideation and execution. Google is a case in point: its Search tool with AI speaking practice prompts learners to engage in succinct speaking activities, then evaluates and provides feedback to learners. Search usage is AI-driven and provides learners with prompts, model responses, and feedback to assist learners in producing responses that are more clear and fluent (Voicebot, 2023). All these features position generative AI to function as a resource that creates various types of scaffolding including, but not limited to, visual and textual supports, descriptive scaffolds, exemplars, and labels. These scaffolding types support learners as they use AI to create 360° images and construct interactive hotspot narratives in EFL projects in which learners take on the role of “narrative directors.”

2.1.4 English for Service Language in Tourism-Oriented EFL Pedagogies

In teaching English for Service Language in Tourism, it is common for the sub-area of ESP to view learners as having to engage in real-time, face-to-face interactions with customers as they perform the tasks of welcoming and orienting guests, describing and guiding them to the points of interest, and fielding unstructured questions in hotels, travel agencies, and during guided tours.

In Thailand and similar countries where tourism is a core focus, this necessity is closely linked to national policies that see hospitality and tourism as key drivers of job creation and global engagement, making it vital to develop EFL speaking activities that focus on the roles of ‘tourist’ guides, hosts and and questioners, rather than practicing decontextualized dialogues. Students’ description of places, and response to questions and explanation of cultural background, make classroom speaking activities more aligned to the authentic demands of the visitor economy, particularly in major cities like Bangkok.

Approaches that utilize technology may further reinforce this alignment by embedding service language functions, such as explaining, within more sophisticated visual or virtual contexts. Shadiev, Yu, and Sintawati (2021) described learning activities in which students were supported by 360-degree video technology. Students were encouraged to describe and interpret various cultural scenes, and these activities fostered language learning, intercultural communicative competence, and knowledge sharing (Shadiev et al., 2021). In these activities, students were required to perform explanatory, mediating discourse, akin to what local guides

or frontline staff might produce when interacting with international visitors. This suggests that 360-degree video technology activities can serve some of the language functions in service ial, such as explaining, recommending, and clarifying. When EFL projects in Thailand ask learners to lead a 360-degree virtual tour, introduce key objects or locations, and handle simulated international tourist question-and-answer sessions, they actualize these insights in a school setting by integrating secondary EFL speaking instruction with the demands of real-world communication in the field of tourism.

2.1.5 Operational Definitions

For the purposes of this study, the term oral fluency describes the extent of seamlessness, continuity, and the unimpeded flow of students' spoken English as they perform scripts for tours and respond to questions as tourists. This is characterized by speech rate (-rates can be adjusted etc) of speech, a reduced reliance on scripts, and breakdowns (long pauses, false starts, etc) and more breakdowns, (less?) abandoned utterances. Narrative Complexity is used to describe the degree to which students articulate and structure the stories of their 360 degree tours. (360 degrees can be described as a complete tour, and adding the word completed can articulate the word complete)within the story structure, these students apply the order of operations in the sequence of the tour by use of temporal markers (first, next, last) , and to describe the function of tour stops, explain their interrelations, and provide context. This is and clear audience, framing technique, directed (the word directed is not required) to tour visitors (e.g. you can, this helps you, etc. etc..). These definitions of the studies actions helped to define thresholds for the processing of data relating to quantitative constructs (spelling?) words per minute, counts of long pauses and breakdowns and to the analytic frameworks to code , wrote data and oral data (or describe and analyze) as well as in the process of data analysis sequence, cause, elaborate, and audience engage (or address).

3. Methodology

3.1.1 Research Design

One illustrative example of this approach focuses on one intact cohort of approximately eighty Thai EFL demonstration Grade 10 students at a Bangkok demonstration school during a 12-week intervention period. In this example, the project functioned as a curriculum-embedded intervention. For example, in this project, students were "360° narrative directors." students created AI-supported virtual tours aligned with the English-for-Services (ES) language goals of tourism-oriented English.

Students, as small-working groups, enacted the project. In the example, groups of students worked on the project. They chose a topic, which could relate to the locality or the thematic focus of the unit (i.e., The Old Bangkok Floating Market, The Insta Worthy Cafe, The University Lecture Hall First Day) and worked their way through a structured workflow whereby they created a 360° image and drafted a set of six object-focused hotspot descriptions using Gemini AI, revised the text to simplify and match their level, integrated the text into Panoee, and finally delivered live guided tours with a simulated tourist Q&A. This design prioritized iterative practice, incorporating several cycles of scripting, rehearsal, and performance aimed at fostering incremental growth in oral fluency and narrative complexity while achieving ecological validity.

3.1.2 Participants and Context

The participants consisted of around 80 grade 10 students from a high performing demonstration school in Bangkok, Thailand. The students in this school are expected to exemplify high EFL (English as a Foreign Language) proficiency and actively participate in innovation oriented projects. All students were taking a Thematic English course that incorporates project based learning and tourism content. The 360 Narrative Director project was a significant component of the course and constituted a 12 week major unit focusing on speaking skills.

