

Leveraging Generative AI in the Development, Adaptation, and Evaluation of EAP

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Abstract—This study explores teacher and student perspectives on the use of Generative AI in the development, adaptation, and evaluation of English for Academic Purposes (EAP) materials. Using a mixed-method, exploratory design, data were collected through questionnaires, interviews, focus groups, and analysis of AI-generated materials. The findings reveal that while both teachers and students recognise the efficiency and accessibility of AI tools such as ChatGPT, their perceptions differ significantly. Teachers emphasised accuracy, pedagogical value, and ethical concerns, whereas students prioritise usability and convenience. AI was found to enhance engagement and support material development but also posed risks of over-reliance and reduced critical engagement. The study highlights the need for structured integration, teacher training, and digital literacy development. It concludes that AI can be an effective support tool when balanced with human judgment, promoting meaningful learning while maintaining academic integrity and learner autonomy.

I. INTRODUCTION

1.0 Background of English for Academic Purposes (EAP)

English for Academic Purposes (EAP) has evolved as a specialised branch of language education that prepares learners to participate effectively in academic contexts. It focuses on developing competencies such as academic reading, writing, listening, and speaking, with particular attention to discipline-specific discourse, argumentation, and critical engagement with texts. Traditionally, EAP materials have been carefully designed by experts to reflect authentic academic practices, incorporating tasks that promote analytical thinking, coherence in writing, and appropriate use of academic conventions. In recent years, the emphasis has shifted toward learner-centred approaches that prioritise adaptability, authenticity, and the integration of digital tools to support diverse learner needs.

1.1 Emergence of Generative AI in Language Education

The rapid advancement of Generative AI has introduced new possibilities in language education. AI-driven tools, such as ChatGPT, can generate texts, providing instant feedback, and supporting language practice across multiple contexts. In EAP settings, these tools are increasingly used to create model essays, design practice exercises, and simulate academic discourse. Their ability to produce contextually relevant and linguistically accurate content has made them valuable resources for both teachers and learners. Consequently, Generative AI is reshaping traditional approaches to teaching, learning, and material development.

1.2 Increasing Reliance on AI for Academic Writing and Material Design

With the growing accessibility of AI tools, students are increasingly relying on them for tasks such as drafting essays, summarising texts, and refining language. Similarly, teachers are beginning to incorporate AI into the development and adaptation of instructional materials, using it to generate content quickly and tailor tasks to varying proficiency levels. While this reliance enhances efficiency and accessibility, it also raises concerns about authenticity, originality, and the potential erosion of independent writing skills. The dual role of AI—as both a facilitator and a possible constraint—necessitates a critical examination of its impact within EAP contexts.

1.3 Rationale for Exploring Both Teacher and Student Perspectives

Understanding the integration of AI in EAP requires examining the perspectives of both teachers and students, as they represent key stakeholders in the educational process. Teachers influence how AI is implemented, interpreted, and regulated within the classroom, while students' experiences determine its actual impact on learning. Differences in perception—regarding usefulness, reliability, and ethical use—can significantly affect the effectiveness of AI integration. Exploring these perspectives

provides a more holistic understanding of how AI-mediated practices are negotiated in real classroom settings.

1.4 Problem Statement

Despite the increasing use of Generative AI in EAP, there is limited empirical research examining how teachers and students perceive its role in the development, adaptation, and evaluation of academic materials. Existing studies often focus on either technological capabilities or student outcomes, with insufficient attention to the interaction between user perceptions and pedagogical practices. Furthermore, concerns regarding over-reliance, reduced originality, and ethical implications remain underexplored in the context of EAP material use.

1.5 Research Objectives

This study aims to:

1. Examine teacher and student perspectives on the use of Generative AI in EAP materials development.
2. Analyse how AI is used to adapt materials to different learning contexts and proficiency levels.
3. Investigate perceptions of the effectiveness and reliability of AI-generated content.

1.6 Research Questions

1. How do teachers and students perceive the use of Generative AI in EAP materials development?
2. In what ways is AI used to adapt EAP materials for diverse learners?
3. How do teachers and students evaluate the quality and usefulness of AI-generated content?

1.7 Significance of the study

This study contributes to the growing field of technology-enhanced language learning by providing insights into the human dimensions of AI integration. By examining both teacher and student perspectives, it offers a balanced understanding of how Generative AI is perceived and utilised in EAP contexts. The findings can inform pedagogical practices, support the development of effective training programmes, and guide curriculum design.

