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Pedagogical Implications of AI-Enhanced Digital Storytelling in EFL Education

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Abstract

Educational practices have often incorporated the sequential and structural parameters of digital storytelling into task-based methodologies to develop students' language proficiency through interactive activities based on virtual narratives. The advent of Artificial Intelligence (AI) sparked a new era of creativity and innovation, opening up new possibilities for teaching English as a Foreign Language (EFL) to postgraduate students. This study examines the integration of AI-based digital storytelling into language learning practices, specifically focusing on how AI can provide methodological guidelines to inform and prepare educators. Data were collected from 20 EFL students enrolled in a semester-long AI-assisted digital storytelling course at the University of Verona. The adopted methodology covers the three aspects of writing, image generation, and audio creation. The students created cultural tours on the platform izi.TRAVEL adhering to digital place-based storytelling principles. Data was gathered as students personalised story content within a task-based framework using the AI tools ChatGPT, Craiyon, Fotor, character.ai, Adobe Firefly, and Speechify. Qualitative observations of students' activities and perceptual information on the methodological efficacy of AI-integrated digital storytelling practices are outlined to assess their impact on students' creativity in EFL production. The study also showcases students' digital stories and their iterative processes of generating AI content, images, and videos, with both individual and cooperative supervision. Results describe the methodological effects on student self-expression and experimentation through platforms of AI-assisted narration and address future implications for AI ethics and agency support in language education.

Keywords: Digital storytelling, AI, EFL, Task-based language learning, Educational technology

1. Introduction

Humans have long relied on language as the cornerstone of knowledge dissemination and acquisition, with storytelling as a powerful tool for this exchange. Throughout history, tools have been used to personalize and enhance narrative content, engaging in meaning-making activities shaped by ideas, cultural beliefs, and personal world representations (Robin, 2016; Yang et al., 2022). In an era where technological and social practices intersect, storytelling has emerged as a powerful educational tool, empowering students to contextualize language use by creating virtual narratives. These digital storytelling activities foster conversations on social and cultural themes while simultaneously acting as instruments for preserving the nuanced cultural heritage of diverse communities. By engaging in this creative story process, learners enhance their linguistic skills and develop a deeper understanding of cultural diversity, fostering cross-cultural dialogue and appreciation in an increasingly interconnected world. This innovative approach strengthens learners' agency and cultivates their ability to apply linguistic skills to meaningful, multimodal products that reflect real-world communication contexts. This has held in the context of learning English as a Foreign Language (EFL), as the widespread adoption of Artificial Intelligence (AI) has brought transformations promising to redefine how we approach linguistic proficiency and cultural understanding. By drawing on the task-based methodology of Ellis (2003), this paper describes AI-based digital storytelling activities that may encourage EFL learners to explore, create, and strategize their narratives. The study involved 20 EFL students in a semester-long course at the University of Verona to analyze the use of AI tools across three aspects of digital storytelling: writing, image generation, and audio creation. Students crafted virtual tours on the platform izi.TRAVEL, adhering to digital place-based storytelling principles. To personalize story content within a task-based framework, they designed their narratives in English with various AI tools, including ChatGPT, Craiyon, Fotor, character.ai, Adobe Firefly, SkyboxAI, ElevenLabs and Speechify. This study aimed to answer the following research question: how do AI-based digital storytelling practices impact students' creativity and EFL production? It is hypothesized that task-based AI-integrated digital storytelling has a positive impact on language skills by engaging students in iterative processes of cooperative content creation, including story development, images, and videos. Critical considerations include ethical concerns such as agency support and accountability of the creative process assisted by AI. These insights stem from a qualitative assessment of students' language practices and perceptions of the methodological efficacy of AI-integrated digital storytelling. The study addresses a significant gap in the literature by examining AI-assisted digital storytelling for EFL learners, providing valuable insights and practical guidelines for educators seeking to integrate AI-enhanced storytelling into EFL contexts. These results are rooted in a comprehensive literature review that provides a solid theoretical framework for understanding and implementing AI in educational settings. The proposed review addresses the following key areas:

- EFL skills developed through AI assistance

- methodological foundations underpinning AI integration in EFL education
- understanding AI ethics in interactive classroom activities
- digital storytelling platforms integrated with AI assistance in EFL contexts

2. Background

Research in AI-based EFL is experiencing a significant surge in interest, primarily in the educational aspects of written composition and spoken discourse. However, as AI technologies evolve, they are increasingly incorporated into activities that foster students' EFL skills through hands-on practice with digital tools and the trans-codification of information (Marzuki et al., 2024; Alshumaimeri & Alshememry, 2024; Du & Daniel, 2024). These practices, however, are riddled with challenges. One of the most significant challenges in promoting digital literacy is enhancing students' critical thinking skills through the use of AI (Nguyen et al., 2024). This process is crucial for identifying potential biases in AI output and crafting engaging digital stories that combine multiple forms of engagement, such as open-ended questions, quizzes, and links to external content. Most importantly, critical thinking is deeply intertwined with cooperative learning and language development, as it is essential for teamwork and problem-solving, and for accomplishing tasks that require the integrated use of listening, reading, speaking, and writing skills (Golkova & Hubakova, 2018). Moreover, critical thinking is essential for enhancing AI-assisted EFL competencies, as it involves questioning norms, analyzing context, and evaluating information (Saleh, 2019; Darwin et al., 2024). When analyzed from a group learning perspective, implementing critical thinking in EFL learning facilitates student cooperation in task completion (Rajaram, 2021; Zou et al., 2023). According to Paul and Elder (2019), critical thinking helps formulate vital questions, gather information to support stances, come to conclusions by thinking open-mindedly, and effectively communicate with others to identify solutions. Critical thinking, cooperation, communication, and creativity are essential 21st-century skills that prepare students to interact in an increasingly digital social and professional landscape. When these considerations are applied to AI-assisted digital storytelling, EFL students utilize these skills to tailor story content to their intended readers (Pardede, 2020). They assess the rhetorical context where their stories are used and build the personas of a potential target audience based on their knowledge and reading purposes (Bean & Weimer, 2011). The deployment of EFL skills is, therefore, targeted at purposefully communicating procedural strategies to attain task goals, express intentions and provide opinions on selected story contents. By creating stories cooperatively, learners strengthen their linguistic skills and foster their motivation to pursue the storytelling activity in the target language (Akdamar & Sütçü, 2021; Hava, 2021). Through such communication strategies, students construct language through cooperative feedback provision and working on shared documents. The methodological approach heavily influences this process, as it should enable students to contextualize their EFL skills through cooperative digital storytelling while integrating AI assistance. Therefore, the next section outlines the theoretical foundations of technology-integrated teaching methods that foster cooperative EFL environments while maximizing the learning benefits of digital storytelling and AI.