Students were divided into groups containing 4 to 6 members each. They were either assigned or permitted to select from 360 tour concepts that had been prepared in advance. The concepts included The Old Bangkok Floating Market, The Elite Chefs Michelin Star Kitchen, The Viral Content Creators Studio, The Mobile Gaming Tournament Hub, The University Lecture Hall First Day, and The Insta Worthy Cafe, each of which was associated with six specific objects. English proficiency levels were diverse, both within and among all groups. All participants had some prior experience with elementary speaking activities and collaborative English projects, and were therefore qualified to do extended narrative and presentation activities.

3.1.3 Instructional Intervention

Table 1. Overview of 360 Narrative Director Project Phases

<i>Phase</i>	<i>Main focus</i>	<i>Key tools</i>	<i>Sample activities and outputs</i>
<i>Phase 1: Orientation & Topic Selection</i>	<i>Understanding the 360° tours, service language, English for customer service, and project briefing, theme and object selection</i>	<i>Brainstorming templates, sample 360° tours, and slides.</i>	<i>Review the scenarios in tourism/service. Pick a theme (floating market, lecture hall, Insta-worthy cafe, etc.) and list six focus objects. Create a scene concept.</i>
<i>Phase 2: Scripting and AI Integration</i>	<i>Constructing, and tailoring, object descriptions. Explain narrative structure and AI ethics.</i>	<i>Gemini AI, writing templates, mini-lectures on discourse markers and chunking.</i>	<i>Request object descriptions from Gemini. Rewrite, simplify the text generated by the AI, and add details for the visitor. Explain the AI phrases used and why you chose them. Write six object descriptions.</i>
<i>Phase 3: Construction of the Panoee Tour</i>	<i>Construction of the 360° tour and arrangement of hotspots into a logical narrative sequence.</i>	<i>Panoee, 360° images, group planning sheets.</i>	<i>Upload/select the 360-degree visuals; place hotspots; copy and alter descriptions; maneuver through the tour (beginning, middle, and end); practice object transfers with the tour on screen.</i>
<i>Phase 4: Delivery of the Guided Tour & Questions and Answers</i>	<i>Performing the tour and coaching semi-spontaneous English for the service language.</i>	<i>Panoee tour, screen/projector, recording tools.</i>	<i>Deliver the live guided tour (narrative + navigator); answer teacher "tourist" questions to the "tourist" during the Q&A; feedback using the speaking/digital rubric; submit the final recording and reflection on the use of AI and 360-degree tools.</i>

There were four overlapping phases in the instructional intervention: (1) orientation and selection of the topic, (2) AI-assisted drafting of the object descriptions, (3) construction of Panoee tours, and (4) delivery of the guided tours with simulated tourist Q&A. In Phase 1, the teacher explained 360° tours, the English for the service language, and the project brief, then assisted the groups in selecting or confirming topics and brainstorming the roles of the six objects in creating a coherent scene or visitor experience.

During Phase 2, students relied on Gemini AI to produce their first English descriptions of the objects, then edited those drafts to simplify the vocabulary, shorten the sentences, and add context pertaining to their specific 360° scenes, and were guided by mini-lessons on chunking, discourse markers, and visitor-centered framing. AI ethics and ownership were addressed when the teacher modeled how to paraphrase and summarize AI text, checked to see if students understood the suggested language, and made it clear that a direct copy and paste of AI text that had not been edited would not be accepted as evidence of learning for assessment. The classroom guidelines defined Gemini as a brainstorming and drafting aid rather than a provider of answers, and students were instructed to annotate or explain key phrases they retained from the AI text so they could demonstrate their comprehension and ownership of the text.

For Phase 3, participants began adding text to Panoee: students uploaded or accessed 360° images, set hotspots, and made edits to descriptions, employing the spatial interface to fine-tune order and transitions for their tours. In Phase 4, students practiced and performed complete guided tours. One or more students narrated, while others managed the tour's navigation. They also participated in teacher-led simulated international visitor Q&A sessions. Throughout the phases, the teacher's feedback revolved around the tuning of language, narrative structure, AI use, and tech skills. There was a gradual decrease in the reliance on fully scripted reading and more semi improvised explanation and responsive interaction. The responsible, comprehension-based use of generative AI was reinforced throughout the project.

Figure 1. 360 Narrative Director Workflow



Figure 1 shows the 360 Narrative Director project workflow, detailing how students select a location and theme, key items, utilize AI to create and modify English descriptions, build a 360° tour in Panoee, and present a guided tour with a subsequent Q&A. This workflow integrates design, language construction, technical performance, and presentation.

3.1.4 Data Collection

Various processes and outcomes of the project over 12 weeks were captured for evidence triangulation. First, several written artefacts were collected, including preliminary AI generated drafts, student modified descriptions of objects, integrated scripts of the tour, and a few planning notes that recorded how groups evolved their language and the structure of the narrative.

