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Thematic Collection¹

Exploring the Use of Generative AI in Student-Produced EFL Podcasts: A Qualitative Study

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Abstract

The rapid advancement of Artificial intelligence (AI) technologies has made new opportunities available in language education. This qualitative study investigates using generative AI tools by university English as a Foreign Language (EFL) students to create podcasts for language learning. The research was based on 80 undergraduate students who responded to open-ended questions about using Generative AI-based technologies in different podcast aspects, from writing the script to generating ideas and editing the content. Our thematic analysis of the responses showed that generative AI could act as a creative collaborator in podcast production, improving the quality of spoken language and speeding up production. However, the results also exposed immense areas where the tools could have more cultural context. It raised important questions about the ethics of authorship and data protection and the continued necessity for human input and oversight. This study has two implications: firstly, it suggests the possible benefits of adding Generative AI into student-driven EFL podcast projects and, secondly, the folding mode to max out each other. These results have important implications for educators and researchers designing practical, ethical AI applications for language learning. The paper concludes with suggestions for further research and practical advice for how the results of this study might impact EFL teaching practices in an age where AI technologies are advancing rapidly.

Keywords: *Artificial Intelligence, Generative AI, Podcast, EFL Podcasting, Educational Technology*

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Introduction

Artificial intelligence (AI) is advancing rapidly in many areas, including education (Liu & Yushchik, 2024; Rahiman & Kodikal, 2024). AI tools like chatbots, automated writing evaluation systems, and intelligent tutoring programs (Fryer & Carpenter, 2006) have been altering the landscape of English as a Foreign Language (EFL) education. These technologies are envisioned to offer EFL learners personalised learning, immediate feedback, and interactional practice (Golonka et al., 2014; Xu & Warschauer, 2020).

One of the more critical advances in AI is Generative AI or the Large Language Model in particular (Patil et al., 2024). Models such as the more powerful GPT-4 (Generative Pre-trained Transformer 4) are taught to generate human-like text based on a given input prompt or certain pre-patterns they remember from having been trained with large datasets (Floridi & Chiriatti, 2020; Brown et al., 2020). Compared with past times of AI technology, generative AI is a big step forward in natural language processing, which affects how we conceive and teach languages.

Generative AI technologies can assist EFL learners with productive language skills (writing and speaking), given their linguistic creativity at an advanced level (Thorne, 2024; Vo & Nguyen, 2024). These AI systems can function as intelligent writing assistants that suggest context-aware language support, grammar corrections, and even creative input to L2 learners. In addition, generative AI might generate more enticing language learning materials, such as chatbots, that better resemble actual conversational practice (Pérez et al., 2020).

However, despite the increasing attraction to generative AI in language education, its implications for real EFL learning contexts have yet to be explored. Although previous works have experimented with the implementation of AI tools like chatbots or automated writing evaluation (Baskara, 2023a; Fan & Ma, 2022; O'Grady, 2023) within the classrooms overall, evidence about student-driven assignments involving generative AI technologies has been lacking in previous studies. Secondly, we must learn more about how EFL learners experience and engage with creative, generative AI tools in ideational and productive language work. Given the above, this paper sets out to address the need for educational innovation that would be focused on students' experiences and perspectives of AIED technologies by exploring successes, challenges, and issues experienced in learning English through AI as a springboard for promoting a pedagogically sound student-centred approach in using AI in EFL education.

AI in Language Education

In recent years, there has been flourishing work in applying artificial intelligence to language education (Baskara, 2023b; Creely, 2024; Kohnke et al., 2024). Consistent with this prediction, new technology tools and systems have been developed using AI technologies to support language learning (Jeon, 2024). Intelligent tutoring systems (ITS) have been created to give students at every level personalised instruction and feedback as they learn (Akyuz, 2020; Mousavinasab et al., 2021). Some systems use natural language processing to process student input and adapt responses.

Chatbots or virtual conversational agents commonly apply AI in language learning (Alrajhi, 2024; Ortega-Ochoa et al., 2024). Hence, these AI tools create human-like interaction and provide a safe environment for the users to express their language skills (Fryer & Carpenter, 2006; Pérez et al., 2020). Chatbots may be programmed to offer the kind of practice and

corrections that create authenticity in language usage, accompanied by explanations, making them valuable tools for self-paced language learning.

Automated Writing Evaluation (AWE) Systems are another class of AIED Language Learning tools. These systems use natural language processing and machine learning algorithms to analyse and provide feedback on learners' written texts (Xu & Warschauer, 2020). Using AWE, students can refine their abilities by receiving tips on grammar, vocabulary, organisation, and cohesiveness for written work. Despite promising reports in developments utilising AI for different phases of language acquisition, there is clean literature available on the usage of generative AI (e.g., massive language fashions) in EFL schooling. Therefore, we must explore the possible role of these intelligent technologies in authentic language learning settings as superior AI systems grow and become increasingly available.

Generative AI and Its Potential for EFL

Generative AI, such as GPT-3.5 and other large-scale language models, represents a breakthrough in capabilities for artificial intelligence. They are trained on large text corpora and can produce human-like prose based on input prompts or patterns observed in the training data (Brown et al., 2020; Floridi & Chiriatti, 2020). Generative AI can create coherent, topical, and innovative text, thus showing its potential for utilisation in language learning.