2.1 Methodological Approaches to AI-integrated EFL

Applying the best methodology to foster cooperative story crafting while promoting contextualized EFL use is critical to promote the effective use of AI-integrated digital storytelling. Evidence from the literature suggests that task-based methodology efficiently supports the development of cooperative language skills among EFL students (Ellis, 2003; Yamada, 2020). This methodological framework foresees that students are involved in subsequent phases; first, they brainstorm lesson contents and conduct cooperative tasks using language as a creative communication tool. Subsequently, they present the results of their cooperative work and analyze language forms for further practice. In addition to working on assigned projects cooperatively, students are encouraged to support their arguments, counterargue when needed on proposed topics, pose questions, and articulate solutions to the challenges they identified while crafting their projects (Bhandari, 2020). Within such a framework, it is important to consider the role of teachers in facilitating the development of cooperative skills between students through task design facilitation. Scholars have also highlighted the role of teachers in encouraging problem-solving activities based on reaching a consensus on the best solution suiting their needs. Teachers are, in fact, facilitators of group activities, providing suggestions on polishing the language and adapting it to the genres examined in the stories. However, with the advent of AI in educational practices, educators must redefine their position as learning facilitators (Mohamed, 2024). If storytelling is integrated into task-based practices, teachers should provide students with guidelines for leveraging AI in crafting digital stories while maintaining their narrative voices. This might foster positive attitudes towards AI classroom integration among teachers and students, as they feel facilitated in learning and creative processes (Belda-Medina & Goddard, 2024). However, implementing AI in task-based learning also brings ethical considerations to the forefront, prompting a critical analysis of the guiding principles that should shape AI-informed practices in EFL learning.

2.2 Navigating AI Ethics in EFL Classrooms

From a literacy perspective, using AI in language education sparks discussions on its ethical implications in maintaining agency and authorship as a student's prerogative. In this way, the AI agent is perceived as a learning assistant rather than a substitute for language production (Aghaee, Vrågård & Brorsson, 2024). For implementing AI in language education, it is helpful to consider the principles elaborated by the Organization for Economic Co-operation and Development (OECD) in 2024. Specifically, attention is bestowed on ethical literacy practices that foster user safety and accountability (OECD, 2024). However, applying such principles in language education is challenged by their potential implications from both pedagogical and behavioral perspectives. Hence, there is a need to explore the pedagogical implications of these principles in classroom contexts, with particular attention to group work dynamics with AI tool usage. In particular, the literature still requires further investigations on the ethical use of AI platforms in language education regarding the production of biased language referring to socio-cultural values and communities, which may affect students' perceptions of different ways of life and reinforce dominant cultural norms (Kasneci et al., 2023; Vaccino-Salvadore, 2023). These are particularly relevant when using AI to produce digital stories as elements and

pictures of cultural significance enrich the narration. However, evidence on ethical perspectives related to the use of AI in generating information for EFL written and spoken discourse is missing. There is also a lack of evidence of the specific AI tools that might foster an ethical use of AI in EFL storytelling production. In the next section, an outline of the potential tools that students can use to assist their digital story crafting will be provided to introduce the foreground of the EFL activities in which the students were involved.

2.3 Platforms and AI Tools for Interactive Storytelling in Language Education

The platform izi.TRAVEL was used as the primary support for story creation. It is a freely accessible application downloadable on mobile phones, featuring localization capabilities that enable users to follow tours of world cities and museums. Using the platform's PC content management system, users create interactive tours combining texts, interactive quizzes, video and audio recordings. Customizable features are accessible via picture insertion, text editing, and audio upload, paired with the ability to embed online content via hyperlinks (Spaliviero, 2022; Fazzi, 2022; Compagnoni & Serragiotto, 2024). These may include AI features, which are not integrated into the platform for design purposes. Once published, the tours become accessible on the mobile app izi.TRAVEL and geolocated. The platform assigns QR codes to each tour, facilitating mobile-based content retrieval and route traceability. The collaborative platform Figma is a working space that synthesizes and visualizes ideas through infographics. Work boards can be shared and synchronously edited by multiple team members, centralizing planning data and allowing for procedural organization. The Canva platform was also integrated into the story design to enhance the personalization of participants' stories. Canva is a graphic design platform enabling the visual content creation of social media graphics, posters, presentations and logos (Hernández-Maza & Enciso, 2023). As for AI, the participants sourced written and audio content primarily from ChatGPT, Speechify and ElevenLabs. ChatGPT is an AI-powered chatbot that generates human-like written and audio responses based on user input. Speechify and ElevenLabs also convert text into downloadable spoken audio with a list of voices (Mondello et al., 2024; Normuminov, 2024). A similar text-to-speech application designed to foster presentation skills is Yoodli, which analyzes real-time speech and provides feedback on filler words, pacing, tone, and body language to help practitioners improve their public speaking (Jeon et al., 2023). The other applications used by the participants in this study to generate AI content included character.ai, Adobe Firefly, Craiyon, and Fotor. Character.ai is a database of AI-powered chatbots that allows users to select a conversational AI partner to respond according to specific characters (Stornaiuolo et al., 2024). Adobe Firefly is a standalone application that improves workflow using generative AI, while Craiyon and Fotor permit the generation of pictures following prompt provision (Bañez, 2024; Combs et al., 2024; Lambert, Matthews, & Jaddoa, 2024). However, while the images generated by a free subscription to Craiyon might provide low levels of realism and lesser correspondence to the original prompts due to its free features, the paid subscription plan of Fotor enables fine-tuned realizations of the desired pictures, with additional customizable features of texture and background design. Another tool used in this study was SkyboxAI, which enables users to input text prompts that incorporate elements specifying the desired outcome, generating modifiable 360 °landscapes (Teixeira, Peres, & Mauricio, 2024).

2.4 Summary of Literature Gaps

While existing research has explored various aspects of AI integration in EFL education, several significant gaps remain unaddressed. Current literature predominantly focuses on the educational aspects of written composition and spoken discourse (Marzuki et al., 2024; Alshumaimeri & Alshememry, 2024; Du & Daniel, 2024), but lacks comprehensive investigation into how AI-powered digital storytelling specifically fosters cooperative language acquisition through multimodal narrative creation. Although scholars acknowledge the importance of critical thinking in AI-assisted language learning (Nguyen et al., 2024; Darwin et al., 2024), there is limited empirical evidence on how students navigate ethical considerations while maintaining authorial agency when co-creating with AI tools. Moreover, while task-based methodologies have proven effective for cooperative language development (Ellis, 2003; Yamada, 2020), research has insufficiently examined teachers' evolving roles as facilitators in AI-integrated storytelling environments (Mohamed, 2024). This study addresses these gaps by investigating how EFL learners utilize AI platforms such as ChatGPT, Speechify and ElevenLabs in conjunction with cooperative digital tools (izi.TRAVEL, Figma, Canva) to craft digital narratives that enhance their language proficiency. In particular, it examines how AI-powered digital storytelling creates opportunities for authentic language use through cooperative problem-solving, enhances student motivation via multimodal expression, and develops critical AI literacy skills essential for 21st-century communication. By focusing on pedagogical frameworks that effectively balance AI assistance with student agency in narrative creation, this research provides valuable insights into designing task-based activities that maximize language learning outcomes while fostering ethical engagement with AI tools. The integration of ethical AI usage, cooperative learning dynamics, and multimodal storytelling within these task-based frameworks offers a comprehensive model for EFL instruction that not only optimizes language acquisition but also prepares students for responsible digital citizenship in increasingly AI-mediated professional and social contexts. Through empirical investigation of these integrated approaches, this study aims to establish evidence-based guidelines for educators seeking to harness the potential of AI-powered digital storytelling while maintaining pedagogical integrity and student-centered learning principles.

3. Methodology

3.1 The Participants and Teaching Context

The participants comprised 20 EFL students, aged between 22 and 25 years old, attending a Master's course in Languages, Literatures and Digital Cultures at the University of Verona. Regarding their linguistic background, the majority were native Italian speakers, except 4 individuals, of whom 1 spoke Arabic and 3 spoke Russian as their mother tongue. They all possessed advanced English proficiency corresponding to a C1 level, which was a prerequisite for attending the course. They all attended the course “Digital Storytelling” at the University of Verona, taught by the principal investigator and during which the data collection took place. Participants were informed that the lessons also served as instances of data collection, and they voluntarily agreed to participate by submitting signed consent forms.