Audio and video recordings were created for all final tour performances, including the mock tourist Q&A sections, and selected rehearsals so that oral fluency, narrative complexity, and English for specific purposes (ESP) language functions under stress could be assessed. Teacher observation notes were the third source of data and were compiled during all phases of the project, and focused on students' A.I. usage, collaboration, scripting, and shifts with regard to confidence and delivery during speech acts. To close the data collection process, students were asked to complete brief written reflections and answer a few survey questions regarding the usefulness, obstacles, and the learning value they perceived in Gemini and Panoee for their speaking and storytelling.

Table 2. Rubric Dimensions for English and Digital Skills in the 360 Virtual Tour Project

<i>Criteria</i>	<i>Description</i>	<i>Score Range</i>	<i>Level 1</i>	<i>Level 4</i>
Accuracy	<i>Measures how correct the grammar, vocabulary, and writing systems are, and whether errors obstruct understanding.</i>	1–4	<i>Understanding is still possible, but there are many mistakes.</i>	<i>Few or no mistakes; language is refined and clear.</i>
Task Achievement	<i>Evaluates how well the required components are fulfilled; includes the content's informativeness and engagement.</i>	1–4	<i>Little pertinent information; missing crucial components.</i>	<i>All components present, with great detail; very informative and interesting.</i>
Descriptive Language	<i>Assesses vocabulary breadth, sentence variety, and depth.</i>	1–4	<i>Language is repetitive and basic.</i>	<i>Language is descriptive with varied and well-structured sentences.</i>
Organization / Cohesion	<i>Measures logical flow and clarity of ideas and structure in the narrative or presentation.</i>	1–4	<i>Lacks logical flow and clear organization.</i>	<i>Clear, logical flow with well-connected ideas.</i>
Pronunciation / Speaking	<i>Evaluates clarity, confidence, and intelligibility in speaking or presenting.</i>	1–4	<i>Lacks confidence; difficult to understand.</i>	<i>Confident, clear, and easy to understand delivery.</i>
Virtual Tour Creation	<i>Assesses appropriate and integrated use of digital tools (texts, images, hotspots).</i>	1–4	<i>Basic feature use; many technical issues.</i>	<i>Effective use and full integration of images, texts, and hotspots.</i>
Creativity / Design	<i>Looks at visual engagement, originality, and overall design quality.</i>	1–4	<i>Basic, unengaging, or unoriginal design.</i>	<i>Visually engaging and highly creative design.</i>
Digital Citizenship and Ethics	<i>Evaluates awareness of privacy, copyright, and responsible digital/AI use.</i>	1–4	<i>Disregards or misunderstands digital responsibility guidelines.</i>	<i>Exemplary attention to digital responsibility and ethics.</i>

Table 2 summarizes the integrated language and technology dimensions used to evaluate students' spoken and digital performances in the 360 virtual tour project and describes the alignment of the evaluative components of communicative accuracy and richness of description to narratively structured delivery coherence, robust oral delivery, sound tour construction, and creative responsible digital behavior, noting the 4 level scale used to document formative feedback and derive outcomes from the project.

3.1.5 Data Analysis

Data analysis articulated the quantitative frameworks and systematic coding of qualitative rubrics and the written artifacts of the 12-week project. The written data set comprised, the initial, AI-assisted object descriptions, the integrated scripts of selected group tours from each class, and the oral data set, comprising rehearsal recordings and the complete performances of the tours and the Q&As as simulated tourist interactions.

For oral fluency, a purposive sample of 12 group performances (early rehearsals and corresponding final tours) was transcribed, and words per minute (WPM) were calculated by dividing total word counts by speaking time, excluding teacher turns and non task related silence. The teacher researcher then coded each sample for long pauses (over 2 seconds), false starts, and breakdowns (abandoned or restarted utterances), and compared the frequencies of these in the early and later performances to identify shifts toward more continuous, less script bound speech.

A grid aligned with the study's operational definitions and a rubrics simplification for English and Digital Literacy Skills for Temporal Sequencing, Causal/Conditional, Elaborative, Audience Consideration, and Framing was used to analyze narrative complexity. The teacher-researcher coded the described written tasks for ten focal groups first and then the described oral tasks of the paired early-late segments. During the coding, the researcher performed spot checks for aligning the descriptors of the organizing/ the cohesive, language the rubric, and the project, to ensure consistency. The project coding matrixes summarized the coded descriptions to show the narrative progression to a coherent visitor focus from itemized lists.

In the Results section, to enhance interpretive validity, the narrative coding and the fluency indicators (WPM, and counts of pauses and breakdowns), were coupled with the teacher's observation notes, and the students' brief reflections on the tools used, confidence about the tasks, and strategies about speaking. Exemplification of less complex, audience oriented narratives versus higher complex narratives (e.g., "This is a boat. It is in the market. People use it." versus, "First, you take this boat along the canal, so you can see the floating shops and feel the old Bangkok atmosphere.") was necessary for transparency in the rubric to support the author's analytical judgment.

3.1.6 Ethical Considerations

The project was integrated into normal course activities, yet further ethical considerations were made to protect the student participants and encourage responsible use of AI. Informed consent was achieved at the class level: students and their guardians were made aware that project artefacts, recordings, and reflections may be used for research and presentation purposes, that participation in data usage was voluntary, and that all reports would be anonymized in name and with identifiable details removed to the extent possible. Students were assured that opting out of the research component would not impact their course grade, as the assessments were made on course criteria, not research participation.