Generative AI technologies are beneficial in EFL learning and can assist in numerous regions of language skill construction. For example, AI systems can be designed to generate writing prompts, ideation support, and individualised feedback for learners in writing tasks. Using generative AI tools, EFL students can learn new vocabulary, write differently, and improve their language competencies.

Generative AI would also help produce more involving and interactive language learning resources. For instance, new technology such as AI-powered chatbots or virtual agents could be designed to mimic real-life conversational settings in a controlled yet realistic environment that benefits EFL learners to enhance their speaking and listening proficiency (Pérez et al., 2020). Such AI-supported conversation partners would be able to cater to learners' proficiency levels, correct them, and offer learners practice with different types of language use.

Although the possible use of generative AI in EFL education is promising, current research examining the implementation and usage of such technologies by language learners engaged in actual learning tasks still needs to be explored. It is crucial to understand how students engage with these tools to model practical pedagogical approaches that take advantage of the benefits of generative AI tools while considering shortcomings and concerns about them.

Podcasting as an EFL Learning Activity

Podcasting has become a popular language-learning activity in EFL classrooms (Chaves-Yuste & de-la Peña, 2023). Both in practice and based on the literature, the creation and sharing of audio can be used for oral skill development and communication (Abdous et al., 2009). Podcasting projects allow learners to engage in creative language production, collaborate with peers, and develop digital literacy skills (Phillips, 2017).

Research has shown that podcasting activities can significantly affect EFL learners' motivation, confidence, and language proficiency levels. For example, Sotlikova and Haerazi (2023) reported that students who participated in podcasting projects enhanced their oral communication skills and increased their willingness to communicate in English. Similarly, Umaraliyeva and Bozorboyeva (2023) found that podcasting improved EFL learners' listening comprehension and vocabulary acquisition.

With its demonstrated value in the context of language learning, podcasting offers an appropriate site for investigating the implementation and incorporation of generative AI technologies in EFL education. By examining how students use generative AI tools in constructing their podcasts, this investigation provides essential insights into how AI-assisted language learning may or may not function in authentic, student-driven projects.

Research Questions

To address the gaps in existing research and provide an empirically grounded understanding of generative AI use in EFL podcasting, this study seeks to answer the following research questions:

RQ1: How did EFL students use generative AI during a podcast production project?

This question explores how language learners interacted with and leveraged generative AI tools throughout the podcast creation, including scriptwriting, idea generation, and content editing.

RQ2: What benefits and limitations of generative AI did students perceive?

This question investigates students' perceptions of the advantages and drawbacks of generative AI technologies in their podcasting projects, shedding light on the potential opportunities and challenges associated with AI integration in language learning.

RQ3: What ethical and practical concerns emerged from students' experiences with AI?

This question examines the ethical and practical issues that arose during students' engagement with generative AI, such as concerns related to authorship, data privacy, and the need for human oversight and cultural contextualisation.

By addressing these research questions, this study aims to contribute to the growing body of knowledge on using advanced AI technologies in EFL education and provide valuable insights for educators, researchers, and language learners navigating the intersection of artificial intelligence and language learning in the digital age.

Methodology

Research Design

A qualitative research design was employed to provide a more profound interpretation of the experiences and perceptions of EFL learners who used generative AI in podcast production (Creswell & Poth, 2016; Tasker & Cisneroz, 2019; Yates & Leggett, 2016). There are several reasons why qualitative methods are appropriate for exploring complex, contextual, and emergent phenomena like the implementation of new technologies in educational settings (Merriam & Tisdell, 2015). This study utilised open-ended questionnaires to generate data using the participants' rich and detailed stories about how they experienced and reflected on generative AI tools in the podcast project (Patton, 2014; Tasker & Cisneroz, 2019).

The choice of open-ended questionnaires was driven by several guidelines (Moser & Korstjens, 2018). For one, it allows for a richer set of experiences and perspectives to be captured from more participants than interviews or focus groups (Braun et al., 2019). One benefit of open-ended questionnaires is that they allow the respondents to pause and reflect on how they use AI and articulate them in written form, leading to more thoughtful and extensive answers (Robinson, 2014). Lastly, questionnaires enable anonymity, facilitating participants in sharing honest opinions and experiences without fear of judgment or consequences (Fryer & Carpenter, 2006).

Context and Participants

A private university in Indonesia where English is taught as a foreign language was selected as the research site. The study involved 80 third-year undergraduate students majoring in English Language and Literature. This sample size was determined based on two factors: (1) the total enrolment in the language technologies and digital communication course (100 students), and (2) the need for a sufficient number of participants to reach data saturation in qualitative research (Guest et al., 2006). The final sample of 80 students represented 80% of the course enrollment, robustly representing diverse experiences and perspectives.

The participants exhibited a range of English proficiency levels and varied prior experience with podcasting and AI technologies. This diversity enhanced the study by allowing for the examination of a broad spectrum of viewpoints and experiences concerning generative AI in an EFL learning setting.