3.2 Use of AI Tools

The participants used Figma to facilitate concept formulation and the visual planning of digital stories, turning tool boards into an interactive workspace where they could seamlessly arrange ideas, share external web resources, and integrate elements crucial to the story creation process. Moreover, Figma functioned as a repository for the group's evolving prompt models, documenting the iterative refinement that ultimately led to the generation of AI-written content and images to integrate into the digital stories. However, shared documents on Google Docs were preferred for longer texts, which were later transferred to the izi.TRAVEL stories. Conversely, ChatGPT was utilized to brainstorm ideas on tour itineraries, source information on specific destinations, and refine text previously written without AI assistance. To narrate the story contents, the participants recorded their voices while reading selected texts using their personal computers' recorders. Alternatively, they could use an AI agent of their choice, such as those on Speechify or ElevenLabs, which would narrate a handful of the remaining texts. Students subsequently edited them, especially when adjusting the pronunciation of Italian toponyms to their closest English equivalent, and uploaded them as MP3 audio files to izi.TRAVEL. As of character.ai, participants embedded links to chatbot conversations with historical characters mentioned in the stories they created. The picture generation process with Craiyon and Fotor was conducted in groups. Participants cooperatively crafted the prompts for picture generation, shared them on Figma, and discussed the pictures they obtained after multiple iterations. Participants using Fotor created multiple accounts to maximize the output obtained from the platform. The pictures sourced from Craiyon and Fotor, were shared on Figma and selected based on their correspondence to the elements they represented in the stories.

3.3 Activity Structure

The data was collected during a three-month compulsory digital storytelling laboratory, part of the participants' master's course. The laboratory comprised 36 hours of attendance, with each class lasting 4 hours. It was designed to include hands-on activities integrated into compulsory modules on digital storytelling principles, creative writing, and AI prompt generation. A consistent part of the data collection process involved classroom observations of students' group interactions while crafting stories on izi.TRAVEL with AI tools. The activities proceeded according to a task-based methodology, comprising a task phase linked to planning the story and visual content through group discussions, followed by refinement of the planned content ahead of the story's online publication. Table 1 provides a comprehensive outline of the activities.

Table 1. List of activities performed during the digital course storytelling

Class	Content	Tools
1	Digital storytelling principles and initial brainstorming, accompanied by a Figma tutorial. Role assignment based on personal attitudes. Analysis of the language forms for the story incipit.	Figma, izi.TRAVEL
2	Capturing the audience's attention through language use and story structure. Logo creation on Canva. Exposure to izi,Travel through tour attendance.	Canva, izi.TRAVEL
3	Introduction to Generative AI and effective prompting. Brainstorming techniques with ChatGPT. Brainstorming trial ideas and generating written story content.	ChatGPT
4	The use of GenAI for image generation and prompting techniques. Generation of images related to the story content.	Fotor, Craiyon, Adobe Firefly, SkyboxAI
5	Voice and presentation training. Experiential task of text-to-speech generation and selection of tour destinations to be narrated by an AI assistant.	Speechify, ElevenLabs
6	Introduction to izi.TRAVEL CMS and story editing via the transfer of digital materials shared in Drive folders and Figma.	Figma, izi.TRAVEL
7	Refinement of digital stories and introduction to the platform Yoodli as an AI voice assistant.	Yoodli
8	Reharsal of group presentations and final revision of izi.TRAVEL tours, with subsequent publishing.	izi.TRAVEL
9	Written assessment and group presentations of the digital stories on izi.TRAVEL, accompanied by explanations of the design process and the incorporation of AI into story crafting.	izi.TRAVEL

To ensure the successful pedagogical impact of the storytelling activities, an iterative learning framework was applied to digital storytelling activities for EFL students, comprising six interconnected stages: design brief, research, ideation, construction, argumentation, and reflection (Figure 1).

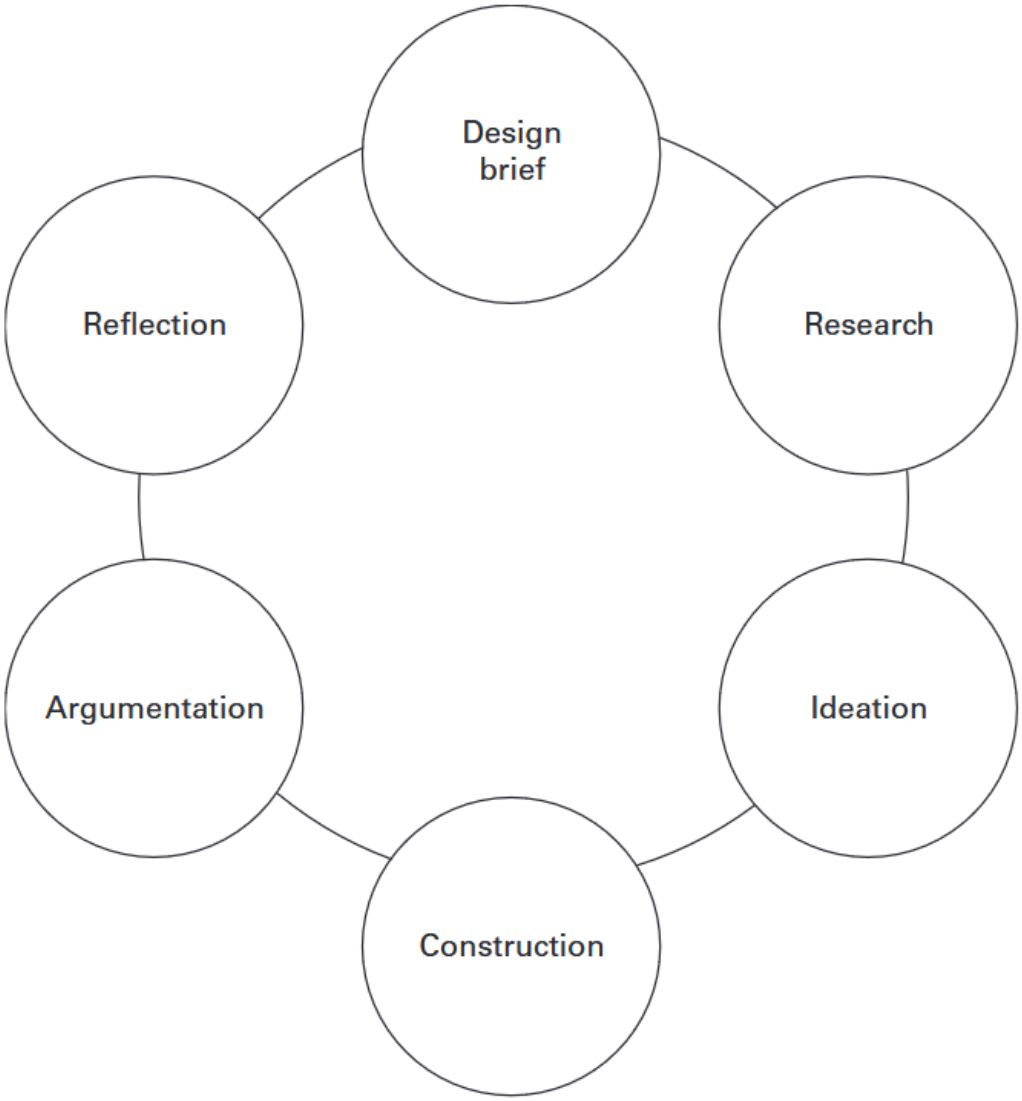

Figure 1. Model for engaging participants in technology reflections (Dindler et al., 2020, p.125)