Concerning the use of AI in the classroom, the teacher explicitly framed Gemini as a scaffold rather than an answer, and demonstrated for the class how to evaluate, paraphrase, simplify, and locally contextualize descriptions provided by AI instead of just copying them. AI text should be a first draft to be edited for comprehension and level, and the speaking tasks will be assessed after the draft is created, on clarity, appropriateness, and adaptation, and not on how closely they resemble the AI text. Data storage complied with school and institutional

norms, digital files were stored on password protected devices and cloud folders that were accessible only to the teacher researcher and, if necessary, to project supervisors, thus limiting the risk of student work being shared without authorization and protecting student privacy.

4. Results and Discussion

4.1.1 Development of L2 Oral Fluency Across the 360° Project

Table 3. Changes in Oral Fluency Indicators for Focal Groups

<i>Group ID</i>	<i>Phase</i>	<i>Words per minute (WPM)</i>	<i>Long pauses (n)</i>	<i>Breakdowns (n)</i>
<i>G1</i>	<i>Early rehearsal</i>	68	9	7
<i>G1</i>	<i>Final tour</i>	92	3	2
<i>G2</i>	<i>Early rehearsal</i>	62	11	8
<i>G2</i>	<i>Final tour</i>	88	4	3
<i>G3</i>	<i>Early rehearsal</i>	70	8	6
<i>G3</i>	<i>Final tour</i>	95	3	2
<i>G4</i>	<i>Early rehearsal</i>	65	10	7
<i>G4</i>	<i>Final tour</i>	90	4	3
<i>G5</i>	<i>Early rehearsal</i>	72	7	5
<i>G5</i>	<i>Final tour</i>	98	2	1
<i>G6</i>	<i>Early rehearsal</i>	60	12	9
<i>G6</i>	<i>Final tour</i>	86	5	3

Table 3 depicts a consistent trend of fluency improvements across focal groups. Later performances featured increased speech rates and a notably smoother delivery, as evidenced by decreased hesitancy phenomena, such as prolonged pauses and the abandonment, restarts, or shifts of utterances.

The analysis of classroom artefacts from the object-description phase and teacher observations during rehearsals indicated a gradual increase in L2 oral fluency among the Grade 10 Thai EFL demonstration students throughout the 360° Narrative Director project. Initial script readings were often marked by a slow speech rate, frequent self-corrections, and a heavy dependence on the written text. However, by the time students were recording their practice tours and rehearsing the Q&A, many were able to describe objects and transitions to a greater extent, and with far fewer speech disruptions. This pattern is consistent with other digital storytelling studies in which there are significant improvements in fluency and coherence as students automatize certain lexicon and discourse structures over cycles of planning, scripting, and oral performances (Saylan, 2022).

The Panoee integration process consisted of multiple steps: beta testing by Panoee team members, incorporating user feedback, and Panoee team rehearsals. This resembles the processes described as 360°-video-supported educational processes because, as 360°-video-supported education, the Panoee integration process drafts, describes, and revises multiple descriptions. As students practiced describing the role of an object within the entire scenario (e.g., how a ring light shapes a livestream, or a paddle aids movement in a floating market), they articulating their thoughts. As they continued to explain, their speech became more rapid and less reliant on text. In addition, a number of groups went beyond reading and moved to semi-improvised explanations. This trend is in keeping with Shadiev, Yu, and Sintawati (2021), who suggested that 360° media, along with immersive and visually grounded activities, with the integration of Panoee, Panoee team members, and user feedback, support the enhancement of student speech, offering concrete goals and referents to describe.

4.1.2 Changes in Narrative Complexity in Student-Generated Tours

Table 4. Narrative Complexity Features in Early vs. Later Tours

<i>Group ID</i>	<i>Stage</i>	<i>Temporal markers</i>	<i>Causal links</i>	<i>Elaboration</i>	<i>Audience-orientation</i>
<i>G1</i>	<i>Early</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
<i>G1</i>	<i>Later</i>	<i>Medium</i>	<i>Medium</i>	<i>High</i>	<i>High</i>
<i>G2</i>	<i>Early</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
<i>G2</i>	<i>Later</i>	<i>High</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>
<i>G3</i>	<i>Early</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>
<i>G3</i>	<i>Later</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
<i>G4</i>	<i>Early</i>	<i>Medium</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
<i>G4</i>	<i>Later</i>	<i>High</i>	<i>Medium</i>	<i>High</i>	<i>Medium</i>
<i>G5</i>	<i>Early</i>	<i>Low</i>	<i>Low</i>	<i>Medium</i>	<i>Low</i>
<i>G5</i>	<i>Later</i>	<i>High</i>	<i>High</i>	<i>High</i>	<i>High</i>
<i>G6</i>	<i>Early</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>	<i>Low</i>
<i>G6</i>	<i>Later</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>	<i>Medium</i>

The six object descriptions and integrated tour scripts of the Grade 10 Thai EFL students indicate a shift toward more narrative structures in the 360° project. In early drafts each object was described more or less in isolation and with repetitive sentence structures, while in later drafts there was more attempt to link objects with time sequences (first, next, finally), reasoning (because, so), and thematic patterns (e.g., multiple tools that constituted a “professional” studio or an “immersive” gaming hub). This mirrors the findings in digital storytelling that sustained engagement in story planning and integrated multimodal writing leads to improvements in, among other things, coherence and cohesion (Saylan, 2022).