II. LITERATURE REVIEW

2.0 Theoretical Foundations

2.1 Constructivism and Learner-Centred Pedagogy

Constructivist theory positions learning as an active process in which learners construct knowledge through interaction, reflection, and experience. In learner-centred pedagogies, students are encouraged to engage with content critically, collaborate with peers, and take responsibility for their learning. Within EAP contexts, this approach supports the development of academic literacy by promoting inquiry, interpretation, and self-regulation. The integration of Generative AI aligns with constructivist principles when it is used as a facilitative tool that encourages exploration and refinement of ideas rather than passive consumption of information.

2.2 Second Language Acquisition Theories

The field of Second Language Acquisition (SLA) provides essential insights into how learners acquire academic language proficiency. Theories such as Krashen's Input Hypothesis emphasise the importance of comprehensible input, while Swain's Output Hypothesis highlights the role of language production in learning. Interactionist perspectives further stress the importance of meaningful communication. In EAP, these theories underpin the design of materials that balance input, output, and interaction. AI tools can support SLA processes by providing immediate feedback, varied input, and opportunities for practice, though their effectiveness depends on how learners engage with them.

2.3 Sociocultural Theory

Sociocultural theory, rooted in Vygotskian principles, emphasises the role of social interaction and scaffolding in cognitive development. Learning occurs within the Zone of Proximal Development (ZPD), where guidance from more knowledgeable others enables learners to perform beyond their current capabilities. In AI-mediated environments, tools such as ChatGPT can function as supplementary scaffolds by offering prompts, explanations, and feedback. However, unlike human interaction, AI scaffolding requires careful monitoring to ensure that it supports rather than replaces meaningful engagement.

2.4 EAP Materials Development and Evaluation

a) Traditional Approaches vs. Digital Materials

EAP materials have traditionally been designed by subject experts, focusing on structured texts,

controlled exercises, and discipline-specific language features. With the rise of digital technologies, there has been a shift toward more dynamic and interactive materials, including multimedia resources and adaptive platforms. Digital materials offer flexibility and accessibility, enabling learners to engage with content in diverse ways. However, they also require critical evaluation to ensure quality and relevance.

b) Needs Analysis and Authenticity in Academic Contexts

A central principle in EAP is the alignment of materials with learners' academic needs. Needs analysis involves identifying learners' linguistic, cognitive, and contextual requirements to ensure that materials are relevant and purposeful. Authenticity is equally important, as learners benefit from exposure to real academic texts and tasks that reflect actual disciplinary practices. AI-generated materials have the potential to enhance both relevance and authenticity by tailoring content to specific contexts, though concerns about accuracy and depth remain.

c) Criteria for Evaluating EAP Materials

Effective EAP materials are evaluated based on criteria such as relevance, authenticity, clarity, linguistic accuracy, cognitive challenge, and pedagogical value. In AI-assisted contexts, additional criteria—such as transparency of source, reliability of information, and adaptability—become significant. Evaluation frameworks must therefore evolve to account for the dynamic nature of AI-generated content.

2.5 Generative AI in Language Education

a) Role of Tools such as ChatGPT

Tools like ChatGPT have emerged as influential resources in language education, capable of generating essays, explanations, and practice tasks. In EAP settings, such tools assist in modelling academic discourse, supporting writing processes, and providing instant feedback. Their conversational nature allows for interactive learning experiences that can simulate academic dialogue.

b) AI in Content Generation, Adaptation, and Feedback

Generative AI supports multiple stages of the materials lifecycle. It enables rapid content generation, allowing teachers to create customised exercises and texts. It also facilitates adaptation,

modifying materials to suit different proficiency levels or disciplinary contexts. Furthermore, AI provides feedback, offering corrections and suggestions that support language development. These capabilities contribute to more responsive and flexible learning environments.

c) Challenges: Accuracy, Bias, Over-Reliance

Despite its benefits, AI presents notable challenges. Issues of accuracy arise when generated content contains errors or lacks depth. Bias in AI outputs can reflect underlying data limitations, potentially influencing learners' perspectives. Additionally, over-reliance on AI may reduce independent thinking and originality, particularly in academic writing contexts. These challenges highlight the need for critical engagement and guided use.