Students began with a clear design brief, establishing their goal of creating digital stories by brainstorming the main tour destinations and searching online resources in English. This research phase naturally flowed into story ideation, where they sketched Figma storyboards and drafted scripts, receiving feedback on their narrative structure and vocabulary usage from their peers and AI agents. The construction phase involved students assembling their digital stories using simple editing software, recording voiceovers, and selecting suitable images. When technical challenges arose, they returned to the ideation stage to modify their AI-integrated approaches. As part of the argumentation, students presented draft versions to their classmates, fact-checked them using online resources and AI tools, justifying their creative choices and language use while incorporating feedback to enhance clarity for their audience. Finally, during the reflection phase, students evaluated their story development, identifying areas for improvement, before considering how these insights would inform the applications of their skills to their future professions.

3.4 Interactive Techniques in Digital Storytelling Activities

After returning the signed data collection forms, participants completed a pre-course questionnaire to gather overall information on their technology skills and familiarity with AI platform usage (see Section 4). Each group created email accounts, and credentials were shared among members and used to create profiles on AI platforms and izi.TRAVEL. Participants utilized the free subscription of the applications, which limited the range of customizable features available with each app use, but ensured their free usage was functional for activity purposes. One key element of the story-crafting process involved students conducting peer reviews of the drafts of the texts they later published in their stories, allowing them to proceed toward the editing process collectively. This permitted the students to exchange information on writing in an iterative feedback provision, facilitating content discussion.

This cooperative learning process contributes to fostering meaning-making and crafting the story editing process as a collective endeavor. Meaning-making was deemed to be most effective in encouraging students to "bring their own critical thinking to bear on problems that matter to both the writer and the intended audience" (Bean & Weimer, 2011, p.97). Each lesson combined the rhetorical dimension of story planning and assignment with the creative aspect of sourcing and connecting information to develop a coherent and purposeful story. The RAFT (Role, Audience, Format, Task) approach, as proposed by Buehl (2001), was employed to refine the rhetorical dimension of story planning. Students were encouraged to reflect on the role or purpose of a particular activity, the audience for the story, the format and genre, as well as the specifics of the tasks they needed to accomplish. They supported their cooperative endeavor in story creation by using Figma as a storyboard tool, which enabled them to share ideas, incorporate relevant AI feedback for story crafting, and place visual content alongside the corresponding text (Figure 2). In other words, with the aid of AI in the brainstorming process for story creation, students engaged in meaning-making activities, discussing ideas and personal experiences related to the story content. Visual creations included crafting story characters using Fotor, character.ai, and Adobe Firefly, with examples provided in Figure 3. The assignment was grounded in presenting the task as an inventive problem-solving approach (acronymized by Sushkov et al. in 1995 as TIPS) upon publishing stories on izi.TRAVEL (Figure 4), through which the participants showcased their projects to the rest of the classroom, outlining how specific AI tools were used to craft their digital stories.