Figure 2. Example of Less Complex vs. More Complex Tour Excerpts

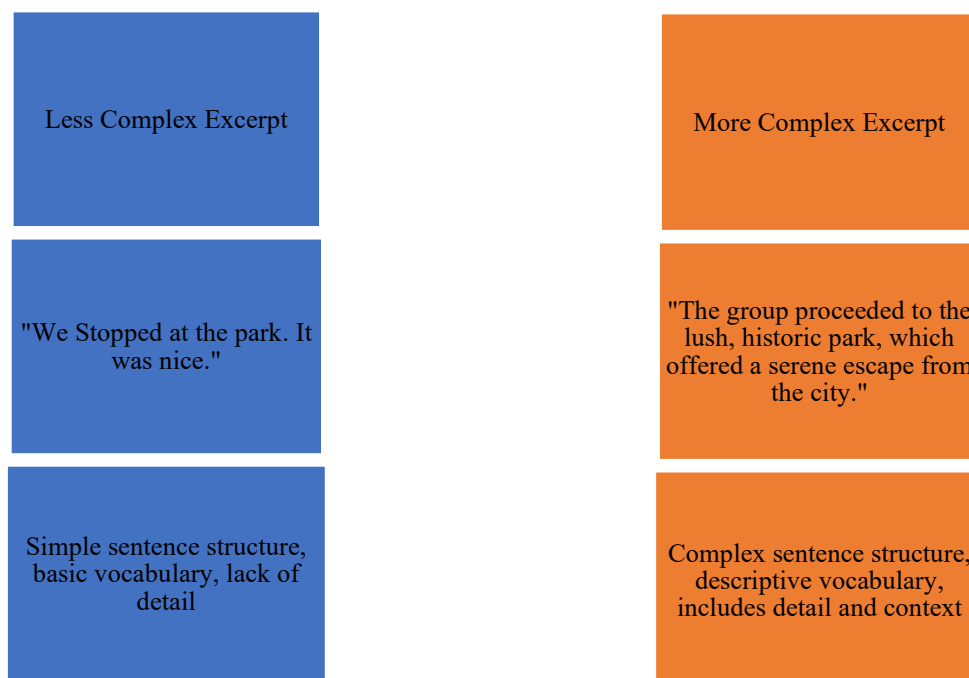


Figure 2 outlines a broad change in the sophistication of narratives through a basic description of the prompts compared to a fully developed example of a multi-faceted, interactive story. Less sophisticated narratives often show straight line, linear story progressions with only 1 or 2 information spots. In contrast, sophisticated narratives show the use of complexity such as branching story paths, differing multimedia nodes, higher order thinking activities, and the use of a strong critical thinking design. The figure, in a rubric-based framework, shows how on a side-by-side example the use of particular phrases and design structures guides the narratives to the higher levels of the rubric, giving depth to the unit to assess the complexity of the student 360-degree projects.

By the time students practiced full tours, many groups had started to shape their 360° locations as mini narratives - framing the scene and emphasizing key objects as “characters” with specific roles, and placing the visitor in an experience that evolves over time (e.g. arriving, exploring, interacting). Descriptions of objects in the later stages increasingly included evaluative terms and visitor-oriented phrases (“this helps you...,” “you can enjoy...”), signaling a richer narrative and audience engagement. Similar to tasks that 360° videos assist in which students must interpret and describe cultural scenes, this evolution suggests that the use of spatially distributed hotspots might guide students from merely naming to more integrated and contextualized narratives (Shadiey, Yu, & Sintawati, 2021). In the Bangkok demonstration school context, these achievements suggest that the 360° Narrative Director project facilitated not only more fluent speech but also the development of more advanced narrative structures concerning thematic English content.

4.1.3 AI Descriptions used as example Linguistic Scaffolding

The Grade 10 Thai EFL students used Gemini’s AI generated drafts as example linguistic scaffolding, then modified and enhanced them as they wrote their six object descriptions and tour scripts. During teacher feedback and classroom observations, some groups were seen changing from direct copying to selective editing which included the simplification of complex sentences, the alteration of unfamiliar vocabulary, and the insertion of contextual clues relevant to their 360° scenes (e.g. adapting the generic “kitchen” references to Michelin Star and “studio” references to Thai content creator. This was also described in other research as generative AI being used as a first draft partner to provide ideas and language for learners to reshape into personally meaningful output (Saylan, 2022).