2.6 Teacher and Student Perspectives

a) Teacher Beliefs, Readiness, and Concerns

Teachers play a crucial role in mediating the use of AI in EAP. Their beliefs about technology influence how it is integrated into pedagogy. While many educators recognise the potential of AI to enhance teaching efficiency and student engagement, concerns persist regarding academic integrity, reliability, and the potential erosion of writing skills. Teacher readiness, including digital competence and pedagogical adaptability, significantly affects successful implementation.

b) Student Engagement, Autonomy, and Perceptions

Students generally perceive AI tools as accessible and supportive, particularly for writing and idea generation. AI can enhance engagement by providing immediate responses and interactive learning experiences. It also promotes autonomy, enabling learners to explore and refine their work independently. However, students' perceptions vary, with some viewing AI as a shortcut rather than a learning aid, which may impact the depth of cognitive engagement.

c) Gaps in Perception Between Stakeholders

Differences often emerge between teacher and student perspectives. Teachers may emphasise caution, accuracy, and ethical concerns, while students may prioritise convenience and efficiency. These divergent views can create challenges in implementation, underscoring the need for clear guidelines and shared understanding of AI's role in learning.

2.8 Research Gap

Although the literature acknowledges the transformative potential of Generative AI in language education, significant gaps remain. There is a limited number of comparative studies that simultaneously examine both teacher and student perspectives within EAP contexts. Furthermore, existing research tends to focus on isolated aspects of AI use, such as writing support or feedback, rather than addressing the entire lifecycle of EAP materials—development, adaptation, and evaluation. This lack of comprehensive analysis restricts understanding of how AI functions across different stages of pedagogical practice. Addressing these gaps is essential for developing informed, balanced, and effective approaches to AI integration in EAP.

III. RESEARCH METHODOLOGY

3.0 Research Design

The study was conducted over a period of 8 weeks. It adopted a mixed-method, descriptive, and exploratory research design to capture both measurable trends and in-depth perspectives regarding the use of Generative AI in EAP materials. The mixed-method approach integrated quantitative data (e.g., survey responses) with qualitative insights (e.g., interviews and discussions), enabling a comprehensive understanding of participant experiences. The descriptive component focused on documenting existing practices and perceptions, while the exploratory dimension investigated emerging patterns in the development, adaptation, and evaluation of AI-assisted EAP materials. This design was particularly suitable given the evolving nature of AI in education, where established frameworks are still developing.

3.1 Participants

The study involved two key groups: EAP teachers and EAP students. Teachers were drawn from secondary or tertiary institutions, with varying levels of experience in language instruction and technology integration. Their inclusion provided insights into pedagogical decision-making and professional readiness.

The student participants represented learners engaged in EAP courses, reflecting diverse proficiency levels and academic backgrounds. Their experiences and perceptions were central to understanding how AI influenced engagement, autonomy, and learning outcomes. A purposive

sampling method was employed to ensure that participants had prior exposure to AI tools, thereby enhancing the relevance of the data collected.

C. Data Collection Tools

a) Questionnaires (Perceptions and Attitudes)
Structured questionnaires were used to gather quantitative data on participants' attitudes toward AI-assisted EAP materials. Items were designed using Likert scales to measure dimensions such as usefulness, ease of use, trust, and perceived impact on learning.

b) Interviews (Teachers and Students)
Semi-structured interviews were conducted with both teachers and students to explore their experiences in greater depth. These interviews allow participants to elaborate on their views regarding the effectiveness, challenges, and ethical implications of AI use.

c) Focus Groups
Focus group discussions provided a platform for collective reflection, enabling participants to share and compare experiences. This method was particularly useful for identifying common themes and divergences in perception.

d) Sample AI-Generated EAP Materials
AI-generated materials, produced using tools such as ChatGPT, were used as artefacts for evaluation. These included essays, comprehension tasks, and writing prompts. Both teachers and students were asked to assess these materials based on predefined criteria such as relevance, accuracy, and pedagogical value.