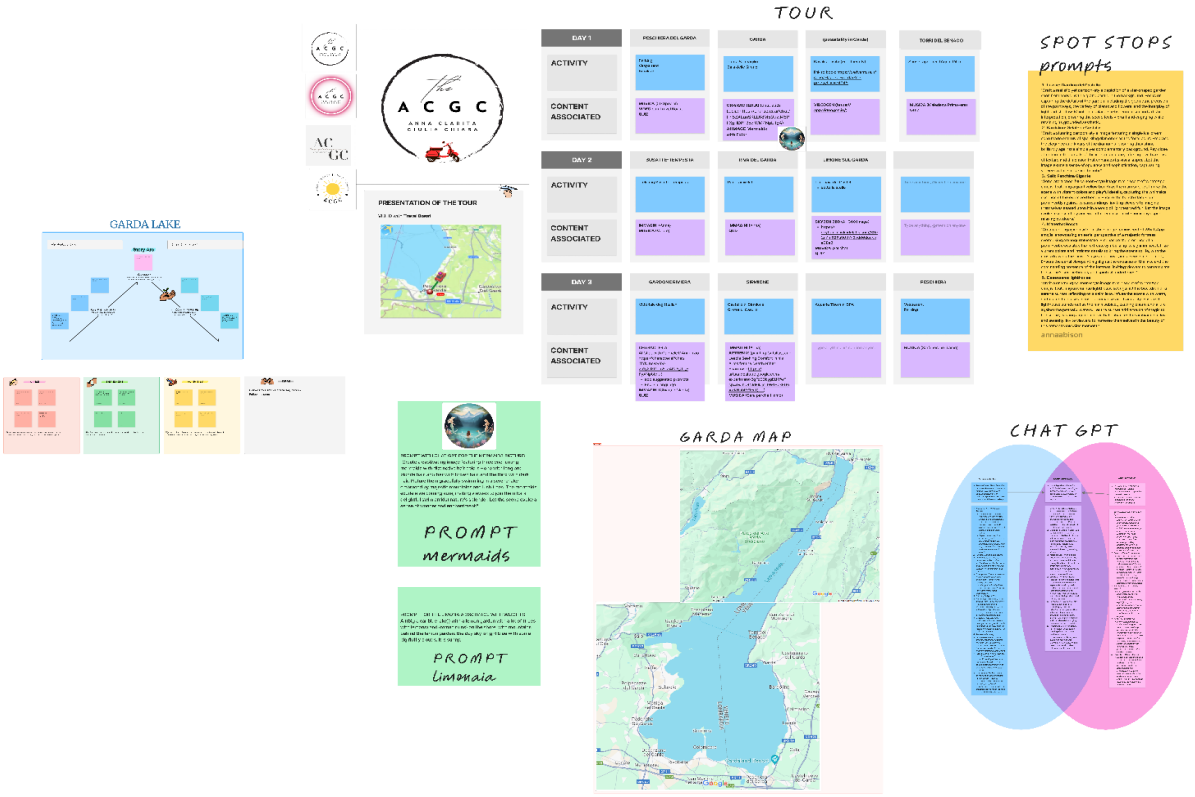

Figure 2. Figma storyboard with images and AI prompts for tour conceptualization

Figure 3. Story characters created by the participants with AI assistance

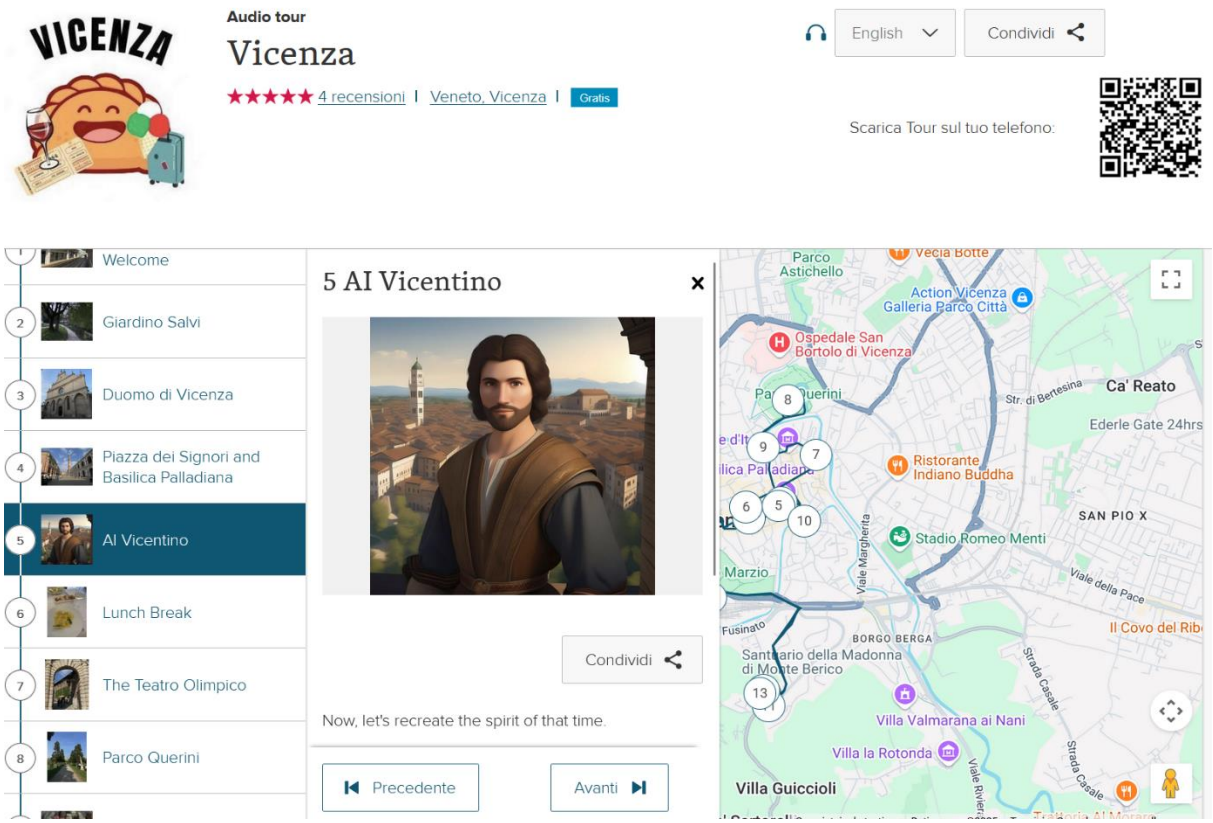

Figure 4. Digital story created by one group of participants on izi.TRAVEL

4. Analysis

The mixed-methods approach, developed by Dörnyei (2007), was employed to collect both qualitative and quantitative data. Quantitative information included the content of participants' conversations with the software Descript and classroom notes taken by the principal investigator.

4.1 Quantitative Data

Quantitative data were collected through 5-point Likert scale questions ranging from 1 to 5. The parameters ranged from "no proficiency" (1) to "expert user" (6) or from "strongly disagree" (SD) to "strongly agree" (SA). As shown in Figure 5, participants rated their computer and mobile phone performance highly, indicating strong digital literacy.

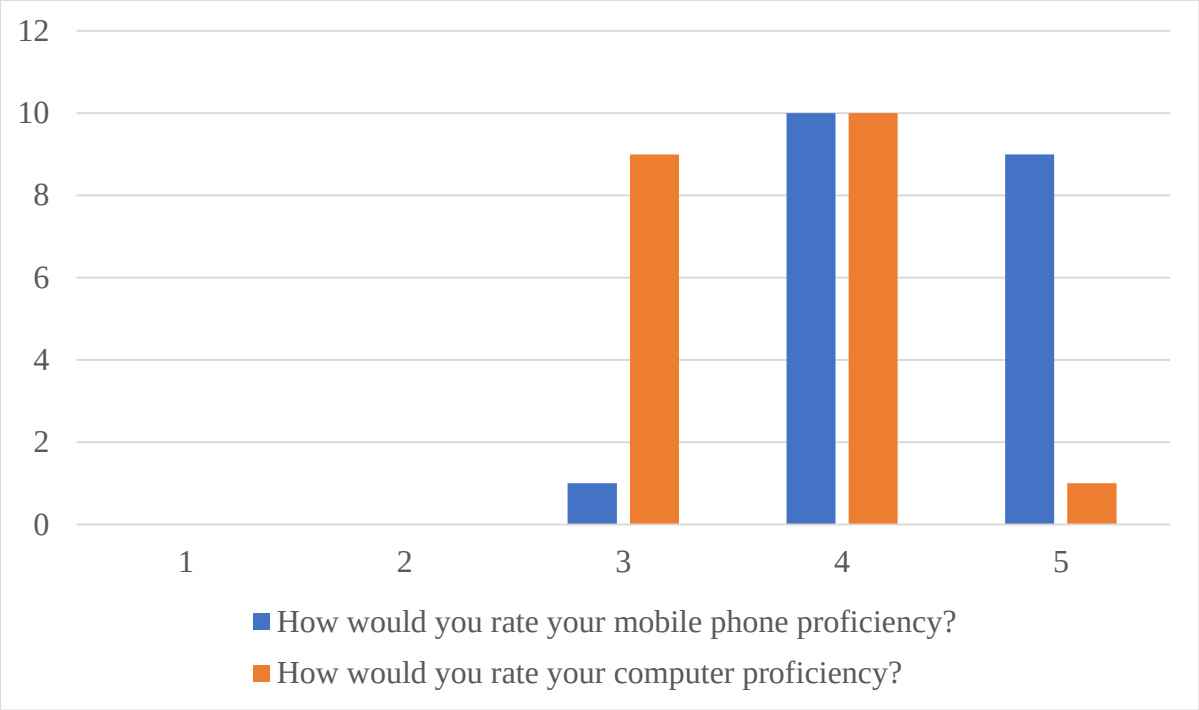

Figure 5. Participants' perceived proficiency in mobile phone and PC use

Further qualitative questions pertained to the perceived usefulness of the AI platforms. When answering two open-ended questions, they confirmed that cooperating with their group members enhanced their understanding of AI through digital storytelling activities. As shown in Figure 6, participants also expressed positive feedback regarding the crucial role of group cooperation in sourcing information, writing story content, creating images and audio files, and rehearsing their story presentations. Additional insights were gathered on students' positive attitudes toward AI for language and storytelling development. Participants recognized AI's value, with strong agreement particularly evident in two areas: first, that digital storytelling skills improved through the use of AI, and second, that AI made digital storytelling more convenient. Regarding language skills development, students consistently viewed AI as beneficial, with positive views being expressed for the development of writing, reading and speaking skills. Listening skills followed the same pattern, with 16 students agreeing that AI was helpful (Figure 7).