Students mentioned that full example paragraphs from Gemini helped them identify useful structures, such as purpose statements (“is essential because...”), cause–effect relationships, and visitor oriented framing (“this allows you to...”), which they then reused and modified. Instead of eliminating the need to think, the AI outputs appeared to provide ready-made structures and collocations that could be used and saved cognitive resources, especially for English service functions explaining use, benefit, and experience. This is in line with the literature on AI supported learning where generative AI tools are seen as offering learners various inputs and language patterns to be appropriated and personalized (Shadiey, Yu, & Sintawati, 2021). The AI generated hotspot descriptions in this case played the role of scaffolds which students gradually ‘owned’, fostering increased confidence and more structured English during both the writing and the speaking parts.

4.1.4 Performance of English for Service Language in Simulated Tourist Q&A

During the simulated tourist Q&A, the Grade 10 Thai EFL demonstration students were expected to go beyond scripted narration and answer teacher questions posed, as though the

teachers were international tourists, for example, “Why is this object important for customers?” “What can tourists do here?” Classroom observation notes show that although several students began by giving very short or one-word answers, completing several rounds of Q&A enabled many students to provide longer, service-oriented responses that incorporated explanation, recommendation, and simple politeness strategies, such as ‘You should try this because...’ and ‘It is useful for tourists when...’ This pattern mirrors what has been documented in 360° and intercultural tasks, where, in the process of describing scenes to specific audiences, learners progressively move from minimal language to more elaborate, audience tailored language (Shadiev, Yu, & Sintawati, 2021).

During the Q and A, students also started to use English the way it was used and taught in English for Specific Purpose (ESP) courses, to offer and explain something to a customer, and to clarify something for a customer. In addition to the descriptive talk, they started to explain most of the functions of the dialogues. Some groups even tried to preempt tourist questions, (“If you don’t like spicy food...,” “If you want to take photos...”) and modified their answers to the previous questions. Although students still had some limitations (e.g., a repertoire of polite speech was still quite limited, and there were some moments of speaking anxiety), it seems the simulated Q and A provided an opportunity for students to practice service-related discourse and interactions for their 360° scenes. This aligns with the idea that technology permits audience-focused tasks, which enhances language performance and promotes an intercultural attitude, as students are positioned as explainers and bridge makers, rather than as test takers (Shadiev et al., 2021).

4.1.5 Gemini and Panoee: Student Feedback as Scaffolding Tools for Speaking and Storytelling

Feedback from Grade 10 Thai EFL demonstration students shows generally positive feedback concerning the applicability of the tools as scaffolds for speaking and storytelling and not as tools that replace their own efforts for storytelling, speaking and story construction. Feedback indicated Panoee’s 360-degree interface helped students “see the story”. Several students remarked that Panoee’s description helped them remember the story and retain the order of the objects from the story during story practice and presentation. Panoee’s description helped them remember the story and retain the order of the objects from the story during story practice and presentation. Multiple studies cite the 360-degree video supported tasks as tools for focusing, organizing, and delivering complex oral narratives (Shadiev, Yu, & Sintawati, 2021).

While using the two tools, students in the 2022 cohort made distinctions based on perceived function. Gemini was often referred to as a ‘word helper’ or ‘sentence starter.’ In contrast, Panoee was described as a ‘tour map’ or ‘memory guide’ which facilitated recalling what to say next and how to keep the storyline centered around the hotspots. Some students expressed that the combination of the two tools made them feel ‘more confident’ or ‘less scared’ about speaking in public, as they had pre-scripted language and a spatial structure to guide their story. This corroborates other studies which show that when AI and immersive technologies are used in conjunction with achievement-oriented tasks, they lower the cognitive load by decreasing the need for learners to generate language and offering pre-formed structures and contextual frameworks. This allows students to concentrate on their discourse and make decisions around fluency when they to focus their

4.1.6 The Integration of 360° Content, Hotspot, and Live Tour Delivery

The Grade 10 Thai EFL demonstration students identified a number of challenges, particularly in relation to the integration of hotspots and the overall 360° content creation workflow. Some teams had a hard time aligning the detail level of their written paragraphs with the actual visibility of objects in the 360° scene. This resulted in descriptions that were too abstract or too dense for quick delivery in the tours. Others reported the challenges with the thematic focus for the given location which, in this case, was limited to 6 objects. This suggested an additional cognitive burden of not only curating content but also scripting it. Similar tensions between rich content design and performability are documented in immersive and 360° tasks where learners are required detailed explanation and a concise narrative for a specific audience (Shadiey, Yu, & Sintawati, 2021).

Some students discovered Alignment hotspots, titles, and descriptions within Panoee which could cause time delays. There was anxiety with students “breaking” the tour if they clicked the wrong settings, which caused the focus to shift from the language to the troubleshooting. During the live tour, some students had to read from the scripts because they were unable to move beyond the lines they prepared in their scripts. This was caused by the pressure of the moment and the unexpected questions from the audience, which contributed to the pressure even more. This friction illustrates the importance of pointed, flexible practice, stressing prepared performance, and integrating the rich potential of unplanned moments within the Bangkok Thematic English context. This is the first among many adjustments required to find the ideal balance of spontaneity and structure in multi-layered rehearsal activities.