As part of their coursework, students worked in groups of 3-4 to plan, script, and create a short educational English podcast to engage other EFL learners. The course introduced students to a variety of generative AI tools, specifically:

1. Text Generators:
 - ChatGPT (GPT-3.5 and GPT-4 versions)
 - Claude (Version 3)
 - Microsoft Copilot (web-based access)
 - Google Gemini (web-based access)

2. Image Generators:
 - Adobe Firefly (web-based access)
 - Microsoft Designer (web-based access)

3. Music Generators:
 - Suno (V3, web-based access)
 - Udio (version 1.5, web-based access)

4. AI Audio Editor:
 - Voice AI (web-based access)

Students were encouraged to experiment with these tools throughout the podcast creation process. They primarily used text generators for brainstorming ideas, script generation, and

content editing. Image generators were employed to create podcast thumbnails and promotional materials. Some students explored music generators and AI audio editors to incorporate original music and sound effects.

To ensure ethical use and understanding of AI tools, students received guidance on proper attribution, critical evaluation of AI-generated content, and the importance of human oversight in the creative process. They were required to document their use of AI tools in a project log, including specific prompts and how they integrated or modified AI-generated content.

This hands-on experience with a diverse range of AI tools allowed students to develop practical skills and explore creative applications of AI in language learning materials and experiences. The various tools and their applications provide a comprehensive context for examining students' perceptions and experiences with generative AI in EFL podcast production.

Data Collection

Data were collected following students' completion of their podcast projects. Each respondent completed an online open-ended questionnaire on their experiences and perceptions of using generative AI in the podcast production process. We developed our questionnaire through Google Forms and emailed it to participants. The questionnaire was divided into six sections around 18 prompts, each addressing a different aspect of participants' experiences with generative AI and podcasting (Table 1).

The prompts were designed to enable the interviewees to provide detailed and reflective responses about a potentially extensive range of topics associated with the research questions. The participants were informed that the questions and responses needed to be in English, and the only constraint was for it to be, at most, a paragraph. It was anticipated to require 15-20 minutes to complete the survey.

To establish the validity and clarity of the questionnaire, a pilot study was conducted with a small number of EFL learners who were not part of the main study. Some phrasing and order changes were made due to this feedback. Since the participants would be high achievers, the anonymity of the survey was intended to help them share their accurate opinions and experiences without fear of judgment or consequence. Participants were assured that their responses would be confidential and solely used for research. Further, participants were informed that their involvement in the study was voluntary and that they could choose not to respond to any prompts if they felt uncomfortable doing so.

The structure of the open-ended questionnaire (Table 1) was carefully designed to align with our research questions. Sections 1 and 2 provide context for RQ1 by exploring students' prior experiences with EFL and podcasting. Sections 3 and 4 directly address RQ1, investigating how students used generative AI during different phases of podcast production. Section 5 corresponds to RQ2, probing students' perceptions of the benefits and limitations of generative AI in their projects. Finally, Section 6 encompasses elements of all three research questions, focusing on RQ3 by encouraging students to reflect on ethical and practical concerns that emerged from their experiences. This alignment ensured that the data collected through the questionnaire would directly inform our research objectives and provide comprehensive insights into students' interactions with generative AI in EFL podcast production.

Table 1

Open-Ended Questionnaire for Research on Generative AI in EFL Podcast Production

Section	Prompts
1. General Experience with EFL and Podcasting	1. Describe your prior experience with English as a Foreign Language (EFL) courses. 2. Have you ever participated in a podcasting project? If yes, please elaborate on your role and the topic.
2. Pre-Production Phase of Podcasting	3. How do you usually plan a podcast episode in an EFL setting? 4. What challenges have you encountered during an EFL podcast's planning or scriptwriting phases? 5. Can you explain any strategies you employ to generate ideas or content for your podcast?
3. Generative Artificial Intelligence (GAI) in Pre-Production	6. Have you used Generative AI tools, such as Large Language Models, in podcast production's planning or scriptwriting phases? If yes, please provide details. 7. What tasks did you delegate to these AI tools during pre-production? 8. How effective did you find the use of Generative AI in aiding your creative process? Elaborate. 9. Were there any limitations or challenges you encountered when using Generative AI tools in pre-production?
4. Post-Production Phase of Podcasting	10. Describe the steps you follow in the post-production phase of an EFL podcast. 11. What obstacles, if any, have you faced during podcast editing and refinement?
5. Generative Artificial Intelligence (GAI) in Post-Production	12. Have you utilised Generative AI tools during the editing or post-production stages? If so, specify how. 13. How did the use of Generative AI influence the quality and content of the final podcast episode? 14. Were there any limitations or ethical concerns you encountered when employing Generative AI in post-production?
6. Overall Experience and Future Prospects	15. How would you assess the overall impact of Generative AI on your EFL podcasting experience? 16. Would you recommend integrating Generative AI tools in EFL podcasting courses? Why or why not? 17. What suggestions can you offer for improving the use of Generative AI in EFL podcast production, both in the pre-and post-production stages? 18. How do you envision the future of Generative AI in enhancing EFL podcasting and other creative projects?