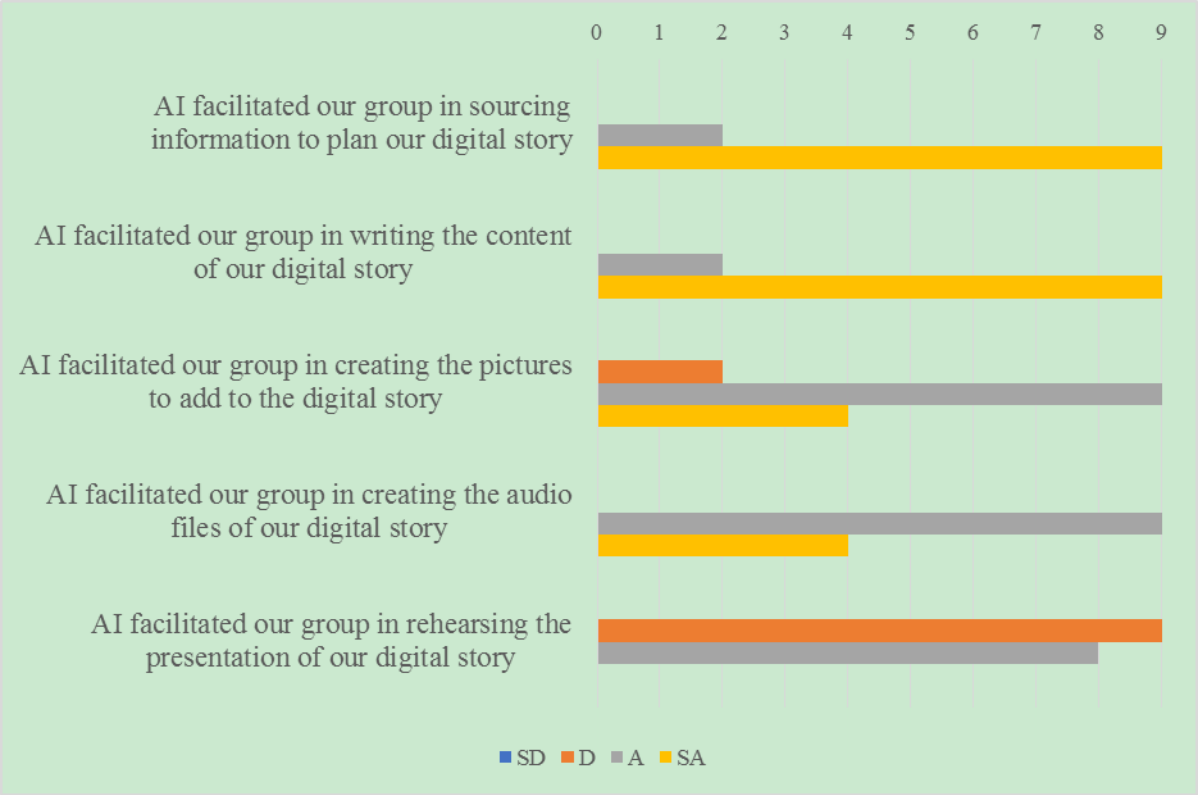

Figure 6. Perceived AI group facilitation through digital storytelling production

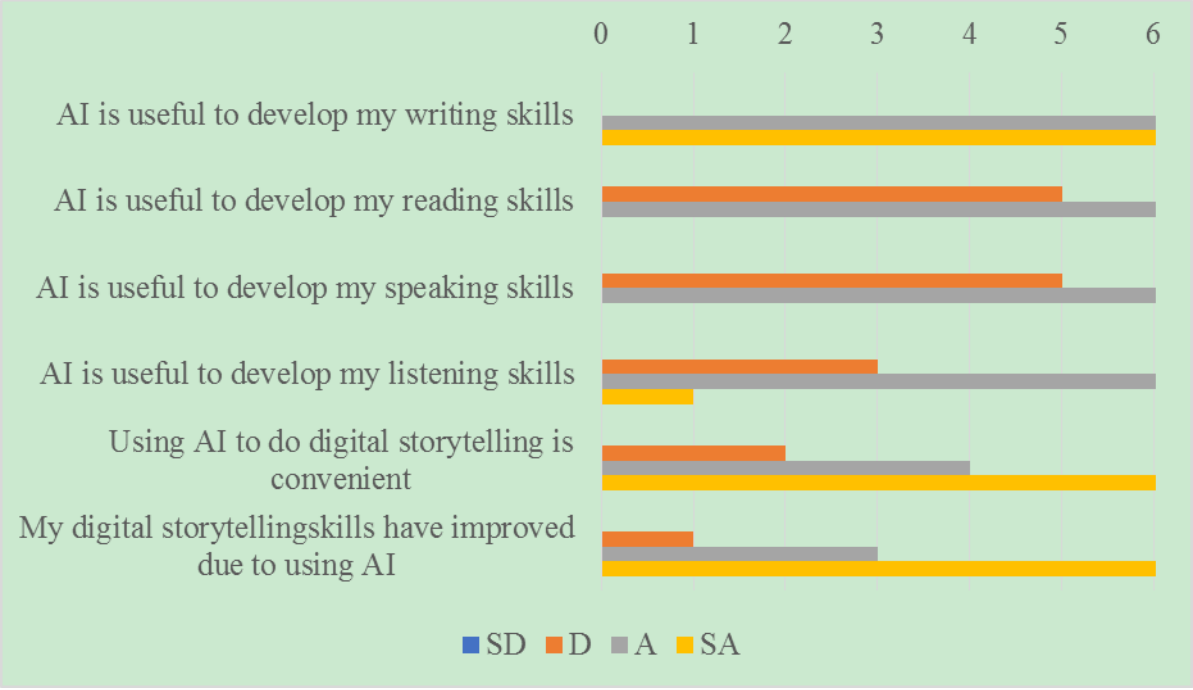

Figure 7. Perceived AI usefulness for EFL skill development

Further data reveal that students overwhelmingly disagreed with concerns about AI's negative impact on the storytelling process, specifically hindrance to group interactions, creativity, and

maintaining a personal voice when crafting and presenting story content.