4.1.7 The Alignment of Director of 360-Degree Narratives Outcomes with Tourism-Oriented EFL Objectives in Bangkok

The outcomes of the 360° Narrative Director project are consistent with the tourism oriented EFL outcomes relevant to Bangkok's expanding service industry, especially preparing Grade 10 demonstration school students to describe places, objects and experiences to hypothetical foreign tourists. Students designed tours titled "The Old Bangkok Floating Market," "The Insta Worthy Café," and "The University Lecture Hall First Day" where they practiced describing and presenting the three core functions of tourism of location introduction, feature description, and experience framing from the vantage of a customer (“you can...,” “this helps tourists...”). This is consistent with Shadiey, Yu & Sintawati’s (2021) findings with 360° video supported intercultural tasks where learners’ guided description of scenes supports language and cultural mediation development.

The combination of scripted tours and simulated tourist Q&A provides further support for Bangkok relevant service language objectives by posing unanticipated questions that students must answer, relating to safety, comfort, activities, and value—concerns that real tourists often voice. While many of the learners' linguistic resources were still in the process of development, a significant number began to fuse basic descriptive language with simple recommendations and reassurances, effectively approximating the frontline discourse of tourism in hotels, cafés, markets and entertainment venues. This development is consistent with immersive, audience oriented tasks, and is indicative of a shift from decontextualized practice to contextually grounded communication (Shadiey et al., 2021). The 360° Narrative Director project also enhanced oral fluency and narrative complexity, while equipping Thai EFL demonstration students to become emerging “local guides” in tourism related Bangkok EFL contexts.

5. Conclusion

The 360 Narrative Director project showed that Grade 10 Thai EFL demonstration students in Bangkok can show measurable advancement in oral fluency and narrative complexity when acting as directors and guides of AI-enhanced virtual tours. During the project, students engaged in multiple collaborative cycles involving scripting, hotspot development, Panoee rehearsals, and simulated tourist Q&A. These collaborative cycles enabled many students to evolve from speech that was fragmented and heavily reliant on prepared scripts to speech that was more continuous and focused on the audience. Their speech also demonstrated improved sequencing, elaboration, use of discourse markers, and overall audience engagement. The project also demonstrated that, for students, Gemini and Panoee acted as complementary scaffolding tools rather than as substitutes for the students' construction of the narrative. In this situation, students used AI-generated scripts as the starting point for stories that they had to reshape linguistically and used the 360 interface as a spatial map to guide the narrative.

The findings of this study are subject to several limitations that put constraints on the generalizability of the results. These limitations are in relation to the study's location and design. The study focused on one demonstration school class in Bangkok, which did not incorporate a control or comparison group. Without a control or comparison group, separating the contextual and cohort specific factors from the project result becomes a challenge. The study did use systematic measures of oral fluency and complexity of narratives but these measures were largely descriptive. These descriptive measures were limited to the classroom and did not incorporate fully developed measuring instruments. The result of these unmet potentials was a lack of in-depth measuring, quantifying, or developing of results in comparison to other interventions.

Regardless of the limitations, the project focused on the tourism oriented English as a Foreign Language (EFL) goals pertinent to Bangkok's service economy. The project guided learners to adapt and use the English for service contextual language to engage in role plays of a service guide/host. Learners were encouraged to role play and service market guides by asking and answering questions about the purpose of objects as they introduced service locations (cafes, markets, gaming hubs, and education services) to customers. This enabled them to perform the role of a local guide or cultural mediator. The study illustrates a design for the incorporation of performance assessment, and generative artificial intelligence in the EFL Thai secondary curriculum. It further illustrates the potential of similar projects to enhance linguistic proficiency, digital literacy, and tourism communication in Bangkok and similar cities.

Recommendations

In this Bangkok demonstration school, Thematic English or speaking focused courses for Grades 10–12 may structure the 360 Narrative Director workflow as a project cycle, with phases for AI assisted scripting, hotspot creation, Panoee integration, rehearsal, and simulated tourist Q&A. On-site teachers are encouraged to add structured mini lessons on oral fluency (e.g., chunking, discourse markers) and narrative structure, and guided editing of Gemini outputs, so that students learn to simplify and adapt the language to their own, rather than just copy it. From a school-wide perspective, the demonstration school may formalize the integration of AI supported 360 projects under its innovation mandate, establishing them within curriculum and assessment frameworks for speaking, narrative competence, digital literacy, and English for service language.

Certain suggestions are closely associated with the Bangkok demonstration context, especially the emphasis on tourism oriented themes (e.g., floating markets, Insta worthy cafes) and the expectation that students showcase exemplary EFL performance to other institutions. These context tailored specifications indicate a preference for localised tourism. public curricular integration of tours (e.g., school open days, partner school exchange visits), and collaboration with adjacent universities or tourism stakeholders to improve the authenticity of the tasks. The demonstration school's adequate infrastructure and institutional support allow for more integration of more advanced generative AI and 360 tools, including dedicated lab time and technical support.