Data Analysis

The thematic analysis followed Braun and Clarke's (2006) six-phase approach to the open-ended questionnaire data. Thematic analysis is a qualitative research methodology commonly used to identify, analyse, and report patterns (themes) within qualitative data (Braun & Clarke, 2012). The rationale for selecting this method was its pragmatism, accessibility, and flexibility, making it a good fit for exploring participants' experiences, perceptions, and meanings (Castleberry & Nolen, 2018). In the data analysis process, several key steps were followed to ensure a thorough and rigorous examination of the open-ended questionnaire responses. Table 2 below summarises the six-phase approach employed in this thematic analysis.

Multiple researchers were involved throughout the data analysis process to ensure the rigour and reliability of our analysis. In the familiarisation phase, all three research team members independently read and re-read the questionnaire responses. During open coding, two researchers independently coded the data, while the third researcher acted as an auditor, reviewing the codes for consistency and accuracy. The reviewing codes phase involved all three researchers meeting to discuss and refine the codes, resolving discrepancies through

consensus. Theme development was initially conducted by two researchers, with the third researcher providing critical feedback and suggestions. The finalising themes stage involved all three researchers collaboratively naming and defining the themes. Finally, we employed investigator triangulation to enhance credibility, with each researcher independently analysing a subset of the data before comparing and integrating their findings. This multi-researcher approach at each stage of the analysis helped minimise individual bias and enhance the trustworthiness of our findings.

Table 2

Summary of Data Analysis Process

Phase	Description
Familiarisation	Researchers read and re-read the questionnaire responses, documenting initial ideas and patterns.
Open Coding	Identification and labelling of data features relevant to the research questions.
Reviewing Codes	Independent review and iterative refinement of codes, reaching consensus on coding differences.
Theme Development	The organisation of codes into possible themes is refined by comparison with the coded data and the entire dataset.
Finalising Themes	Naming and defining final themes, supported by illustrative quotations from responses.
Enhancing Credibility	Data triangulation, investigator triangulation, and member-checking were used to validate the findings.

The analysis process commenced with familiarisation, as the researchers read and re-read the questionnaire responses to understand the data collected from participants. During this phase, initial ideas and potential patterns were documented. Starting with an open coding stage, researchers identified data features essential to the research questions and labelled them as initial codes. Using a grounded approach, codes were inductively derived from themes that emerged from the data (Braun et al., 2019).

The researchers then independently reviewed the codes and iteratively met to refine them, clarifying differences or ambiguities in coding and reaching a consensus. The codes were organised around possible themes, which were refined by comparing the different themes with the coded quotes and the entire data set. This process ensured that the themes were internally consistent, unique, and accurately reflected participants' experiences and viewpoints (Nowell et al., 2017).

Several iterations later, the final themes were decided and named relevant to their content and scope. For each theme, the researchers identified illustrative quotations from the questionnaire responses to help rigorously understand and provide evidence. During the analysis process, researchers maintained a reflexive stance, considering their biases and assumptions and trying to identify alternative interpretations (Creswell & Creswell, 2018).

Several strategies were pursued to enhance the credibility of the findings, including data triangulation, investigator triangulation (involving multiple researchers in the analysis process), and member-checking (presenting a summary of the results to a subset of participants for feedback and validation) (Nowell et al., 2017). The study followed a rigorous and systematic process of analysing the data to develop an in-depth qualitative understanding of EFL learners' experiences with and perceptions of using generative AI in podcast production, grounded in the participants' own words and perspectives.

Results

The thematic analysis of the open-ended questionnaire responses yielded five main themes that captured the participants' experiences and perceptions of using generative AI in their EFL podcast production projects. These themes included: (1) Generative AI as a creative collaborator, (2) Enhancing linguistic quality and efficiency, (3) Limitations in creativity and cultural relevance, (4) Ethical concerns and ambiguities, and (5) Accessibility and ease-of-use challenges. Each theme is discussed in detail below, supported by illustrative participant quotes. Table 3 below summarises these key findings.

Table 3

Summary of Key Findings

Theme	Description	Example Quotes
Generative AI as a Creative Collaborator	AI tools like ChatGPT helped students brainstorm ideas, generate talking points, and draft scripts.	"ChatGPT was like a brainstorming buddy for me." (Andi, 21, Male)
Enhancing Linguistic Quality and Efficiency	AI tools improved grammar, vocabulary, and overall writing efficiency.	"I found ChatGPT helpful for polishing my script." (Dewi, 21, Female)
Limitations in Creativity and Cultural Relevance	AI-generated content sometimes needs more originality and cultural relevance, highlighting the need for human input.	"The AI can't replace the personal stories and cultural references that make a podcast truly relatable." (Indah, 21, Female)
Ethical Concerns and Ambiguities	Students expressed uncertainty about academic integrity and intellectual property rights when using AI tools.	"I had to do some research and talk to my professor to figure out what the ethical guidelines were." (Joko, 21, Male)
Accessibility and Ease-of-Use Challenges	The initial learning curve and technical barriers thoroughly affected students' ability to utilise AI tools fully.	"It took a lot of trial and error to figure out how to use it effectively." (Mira, 20, Female)