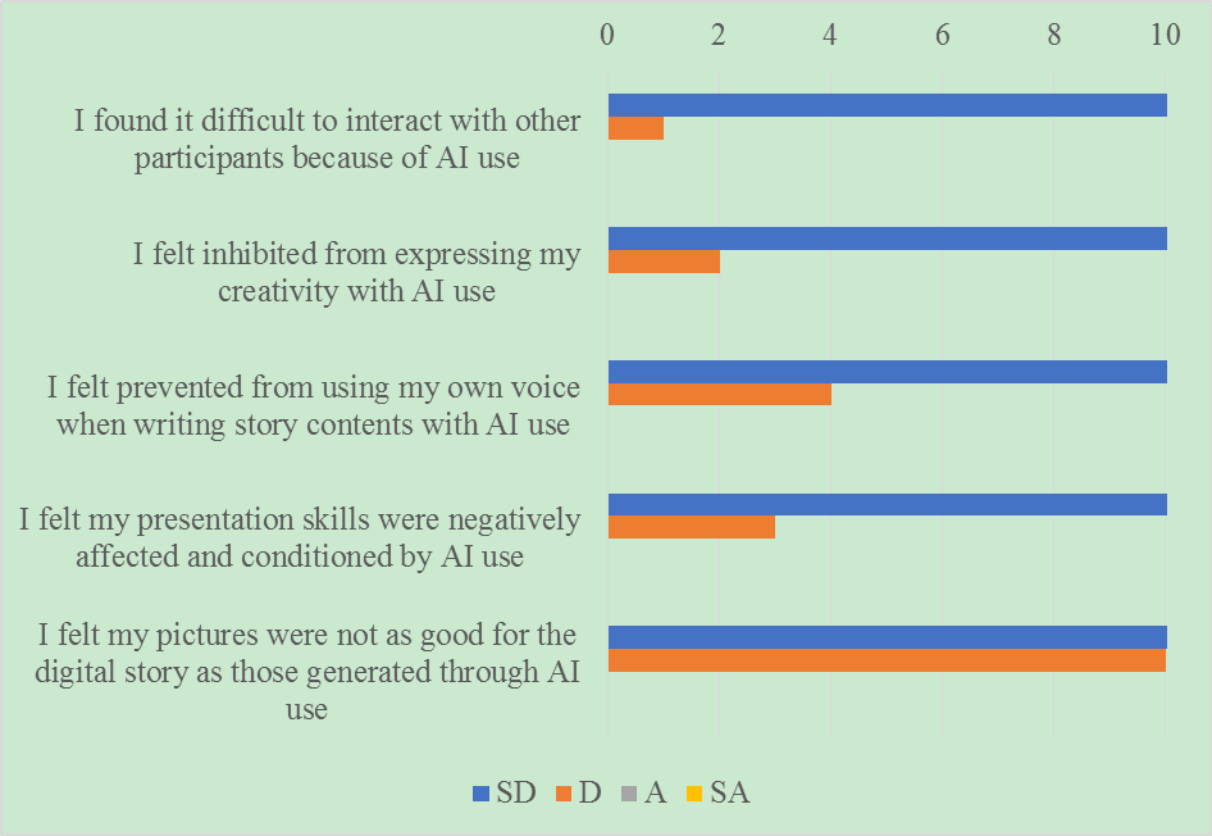

Figure 8. Disagreements with the negative impact of AI on story production

4.2 Qualitative Data

Qualitative questions revealed that students primarily used ChatGPT and Gemini for summarizing content, enhancing writing, creating learning materials, and translating sentences between their native language and English. From the participants' feedback and qualitative questions, it was possible to understand the importance they placed on understanding AI's limitations to use it with transparency and efficiency. Excerpts from the participants' conversations were collected during class observations of group work, along with behavioral observations reported in the discussion section. They include student comments and final presentations of digital stories.

- Excerpt A: We must carefully consider how AI interprets words, as the feedback it provides makes us more aware of potential ambiguities when conveying cultural information through language.
- Excerpt B: I realize the importance of verifying information. Sometimes ChatGPT provides details about locations that are not quite right, and I know the information is wrong because I have visited those places. I can testify against the AI!
- Excerpt C: I learned to identify when AI was producing generic content versus specific, accurate information. There are always the same linguistic structures that are repeated, and the information looks good, but when you read more carefully, it is very generic.

- Excerpt D: [commenting on the use of Fotor to generate one of the pictures displayed in Figure 3] The AI cannot get mermaids right. It just does not know what metaphors are and cannot go beyond reality. It cannot imagine things, and I cannot make it understand what I mean by crafting a mermaid. I know we need to be more specific to obtain realistic visuals that accurately represent what we want, but it is frustrating that, on this particular aspect, the AI and I cannot communicate.
- Excerpt E: Getting good results from AI isn't about trying, but crafting the prompt needed to communicate precisely what you want and understanding how the AI interprets your words. It takes effort and creativity, but it's worth it!
- Excerpt F: [commenting on the audio files generated with Speechify] the AI voice is still not realistic enough, so it is good for giving practical indications, but not for building closeness with the users and encouraging them to follow this tour. So we decided to record our voices instead for most destinations.

5. Discussion

The study reveals that creating digital stories with AI can open up new opportunities for enhancing the linguistic proficiency and creativity of EFL students, while also helping them develop essential 21st-century skills. The results are discussed regarding their impact on digital storytelling and EFL production, based on the findings from the analysis.

5.1 Impact on Language Skills Development

One key aspect of the impact on students' EFL production is that the cooperative nature of AI-assisted digital storytelling promotes multifaceted language development. Students engage with all four language skills, reading, writing, speaking, and listening, through various phases of the storytelling process. When using ChatGPT to brainstorm and refine storytelling content, students critically analyzed AI-generated texts, evaluating their relevance and appropriateness for their intended audience. This process of evaluation required sophisticated reading comprehension skills and metalinguistic awareness, which were enhanced through group work and a commitment to the shared goal of crafting stories.

AI-assisted language production was predominantly used for text generation purposes. The iterative writing process observed in the students' practices exemplifies how AI-assisted digital storytelling can enhance meaning-making practices in EFL contexts. This is confirmed by the literature of Bean and Weimer (2011, p.97), who conceptualized meaning-making as a process where students "bring their own critical thinking to bear on problems that matter to both the writer and the intended audience." The questionnaire data revealed that students perceived the cooperative dialogue surrounding AI outputs as particularly valuable, as they reported that the use of chatbots facilitated their groups in every aspect of digital story planning (Figure 6). Cooperative meaning-making also manifested in several observable practices, as documented during classroom observations and through Figma boards. Students engaged in negotiations of prompt design as they were planning the stories, collectively determining which elements to emphasize and which rhetorical strategies would best engage their intended audience. These discussions frequently centered on the alignment between textual narratives and visual components, reflecting a thorough understanding of multimodal meaning-making practices.

This was particularly evident when crafting tour content infused with cultural representations of the Italian lifestyle, often linked to stereotypical aspects such as riding a Vespa or eating pasta. This is well exemplified by Excerpt A, which also illustrates the metacognitive awareness described by Pardede (2020) as the ability to shape story contents according to the intended needs, editing potential ambiguities in the generated AI content. The shared Figma workspaces also revealed multiple iterations of prompts, with successive refinements demonstrating increasingly sophisticated awareness of how specific linguistic choices influenced AI outputs (Figure 2). This aligns with the RAFT framework of Buehl (2001), as students continuously referenced the rhetorical dimensions of their roles as content creators, the target audience, story format and task while evaluating AI-generated content.

The students' approach to overcoming AI pronunciation challenges with Italian place names also revealed cross-linguistic adaptation strategies. When faced with the AI's inability to pronounce Italian toponyms correctly, students engaged in deliberate orthographic manipulation, showing awareness of the structural differences between Italian and English phonological systems. They identified that Italian posed specific challenges for English-based AI speech synthesis. Their solution involved inserting vowels into the files produced by Speechify and ElevenLabs to enhance the naturalness of Italian words generated by the AI platform. Students essentially created an improvised transliteration system on the document uploaded on the platform, modifying written forms of Italian toponyms to guide the AI toward more authentic Italian phonological patterns while working within English orthographic conventions. This process required students to operate simultaneously across multiple linguistic domains, including phonology, orthography, and computational linguistics, as they predicted how the AI would interpret their modified script. Such problem-solving abilities demonstrate how AI integration can stimulate deeper metalinguistic reflection than traditional language exercises, as students made their knowledge of the Italian and English language systems explicit. This finding aligns with Golkova and Hubakova's (2018) assertion that complex problem-solving tasks can integrate multiple language skills while developing critical thinking.

The iterative refinement process of the content narratives also fostered a deeper engagement with genre conventions as students modified AI outputs to better align with the conventions of place-based storytelling on izi.TRAVEL. While doing so, they collectively negotiated the balance between informational content and engaging narrative elements. Classroom observations documented frequent references to online resources as comparative models, with students actively engaging in group conversations in English centered on analyzing structural and stylistic features before adapting AI-generated content to their production. As the feedback provided in Figure 8 suggests, rather than diminishing student agency, AI tools functioned as catalysts for deeper rhetorical analysis and cooperative meaning negotiation. These findings challenge concerns that AI might diminish authentic language production, suggesting instead that when appropriately integrated within a task-based framework, AI tools can enhance students' rhetorical awareness and genre competence while maintaining their ownership of the meaning-making process.