D. Procedure

The research was conducted in a systematic, phased manner to capture both the process and outcomes of integrating Generative AI in EAP classrooms. Initially, participants were introduced to AI tools such as ChatGPT through guided orientation sessions. During this phase, students and teachers were familiarised with key functions, including prompt formulation, text generation, editing, and feedback mechanisms. Demonstrations and hands-on practice ensured that participants developed a basic level of digital competence and confidence in using the tools. Following this, the study progressed to the material development and adaptation stage. Teachers and students engaged in structured tasks that required

them to generate EAP materials such as academic essays, comprehension passages, and writing prompts using AI. They were also encouraged to adapt these materials by modifying language complexity, adjusting content for specific disciplines, and aligning tasks with varying proficiency levels. This phase emphasised active engagement, critical thinking, and contextual relevance.

In the subsequent evaluation phase, participants critically assessed AI-generated materials using predefined criteria, including accuracy, coherence, relevance, and pedagogical value. Teachers focused on instructional effectiveness and academic rigour, while students evaluated usability, clarity, and engagement.

Throughout the procedure, data were systematically collected through questionnaires, classroom observations, and group discussions. This multi-layered approach ensured a comprehensive understanding of participant interactions, perceptions, and the overall impact of AI integration.

IV. DATA ANALYSIS

3.0 Data Analysis of Questionnaires

Quantitative data from questionnaires were analysed using descriptive statistics, including means, percentages, and standard deviations, to identify general trends in perceptions and attitudes. Comparative analysis was conducted to examine differences between teacher and student responses. Qualitative data from interviews and focus groups were analysed using thematic analysis, involving coding, categorisation, and identification of recurring themes. This approach helped uncover patterns related to engagement, autonomy, trust, and challenges in AI use.

By combining quantitative and qualitative methods, the study ensured a holistic and nuanced understanding of how Generative AI was perceived and utilised in the development, adaptation, and evaluation of EAP materials.

3.1 GenAI in EAP Materials Lifecycle

a) Development

In the development phase, Generative AI was actively used to generate academic texts, exercises, and instructional prompts tailored to EAP contexts. Tools such as ChatGPT enabled both teachers and students to produce essays, reading passages, comprehension questions, and writing tasks with relative ease and efficiency. The analysis revealed

differing perceptions between teachers and students regarding the quality and usefulness of these materials. Teachers generally evaluated AI-generated content with caution, focusing on accuracy, coherence, and pedagogical appropriateness. In contrast, students tended to value the immediacy, clarity, and accessibility of the generated materials, often perceiving them as helpful starting points for learning. While both groups acknowledged the utility of AI in reducing workload and supporting idea generation, teachers emphasised the need for careful review and modification to ensure academic rigour.

b Adaptation

During the adaptation stage, AI was utilised to customise EAP materials according to learners' proficiency levels and specific academic needs. Teachers and students used AI tools to simplify complex texts, expand content for advanced learners, and adjust vocabulary and structure to suit varying levels of comprehension. This process demonstrated the flexibility of AI in creating differentiated learning materials.

In addition to linguistic adaptation, participants engaged in cultural and contextual adjustments, modifying AI-generated content to align with local academic expectations and classroom realities. Teachers were particularly attentive to ensuring that examples, references, and discourse styles were contextually appropriate. Students, on the other hand, focused on making materials more relatable and understandable. The findings indicated that while AI facilitated rapid adaptation, human intervention remained essential to ensure relevance, sensitivity, and accuracy.

c). Evaluation

In the evaluation phase, both teachers and students assessed AI-generated EAP materials using a range of criteria, including accuracy, relevance, coherence, usability, and pedagogical value. Teachers tended to adopt a more analytical and critical approach, carefully examining the linguistic accuracy, alignment with learning objectives, and overall instructional effectiveness of the materials. Students, however, prioritised factors such as clarity, ease of understanding, and immediate usefulness for completing tasks.

Notable differences in judgment were observed between the two groups. Teachers were more likely to identify subtle inaccuracies, inconsistencies, or lack of depth in AI-generated content, whereas

students often accepted such materials at face value unless explicitly prompted to critique them. This divergence highlighted the importance of developing students' evaluative skills when engaging with AI. Overall, the evaluation stage underscored that while AI can support material creation and adaptation, its outputs require critical scrutiny to ensure quality and reliability in academic contexts.

V. FINDINGS AND DISCUSSION

5.0 Comparative Analysis of Teacher and Student Perspectives

The findings revealed both convergence and divergence in how teachers and students perceived the use of Generative AI in EAP materials. Teachers approached AI with a pedagogical lens, prioritising accuracy, coherence, and alignment with learning objectives. They viewed AI as a supportive tool that required careful moderation and critical oversight. In contrast, students tended to adopt a more pragmatic and utilitarian perspective, valuing AI for its speed, accessibility, and ability to simplify complex tasks. While both groups recognised the efficiency of tools such as ChatGPT, their evaluations differed in terms of depth and critical engagement.