Generative AI as a Creative Collaborator

One of the most prominent themes that emerged from the data was the role of generative AI as a creative collaborator in the podcast production process. Many participants described how they used AI tools, particularly ChatGPT, to brainstorm ideas, generate talking points, and even draft scripts for their podcasts. They appreciated the AI's ability to give them a starting point when they felt they needed to be more inspired. As one participant, Andi explained:

"ChatGPT was like a brainstorming buddy for me. Whenever I got stuck on what to talk about in my podcast, I would give it a prompt related to my topic, and it would generate a bunch of ideas and angles I hadn't thought of before. It really helped me get the creative juices flowing." (Andi, 21, Male)

Another participant, Siti, shared a similar experience:

"I was surprised by how creative ChatGPT could be. When I asked it to help me come up with a script for my podcast introduction, it generated this really engaging and funny opening that I ended up using as a starting point. Of course, I had to tweak it and add my own personal touch, but it definitely gave me a great foundation to work with." (Siti, 20, Female)

These quotes illustrate how generative AI can serve as a valuable ideation tool, helping students overcome creative blocks and generating fresh perspectives on their chosen topics. However, many participants also recognised that the AI's contributions were just a starting point and required significant refinement and elaboration. As Budi put it:

"ChatGPT is great for giving you that initial push, but it's not going to write your whole podcast for you. You still need to put in the work to flesh out the ideas, add your own examples and experiences, and make it sound like your own voice. The AI is more like a collaborator than a ghostwriter." (Budi, 22, Male)

This sentiment was echoed by several other participants, who emphasised the importance of building upon and personalising AI-generated content to create a genuinely engaging and authentic podcast.

Enhancing Linguistic Quality and Efficiency

Another critical benefit of generative AI that participants highlighted was its potential to enhance their podcast scripts' linguistic quality and efficiency. Many students reported using ChatGPT and Claude to check their grammar, rephrase awkward sentences, and suggest more sophisticated or idiomatic expressions. Dewi, for example, shared:

"I found ChatGPT helpful for polishing my script. I would paste in a paragraph I had written, and it would suggest ways to make the sentences flow better or point out grammar mistakes I had missed. It was like having a virtual writing tutor." (Dewi, 21, Female)

Similarly, Eko described how generative AI helped him improve the vocabulary and style of his podcast script:

"English is not my first language, so sometimes I struggle to find the right words to express my ideas. When I was working on my podcast script, I would often ask GPT-3.5 to suggest alternative phrases or more advanced vocabulary. It really helped me take my writing to the next level." (Eko, 22, Male)

In addition to improving the linguistic quality of their scripts, several participants also noted that using generative AI made their writing process more efficient. As Fina explained:

"Before I started using ChatGPT, I would spend hours agonising over my script, trying to get every sentence just right. But with the AI's help, I was able to generate a rough draft much more quickly and then focus my time on refining and personalising it. It definitely streamlined my writing process." (Fina, 20, Female)

These experiences suggest that generative AI can be a valuable tool for supporting EFL students' writing skills, providing them with personalised feedback and suggestions to enhance their language use's clarity, sophistication, and fluency.

Limitations in Creativity and Cultural Relevance

Despite the perceived benefits of generative AI, participants also identified several limitations and drawbacks of using these tools in their podcast projects. One common concern was that the AI-generated content sometimes lacked originality or creative flair. As Gita shared:

"While ChatGPT was great for generating ideas, I found that a lot of the suggestions it gave were kind of generic or cliché. To make my podcast really engaging and unique, I had to come up with my own creative angle and add a personal touch that the AI just couldn't provide." (Gita, 21, Female)

Another limitation that several participants pointed out was the AI's lack of cultural context and local relevance. As Hadi explained:

"I was doing a podcast about Indonesian folklore, and when I asked ChatGPT to help me come up with stories to include, it generated a bunch of examples from Western fairy tales instead. It didn't seem to have much knowledge of Indonesian culture or traditions. I realised that for my podcast to really resonate with my target audience, I needed to draw on my own cultural background and experiences, not just rely on the AI." (Hadi, 22, Male)

This sentiment was echoed by Indah, who noted:

"The AI is great for generating general ideas and improving language use, but it can't replace the personal stories, examples, and cultural references that make a podcast truly relatable and meaningful to Indonesian listeners. We still need to bring our own perspectives and experiences to the table." (Indah, 21, Female)

These observations underscore the limitations of current generative AI systems regarding creativity and cultural awareness. While they can provide valuable linguistic support and ideation assistance, they cannot substitute for the unique insights, experiences, and creative vision that human podcasters bring to their work.