While resources may be more constrained, some of the design principles may be applicable in other Thai or ASEAN regional secondary school contexts. Using the design principle of students as narrative directors, schools can easily incorporate the use of basic 360 platforms or even 360 static images. They can even use locally relevant 360s of community and culturally significant areas (e.g., market districts, cultural heritage sites, school sites); and community culturally significant areas (e.g., markets, cultural sites, school sites). They can still complete the steps of AI drafting, teacher adaptations, multimodal construction, and performance with Q&A. Educational authorities and teacher networks in ASEAN plus Thailand may focus on developing guidance and sample activities for the alignment of AI-assisted 360 narrative projects with national curriculum, tourism English, responsible AI, and Thailand thematic pedagogy for culturally responsive teaching on technology and regional tourism.

Acknowledgment

The author wish to thank the Grade 10 students and teachers at the Bangkok demonstration school whose creativity, tenacity and openness to work with AI and 360° virtual tours helped make this project a reality . Thanks also to the school leaders and tech support for their encouragement, logistics, and the installation of tools and infrastructure for the 360 Narrative Director project during the 12-week intervention. The authors also thank the community of EFL, digital storytelling, and educational technology scholars and practitioners who provided the conceptual foundations for the design and analysis of this study with their work on immersive media, oral fluency, narrative complexity, and generative AI.

References

- Adedoyin, O. (2025). How Google's AI tools are transforming language learning. *AI Magazine*. <https://aimagazine.com/articles/how-googles-ai-tools-are-transforming-language-learningaimagazine>
- Adnan, A. H. M., Ahmad, M. K., Mohd Kamal, M. A., Mustafa Kamal, N. N., Yusof, A. M., & Azamri, N. M. (2019). *Virtual reality immersion for "Education 4.0" English education: ELSA 360°-Videos Project – Phase 2*. MNNF Publisher. https://www.academia.edu/41466404/Virtual_Reality_Immersion_for_Education_4_0_English_Education_ELSA_360_Videos_Project_Phase_2academia
- Al-Obaydi, L. H., & Alghizzi, T. R. (2024). Digital storytelling's impact on ESL learners' speaking skills (2019–2023): A systematic review. *International Journal of Learning, Teaching and Educational Research*, 23(1), 1–19. https://hrmars.com/papers_submitted/19903/digital-storytellings-impact-on-esl-learners-speaking-skills-2019-2023-a-systematic-review.pdfhrmars

- Azizah, R., Irdiyansyah, I., & Wahyuni, A. (2024). Empowering EFL students' speaking ability through digital storytelling: A quasi experimental study. *ASSHIKA: Jurnal Pendidikan Bahasa dan Sastra Arab*, 5(1), 45–60. <https://jurnal.saniya.id/asshika/article/view/394jurnal.saniya+1>
- Blyth, C. (2024, March 18). Using AI image generators in world language classes. *Edutopia*. <https://www.edutopia.org/article/using-ai-image-generators-world-language-classes/edutopia>
- Chen, H.-J. H., Smith, B., & Yang, J. C. (2021). Exploring the impact of learning activities supported by 360-degree video technology on language learning, intercultural communicative competence development, and knowledge sharing. *Frontiers in Psychology*, 12, 766924. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8663917/pmc.ncbi.nlm.nih>
- Fauziah, S. (2025). Empowering EFL students' speaking ability through digital storytelling: A quasi experimental study. *ASSHIKA: Jurnal Pendidikan Bahasa dan Sastra Arab*, 5(1), 45–60. <https://jurnal.saniya.id/asshika/article/download/394/309jurnal.saniya+1>
- Google Cloud. (2026). *Generate and edit images with Gemini*. Google Cloud documentation. <https://docs.cloud.google.com/vertex-ai/generative-ai/docs/multimodal/image-generationcloud.google>
- Google for Education. (2018). *Advancing education using Google AI*. <https://edu.google.com/ai/education/edu.google>
- Kitchakarn, O. (2016). How students perceive social media as a learning tool in enhancing their language learning performance. *Turkish Online Journal of Distance Education*, 17(4), 72–88. <https://dergipark.org.tr/en/pub/tojde/issue/50003/573314index.j-ets>
- Rahmawati, D., & Sari, D. (2023). The use of digital storytelling to improve students' speaking ability in secondary EFL classroom. *JELITA: Journal of English Language Teaching and Literature*, 4(2), 195–210. <http://www.jurnal.umbarru.ac.id/index.php/jelita/article/download/347/165jurnal.umbarru>
- Saylan, E. (2022). Digital storytelling in an online EFL course: Impacts on speaking skills and vocabulary achievement. *Journal of Language and Linguistic Studies*, 18(3), 1195–1214. <https://files.eric.ed.gov/fulltext/EJ1355972.pdferic.ed>
- Shadiev, R., Yu, J., & Sintawati, W. (2021). Exploring the impact of learning activities supported by 360-degree video technology on language learning, intercultural communicative competence development, and knowledge sharing. *Frontiers in Psychology*, 12, 766924. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8663917/pmc.ncbi.nlm.nih>
- Voicebot. (2023, October 24). Google Search rolls out AI-powered speaking practice for language learners. <https://voicebot.ai/2023/10/24/google-search-rolls-out-ai-powered-speaking-practice-for-language-learners/voicebot>