5.1 Alignment and Divergence in Perceptions

There was a notable alignment between teachers and students in acknowledging the benefits of AI, particularly in terms of time-saving, idea generation, and accessibility of resources. Both groups agreed that AI could enhance the process of developing and adapting EAP materials. However, significant divergence emerged in their concerns and evaluative approaches. Teachers expressed reservations regarding the reliability, potential inaccuracies, and ethical implications of AI-generated content. Students, on the other hand, were less critical and more inclined to trust the outputs, often focusing on immediate usability rather than long-term learning implications. This gap highlighted the need for explicit instruction in critical evaluation and responsible AI use.

5.2 Impact on Learner Autonomy and Engagement

The integration of AI had a dual impact on learner autonomy and engagement. On one hand, it enhanced engagement by providing interactive, responsive, and easily accessible support, which encouraged students to participate more actively in learning tasks.

Students reported increased confidence in attempting academic writing and problem-solving activities, suggesting a positive influence on autonomy. On the other hand, instances of over-reliance indicated that autonomy could be compromised when students depended excessively on AI for answers without engaging in independent thinking. The findings suggest that autonomy is strengthened when AI is used as a scaffold for learning, but weakened when it becomes a substitute for cognitive effort.

5.3 Pedagogical Implications

The study underscores the importance of intentional pedagogical design in integrating AI into EAP contexts. Teachers must play an active role in guiding students to use AI critically, incorporating tasks that require analysis, evaluation, and reflection. Instruction should emphasise the process of learning, encouraging students to question, modify, and justify AI-generated content. Additionally, the findings highlight the need for teacher training and student digital literacy development, ensuring that both groups can navigate AI tools effectively and responsibly. Ultimately, the pedagogical value of AI lies not in its ability to generate content, but in how it is used to enhance higher-order thinking and meaningful learning.

5.4 Educational Implications

The integration of Generative AI in EAP teaching practices requires a structured and reflective approach. AI should be embedded within task-based and inquiry-oriented activities that promote academic writing, analysis, and critical engagement rather than mere content generation. Teacher training is essential to equip educators with the skills to design effective prompts, evaluate AI-generated outputs, and guide students in meaningful use. At the same time, developing students' digital literacy is crucial so they can engage with AI tools critically and responsibly. Emphasis should also be placed on enhancing student agency, encouraging learners to actively adapt, critique, and personalise AI-generated materials rather than passively accepting them.

5.5 Ethical Considerations

The use of AI in EAP raises important ethical concerns. Academic integrity must be maintained by clearly defining acceptable AI-assisted writing practices and discouraging unacknowledged use. Data privacy is another key consideration, requiring careful selection of platforms and awareness of how

user data is handled. Additionally, transparency in the use of AI-generated materials is essential, ensuring that both teachers and students acknowledge the role of AI in content creation and adaptation. These measures promote responsible and ethical engagement with technology.

5.6 Limitations of the Study

The study is limited by its context-specific nature, as findings are based on particular institutional settings and may not be universally applicable. The relatively small sample size further restricts generalisation. Moreover, the results are influenced by the specific AI tool used, highlighting tool-specific limitations that may vary across different platforms and technological environments.

5.7 Recommendations for Future Research

Future research should focus on longitudinal studies to examine how perceptions of AI evolve over time and how sustained use affects learning outcomes. Cross-institutional comparisons can provide broader insights into how different educational contexts influence AI integration. Additionally, further exploration of advanced AI integration models—including adaptive systems and scaffolded learning environments—can contribute to more effective and pedagogically sound applications in EAP.

5.8 Conclusion

The study highlights that AI integration offers significant potential for enhancing EAP learning, particularly in improving accessibility, engagement, and material development processes. It contributes to both EAP and educational technology research by providing insights into how teachers and students perceive and utilise AI tools. Ultimately, the effective use of AI depends on achieving a balance between technological support and human agency. While AI can facilitate learning, it must be guided by critical thinking, ethical awareness, and active learner participation to ensure meaningful and sustainable educational outcomes.

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