Ethical Concerns and Ambiguities

A fourth theme that emerged from the data centred around ethical concerns and ambiguities related to the use of generative AI in academic contexts. Several participants expressed uncertainty about the appropriate boundaries between using AI as a creative aid and relying on it to produce content. As Joko shared:

"When I first started using ChatGPT to help with my podcast script, I wasn't sure where to draw the line. Like, is it okay to use the exact phrases and sentences it generates, or is that a form of plagiarism? I had to do some research and talk to my professor to figure out what the ethical guidelines were." (Joko, 21, Male)

Other participants raised questions about the intellectual property implications of using AI-generated content. Kartika wondered:

"If I use ChatGPT and Claude to help me write my podcast script, who owns the copyright for that content? Is it me, since I'm the one who prompted the AI and put the final script together? Or does OpenAI and Anthropic have some claim to ownership since their tool generated a lot of the raw material? It's a bit of a gray area." (Kartika, 22, Female)

These quotes highlight the need for clear institutional policies and guidelines around the ethical use of generative AI in academic work. As Lina put it:

"I think the lecturers and universities need to have open conversations with students about how to use AI tools like ChatGPT in a responsible and ethical way. We need clear guidance on what's considered acceptable use and what crosses the line into cheating or plagiarism. It's a new frontier, and we're all kind of figuring it out as we go along." (Lina, 21, Female)

Such concerns underscore the importance of proactively addressing the ethical dimensions of AI use in educational contexts and equipping students with the knowledge and frameworks they need to navigate these complex issues.

Accessibility and Ease-of-Use Challenges

A final theme from the data related to the challenges some participants faced in learning to use generative AI tools effectively. While most students found the technology helpful once they got the hang of it, several noted that the initial learning curve was steep. As Mira shared:

"When I first started using ChatGPT and Claude, I found it pretty overwhelming. There were so many different prompts to play around with, and I wasn't always sure what kind of prompts would generate the best results for my podcast. It took a lot of trial and error to figure out how to use it effectively." (Mira, 20, Female)

Other participants highlighted technical barriers that sometimes limited their ability to fully utilise the AI tools. Nico, for example, noted:

"I don't have a super fast or reliable internet connection at home, which made it frustrating to use ChatGPT sometimes. The page would take forever to load, or my chat session would get disconnected midway through. I definitely felt like I wasn't able to take full advantage of the AI because of those technical issues." (Nico, 21, Male)

These experiences suggest that while generative AI is promising for enhancing EFL students' podcast production, its successful integration into the classroom requires carefully considering students' varied technological skills and resources. As Olivia reflected:

"I think if lecturers want to incorporate AI tools like ChatGPT into their courses, they need to make sure all students have the necessary training and support to use them effectively. They also need to be aware that not everyone has access to the same level of technology or internet connectivity at home." (Olivia, 22, Female)

These observations underscore the need for educators to take a proactive and equitable approach to integrating generative AI into their teaching, providing students with the guidance, resources, and accommodations they need to successfully leverage these tools for language learning.

Discussion

The findings of this study offer valuable insights into the potential of generative AI as a tool for enhancing EFL students' podcast production and language learning experiences. The results align with and extend previous research on the use of AI in language education, highlighting new opportunities and challenges specific to integrating generative AI in student-driven creative projects. Table 4 below summarises the key points discussed in this section.

Table 4
Summary of Discussion Section

Theme	Description	Example Points
A Partner in the EFL Podcast Process	Generative AI collaborates effectively in EFL podcast production, enhancing creativity and linguistic quality.	AI assists in brainstorming, linguistic scaffolding, and providing feedback, boosting creative confidence and expressive abilities.
Preparing for the Ethical Challenges of AI	Ethical ambiguities such as academic integrity and intellectual property rights need clear policies and guidelines.	Institutions should develop comprehensive AI usage policies, and students should cultivate AI literacy to navigate ethical complexities.
Limitations and Future Directions	Identified limitations include self-reported data biases, lack of a control group, and rapid AI development.	Future research should include larger-scale, multi-site studies, mixed-methods approaches, longitudinal studies, and linguistic analysis of AI-assisted content.

A Partner in the EFL Podcast Process

The participants' experiences depict generative AI as a valuable collaborative partner in the podcast production process, resonating with previous research highlighting AI's benefits for supporting EFL learners' creative and productive language use (e.g., Fryer & Carpenter, 2006). The AI's ability to provide students with on-demand ideas, linguistic scaffolding, and feedback appeared to boost their creative confidence and expressive abilities, echoing arguments that AI can enhance EFL pedagogy by augmenting and empowering learners and instructors during communicative tasks.

For example, many participants described how using ChatGPT to brainstorm ideas and generate talking points helped them overcome creative blocks and develop more engaging podcast content. This finding aligns with research by Heyman et al. (2024), who found that AI-assisted brainstorming can stimulate EFL learners' divergent thinking and idea-generation skills. Similarly, participants' use of GPT-3.5 to refine their scripts' grammar, vocabulary, and

style resonates with studies highlighting the potential of AI-powered writing tools to enhance EFL students' linguistic accuracy and complexity (e.g., Wang, 2024).

However, the results also underscore that generative AI is not a panacea but a tool whose effectiveness depends on how thoughtfully it is implemented in language learning. Participants' experiences highlight the importance of framing AI not as an autonomous content creator but as an assistive collaborator- a source of inputs to be actively interpreted, evaluated, and adapted by human users. This perspective aligns with Godwin-Jones's (2022) argument that the most productive applications of AI in language learning involve a human-machine partnership, with AI serving in an assistive role.