5.2 Development of Critical Thinking and Digital Literacy Through Cross-Platform Integration

Another element of the impact of AI in story production extends beyond EFL production as the process requires students to ensure conceptual coherence between the written narratives, visual elements, and audio components to produce content with coherent meaning. The integration of multiple AI platforms (text, image, and audio generation) into a digital narrative necessitated the critical ability to analyze how meaning is constructed across different representational modes, which are aspects that Paul and Elder (2019) ascribed to the ability to formulate questions, gather relevant information, evaluate evidence, and communicate effectively. This manifested in observable behaviors during classroom sessions, where students systematically questioned AI-generated content rather than accepting it uncritically (Excerpts A, B and C). For instance, when ChatGPT produced historical information about local landmarks, students verified this output against multiple sources before incorporating it into their narratives. This practice aligns with Nguyen et al.'s (2024) emphasis on developing evaluative frameworks for assessing the outputs of AI. The development of this critical stance was particularly evident in students' questionnaire responses regarding the limitations of AI. In Excerpt B, the student stated that he felt empowered by having knowledge that contradicts what the AI claims, affirming his position as a reliable human authority who can identify and correct AI mistakes. These reflections demonstrate a growing understanding that AI-generated content requires validation rather than mere acceptance.

The process of cooperative prompt engineering for AI image generation proved effective in developing what might be termed "visual critical literacy." The Figma boards and observations of class behaviors documented iterations of prompts for Craiyon and Fotor, revealing students' growing awareness of how specific linguistic choices influenced visual outputs. Initial prompts were typically simplistic (e.g., "provide an image of Piazza delle Erbe of Verona in Roman times"), but rapidly evolved toward sophisticated specifications that demonstrated awareness of potential biases and misrepresentations (e.g., "provide a representation of Piazza delle Erbe of Verona in Roman times with accurate architectural details, showing people in Roman clothing, with men wearing togas and women tunics"). Further classroom observations documented students engaging in complex discussions on the alignment between text and images, critically evaluating whether AI-generated visuals accurately represented the concepts described in their narratives. This prompted a critical examination of potential biases, leading students to develop more precise prompting strategies that included indications of the complexion, skin texture, and clothing of their characters. For more metaphorical representations, such as the mermaids in Figure 3, students reported challenges in crafting accurate indications. Hence, they resorted to requesting ChatGPT to create a prompt suitable for Fotor to generate representations of the mythical creatures. This stands as an example of AI tools that complement, rather than substitute, human creativity.

The use of AI also impacted the ethical deployment of this technology for storytelling purposes, with evidence of alignment between the students' behavior and Kasneci et al.'s (2023) view on recognizing and mitigating potential biases in AI-generated content when using chatbots for learning purposes. Classroom observations captured students' analyses of AI-generated images,

identifying instances where the AI reproduced stereotypical or historically inaccurate representations. One particularly noteworthy exchange focused on how AI-generated images of Italian historical sites featured idealized, tourist-oriented perspectives rather than authentic representations. In Excerpt C, the student recognizes AI's tendency to produce superficial content that lacks depth upon closer examination, demonstrating critical literacy in identifying patterns of AI-generated text. This demonstrates awareness of AI's replications of dominant visual narratives and the need for further iterations of written prompts to avoid misrepresentations and perpetuate biases. The necessity of ensuring coherence across modalities highlights what Vaccino-Salvadore (2023) identifies as critical awareness of how technologies can reinforce dominant cultural norms. Further examples include the student in Excerpt D, who expressed frustration with AI image generation in rendering abstract or metaphorical concepts, highlighting the communication barrier between human conceptual thinking and AI's literal interpretation capabilities. This is enhanced by Excerpt E, where the student recognizes that effective AI use requires strategic prompt engineering to emphasize that understanding the AI's interpretation system is key to achieving desired results. In other words, rather than simply accepting technological outputs, students developed the analytical tools to recognize, critique, and counteract potential biases.

This multimodal critical engagement extended to ethical considerations about representation and voice, as well as the careful balance between the two. When deciding which elements of their tours would be narrated by AI versus human voices, students engaged in thoughtful discussions about authenticity and appropriateness. While one group chose to use only AI-generated voices to discuss local cultural practices, two groups opted for a mix of their voice recordings with AI-generated audio files via Speechify, motivated by their concerns about the ethical implications of using synthetic voices to represent authentic cultural experiences. This is illustrated by Excerpt F, where the student identified limitations in AI-generated voice technology for creating emotional connections, demonstrating practical problem-solving by reverting to human recordings for better audience engagement. Such a decision-making process reflects an emerging ethical framework for AI integration that balances technological capabilities with considerations of authenticity and appropriate representation.

5.3 Cooperation and Agency in AI-integrated Learning

The task-based methodology of the lectures proved effective in maintaining student agency while incorporating AI assistance, aligning with the framework of Dindler et al. (2020) that emphasizes learners' ability to shape technological tools to serve their creative purposes. Importantly, data revealed that students maintained critical distance from AI outputs while benefiting from sharing and discussing creative ideas with other group members. The iterative feedback process between partners fostered continuous evaluation of AI-generated content against communicative goals. The cooperative peer review process was particularly effective at reinforcing this approach, as students often identified opportunities for refinement that they might have missed if working alone. The "safety net" effect created by collective idea sharing, fact-checks, and AI consultations fostered an environment of linguistic experimentation, which Belda-Medina and Goddard (2024) identify as essential for creative language development.

One final type of impact involved creating a cooperative system where AI and peer feedback complemented each other to enhance individual capabilities. (Figure 7), together with the RAFT and the TIP (approach, provided an effective structure for maintaining the primacy of communicative purpose while integrating technological tools, which is a balance that Ellis (2003) identifies as crucial for task-based language learning. This was enhanced by the teacher's role as an inductive learning facilitator, thereby shifting toward fostering critical engagement with AI tools rather than direct instruction, supporting Mohamed's (2024) observation that educators must redefine their position as learning facilitators in AI-integrated classrooms.

6. Conclusions

This study demonstrates that AI-integrated digital storytelling can significantly enhance EFL learning using a thoughtfully structured task-based methodology. The findings suggest that such integration can develop linguistic competence, digital literacy, critical thinking, cooperation, and creativity. Moreover, the methodological approach outlined in the study provides a practical framework for educators who seek to incorporate AI tools into EFL instruction. By emphasizing cooperative meaning-making, critical evaluation of AI outputs, and creative problem-solving, the approach maintained student agency while leveraging the generative capabilities of AI tools. However, this study focused on advanced EFL learners in a specific context of a digital storytelling course, which may limit the generalizability of its findings to other proficiency levels or learning environments. Additionally, while the three-month duration of the course provided valuable insights into the immediate impacts of AI use for storytelling purposes in the EFL context, it was unable to capture the potential long-term effects on language acquisition or autonomous learning behaviors. Nevertheless, several educational implications emerged:

- EFL instruction should incorporate explicit discussion of AI capabilities and limitations
- Cooperative frameworks are essential for balancing AI assistance with student agency
- Integrating diverse AI tools creates multiple entry points for authentic language engagement.

Future research should explore longitudinal effects of AI-integrated language learning, comparative studies examining different methodological approaches, adaptations for different proficiency levels, its potential for cultural mediation, and how different task types might leverage AI tools for specific EFL learning objectives, ensuring that technological innovation enhances rather than diminishes the human dimensions of language learning. As AI technologies continue to evolve, maintaining an ethical framework that prioritizes student agency and authentic communication will become increasingly essential.

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