Moreover, as noted by several participants, the cultural and contextual limitations of current generative AI systems point to the continued importance of human cultural insight in shaping authentic and relatable language learning content (Fui-Hoon Nah et al., 2023). This finding resonates with concerns raised by Kannan and Munday (2018) about the potential for AI language models to perpetuate cultural biases and stereotypes. Zheng and Stewart's (2023) writing experiments with ChatGPT demonstrate that while AI can assist EFL teachers in creating new source materials, the generated texts often contain embedded WEIRD (western, educated, industrial, rich, and democratic) cultural values. Therefore, EFL teachers must critically examine AI-generated content to foster students' critical cultural awareness and develop the pragmatic competencies essential for effective communication in the target language.

As such, the findings suggest that language educators should approach generative AI as a tool for augmenting, rather than replacing, traditional strategies for fostering EFL students' communicative and creative capacities. This perspective aligns with Godwin-Jones's (2022) vision of AI to enhance and extend language learning, not to replace existing methods known to be effective. By incorporating generative AI as part of a balanced and holistic approach to language pedagogy, teachers can harness its potential to enrich students' learning experiences while cultivating the critical and cultural competencies needed for authentic language use (Creely, 2024; Li et al., 2024).

Preparing for the Ethical Challenges of AI

The ethical ambiguities and concerns that participants encountered when using generative AI tools, such as uncertainty around academic integrity and intellectual property rights, resonate with broader discussions about the ethical implications of AI in educational settings (Zawacki-Richter et al., 2019). As generative AI technologies become more sophisticated and accessible, EFL educators and students will increasingly need to grapple with complex questions about the appropriate use and attribution of AI-generated content in academic work.

The findings underscore the need for language education institutions to proactively develop clear policies and guidelines for the ethical use of generative AI in the classroom (Farrelly & Baker, 2023; Holmes & Miao, 2023; McDonald et al., 2024)). This recommendation aligns with Chan's (2023) call for a comprehensive framework for responsible AI implementation in teaching and learning contexts, which should address issues such as academic integrity, data privacy, and intellectual property rights. By establishing transparent and consistent guidelines, institutions can help students and teachers navigate the ethical grey areas surrounding AI use and foster a culture of responsible innovation in language education.

In addition to institutional policies, the results highlight the importance of explicitly cultivating students' AI literacy as part of their language-learning journey (Alzubi, 2024). AI literacy is the ability to critically understand, evaluate, and use AI technologies responsibly and effectively (Chiu et al., 2024). For EFL learners, this involves developing the skills to assess the strengths and limitations of generative AI tools critically, use them to support their language development, and navigate the ethical challenges that may arise (Law, 2024).

Integrating AI literacy into EFL curricula aligns with broader calls for "a pedagogy of digital literacies" in language education (Godwin-Jones, 2022, p. 14), which emphasises the need for learners to develop the cognitive, social, and ethical competencies needed to thrive in an increasingly AI-mediated world. By explicitly teaching students how to engage with AI technologies critically and responsibly, language educators can empower them to harness these tools for their linguistic and creative growth while preparing them for the ethical complexities of the digital age.

Limitations and Future Directions

As with any research endeavour, our study on the use of generative AI in EFL podcast production is not without its limitations. Acknowledging these constraints is crucial for contextualising our findings and identifying avenues for future research that can build upon and extend our work.

One of the primary limitations of our study lies in its reliance on self-reported data. While self-reports offer valuable insights into participants' perceptions and experiences, they are susceptible to various biases that may influence the validity of the findings. For instance, social desirability bias could lead students to report more positive experiences with AI tools than they had to appear technologically savvy or to meet perceived expectations (Krumpal, 2013). Additionally, recall bias may have affected the accuracy of students' accounts, mainly when reflecting on their experiences over the semester (Althubaiti, 2016).

Our study compounds the potential for these biases focused on a single cohort of students at one Indonesian university. This limited context raises questions about the generalizability of our findings to other educational settings or student populations. As Henrich et al. (2010) famously argued, much of psychological research is based on WEIRD (Western, Educated, Industrialized, Rich, and Democratic) samples, which may not represent the global population. While our Indonesian sample provides a valuable non-Western perspective, it still represents a specific cultural and institutional context that may not be generalisable to the broader EFL learner population.

Furthermore, the rapid pace of AI development presents a unique challenge for research in this field. The specific tools and capabilities available during our study period may quickly become outdated, potentially limiting the long-term applicability of some of our findings. This "AI churn" phenomenon, as described by Avin (2019), underscores the need for ongoing research that can keep pace with technological advancements.

Another limitation of our study is the lack of a control group. Without a comparison group of students creating podcasts without AI assistance, we cannot draw definitive causal conclusions about the impact of AI tools on the podcast production process or language learning outcomes. This limitation is standard in educational technology research, as noted by

Lai and Bower (2019), who found that many studies in the field lack robust experimental designs.

Despite these limitations, our study provides valuable insights into the potential of generative AI in EFL education and opens up several promising avenues for future research. One key direction for future studies is to conduct larger-scale, multi-site research that spans different cultural and institutional contexts. Such cross-cultural comparisons could help disentangle the effects of AI integration from cultural and contextual factors, providing a more nuanced understanding of how these tools can be effectively implemented across diverse EFL settings (Godwin-Jones, 2019).

Additionally, future research would benefit from employing mixed-methods approaches that combine qualitative insights with quantitative measures of students' language proficiency, creativity, and engagement. This could involve pre- and post-tests of language skills, creativity assessments, and engagement surveys to complement qualitative data. Such an approach aligns with calls for more comprehensive evaluations of technology integration in language learning.

Longitudinal studies that track students' use of AI tools and language development over extended periods could also provide valuable insights into the sustained impact of AI integration on language learning trajectories. This kind of long-term research is crucial for understanding the true potential of AI in education, as Zhang and Zou (2022) emphasised in their work on the long-term effects of technology in language learning.

Another promising direction is the linguistic analysis of AI-assisted content. Researchers could better understand how these tools influence language production by examining specific linguistic features such as complexity, accuracy, and fluency in podcasts produced with and without AI assistance. This type of analysis could build on existing work in computer-assisted language learning (CALL) that has examined the linguistic features of learner output in technology-enhanced environments (Chapelle, 2019).

As the field of AI in education continues to evolve, there is also a pressing need for research on AI literacy interventions. Developing and testing instructional modules or workshops that teach students how to critically evaluate AI-generated content and navigate the ethical considerations of AI use could be crucial for preparing learners to engage with these technologies responsibly (Ng et al., 2024).

Finally, future research should address the ethical and policy implications of integrating generative AI in EFL education. This could include studies on academic integrity, data privacy, and equitable access to AI technologies. As Holmes et al. (2023) argue, proactively addressing these issues is essential for ensuring that the integration of AI in education is both practical and ethically sound.

In conclusion, while our study provides valuable initial insights into the use of generative AI in EFL podcast production, it also highlights the need for continued research in this rapidly evolving field. By addressing the current study's limitations and pursuing these diverse research directions, future work can contribute to a more comprehensive and nuanced understanding of the role of generative AI in EFL education, ultimately helping to harness its potential to enhance language learning experiences and outcomes for students worldwide.

Conclusion

This study aimed to investigate Indonesian EFL university students' experiences and perceptions of using generative AI tools to generate podcasts for L2 learning. The results present a nuanced picture of the affordances and constraints in integrating this innovation into student-led imaginative endeavours.

Firstly, the generative AI showed a remarkable capacity for promoting EFL learners' creativity and language production. They overwhelmingly used chatbots to develop ideas, write scripts, and polish their language for their podcasts, thus producing more creative content due to increased creative confidence. The AI acted as a linguistic resource for real-time feedback, suggestions, and corrections to improve accuracy and fluency in the use of language. Our results lead us to propose that generative AI may be part of the solution for a robust and positive working team with EFL students in projects focusing on their creativity and communicativeness, supporting a steady line of research on the whole subject.

However, the study also exposed many controversies and variables regarding the application of generative AI in EFL learning. Several ethical grey areas emerged, raising questions about who can legitimately ascribe authorship to the outputs of AI and who owns it—academic integrity and intellectual rights in the era of AI. They also pointed out the cultural and contextual viability of today's AI language models, which sometimes manifested content that lacked relevance or authenticity for Indonesian users. In addition, even though the scope of their podcast projects was broad, some students fought against issues of accessibility and ease of use that dampened their ability to utilise the AI tools effectively. These results highlight that the ethical, cultural, and equity issues surrounding the deployment of AI in language education should be examined with care.

Based on our findings, we propose several implications for EFL teachers and institutions who wish to capitalise on the promise of generative AI in language teaching and learning. From a classroom perspective, the results hint that AI-focused tools can be embedded into project-based language learning activities—such as podcasting—to enable students to explore creative expression, linguistic experimentation, and collaboration. Educators should provide appropriate scaffolding and guidance on the best use of AI in a learning environment, which may sometimes explore ethical dimensions. This could include explicit instruction on AI literacy skills, such as critically appraising AI-generated content and understanding the ethical implications of using AI in academic work.

At the institutional level, the study indicates that language education programs should implement progressive policies and practices regarding generative AI. This could include developing guidelines for the ethical use of artificial intelligence in student projects, training instructors on integrating AI into their curriculum and developing technology infrastructure and support to ensure equitable access to AI tools for all students. By tackling the opportunities and challenges of generative AI head-on, EFL institutions can position themselves at the forefront of 21st-century language education innovation.

The study suggests several promising lines of inquiry for future investigation into the intersection between generative AI and EFL education. Follow-ups may look into the use of these resources on student-podcast linguistic features and overall quality, the differences in using various AI tools and pedagogical techniques, and the impact of improving students' AI literacy to enhance their learning experiences. Continued research will be critical for

understanding the implications of these generative AI technologies for language teaching and learning as they continue to develop.

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Ethics Declarations

Competing Interests

No, there are no conflicting interests.

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