

AI-based English module needs analysis for Indonesian content creator

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ABSTRACT

The rapid growth of Indonesia's digital economy has increased the importance of English proficiency for digital content creators. However, many digital content creators still lack the specific language skills required for global communication in this field. This study aims to identify the English language needs of digital content creators and to inform the development of an AI-based English module. A mixed-method design was employed, involving a questionnaire completed by 69 undergraduate students and interview with one English lecturer at the Collage of Multimedia (MMTC), Yogyakarta. The findings indicate that students perceive their English proficiency as moderate, with significant needs in productive skills, particularly pronunciation, speaking, and grammar for digital content task such as scripting and captioning. Students also demonstrate positive attitudes toward AI-assisted learning, especially for feedback and personalized practice, although concerns about over-reliance and ethical use remain. These results highlight the importance of integrating AI tools with authentic content creation tasks while maintaining pedagogical guidance and ethical awareness.



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1. Introduction

In the rapid growing digital world, Indonesia has become one of the world's most active social media users ([We Are Social, 2024](#)). This phenomenon positions content creation as a popular career path for young Indonesians ([Afianto et al., 2024](#)). Digital content creators have become influential in shaping public discourse and consumer culture. *The Creator Economy Report 2025* reveals that the number of digital content creators in Indonesia has skyrocketed (IDN Research Institute, 2025). The report also suggests that digital content creators play a pivotal role in the digital economy, primarily through marketing and promoting goods and services to international audiences ([Hollebeek et al., 2024](#)). Success in this field often requires proficiency in English, as global platforms, audiences, and digital tools are predominantly English-based.

While English has long been taught as a foreign language in Indonesia, the growing demands of professional communication have led to increased attention to English for Specific Purposes (ESP) ([Hutchinson & Waters, 1991](#)). In digital content creation, English is not merely an academic requirement but a practical skill for scriptwriting, captioning, subtitling, podcasting, and cross-cultural communication. However, existing ESP curricula have not fully addressed the specific communicative needs of this emerging professional group. A systemic needs analysis is therefore required to align language instruction with real-world digital practices ([Assassi & Bouaziz, 2025](#); [Tang, 2023](#)).

At the same time, Artificial Intelligence (AI) has introduced new possibilities for language learning. AI tools offer adaptive feedback, personalized learning paths, and interactive practice opportunities (Ganeesh & Rani, 2023; Liu et al., 2024). These applications enable students to practice pronunciation, receive instant grammar correction, and engage in interactive speaking activities. They also foster collaborative and authentic learning experiences by offering personalized learning paths and real-time feedback (Adil & Sakhamuri, 2024; Khatoon, 2024). The adoption of such technologies is often explained through frameworks such as the Unified Theory of Acceptance and Use of Technology (UTAUT), which highlights factors such as perceived usefulness and social influence (Venkatesh et al., 2003; Zaim et al., 2024).

Despite these developments, three gaps remain. First, most studies focus on general EFL contexts rather than specific professional groups. Second, research on AI in language learning rarely translates finding into ESP module design. Third, limited attention has been given to learners preparing for careers in digital content creation.

Existing research has primarily focused on general EFL contexts, classroom integration, or the adoption of AI tools by teachers. For example, Zaim et al. (2024) explored the integration of generative AI in Indonesian universities using UTAUT and Activity Theory. Their findings showed that performance expectancy and social influence strongly influence lecturers' adoption of generative AI, highlighting important institutional and pedagogical dynamics. However, this study emphasized the lecturers' perspective, leaving a gap in understanding students' specific needs for AI-assisted English learning in professional domains, such as digital content creation.

Furthermore, while studies have examined AI applications for language personalization and adaptive learning (Al-Smadi et al., 2024; Katonáné Gyönyörű, 2025; Tan et al., 2025), they have not addressed how these tools can be systematically designed into ESP modules that directly support content creators' real-world tasks, such as script writing, podcasting, and social media branding. Most prior studies overlook learners preparing for careers in digital communication and the creative industry (Chen, 2024; He et al., 2025).

Therefore, this study aims to investigate the English language needs of digital content creators in Indonesia and to explore their attitudes toward AI-assisted learning. By combining ESP needs analysis with technology adoption perspectives, this study seeks to provide a foundation for developing an AI-based English module tailored to this emerging professional domain.

1.1 Digital Technology Integration in English Language Teaching

English for Specific Purposes (ESP) occurred as a response to the growing recognition that language learning should be tailored to learners' specific academic or professional needs. Hutchinson and Waters (1991) defined ESP as an approach where all decisions about content and method are based on the learner's reasons for learning. Need analysis plays a central role in ESP, distinguishing between Present Situation Analysis (PSA) and Target Situation Analysis (TSA). PSA assesses learners' existing competences, while TSA identifies the skills required in their target professional or academic contexts. The gap between PSA and TSA provides the foundation for curriculum design (Basturkmen, 2010; Long, 2005).

Over time, scholars have refined and operationalized frameworks for needs analysis. Brown (2016) emphasized the importance of combining quantitative surveys with qualitative methods to capture learners' perspectives more comprehensively. Richards (2017) emphasized the importance of curriculum alignment with learners' professional discourse communities, while Mackey and Gass (2022) provided methodological guidelines for designing reliable instruments in second language research. In the context of digital content creators, the needs analysis must consider not only general English proficiency but also specialized discourse practices related to digital media, such as writing captions, developing scripts, and engaging in cross-cultural online communication.

1.2. AI in Language Learning: Opportunities and Risks

The rise of Artificial Intelligence (AI) has introduced new opportunities for language learning. AI tools such as *Grammarly*, *ChatGPT*, and *Duolingo* offer learners immediate feedback, adaptive scaffolding, and personalized learning paths. These tools have enhanced grammar accuracy, vocabulary acquisition, and speaking fluency (Ganeesh & Rani, 2023; Khatoon, 2024). Conversational AI has gained traction to support autonomous practice while maintaining high learner motivation (Wang et al., 2025).

However, scholars also caution against over-reliance on AI in education. (Qin et al., 2020) notes that while AI tools can facilitate efficiency, they may also risk diminishing learners' critical thinking skills if not integrated pedagogically. Similarly, concerns about data privacy, ethical use, and the reduction of human interaction in education have been widely discussed (Anagnostopoulou et al., 2024; Kastania, 2024; Raza et al., 2024). The debates suggest that AI should be treated not as a replacement for human instruction but as a complement that must be integrated strategically within sound pedagogical frameworks (Lyu et al., 2025).

The Indonesian context provides additional complexity. While urban learners have access to AI, rural schools and universities face infrastructural challenges that limit adoption (At-tamimy & Eloy, 2025; Sholeh et al., 2025). This digital divide highlights the importance of inclusivity in designing AI-based e-modules that are accessible across diverse educational contexts.

1.3. Technology Adoption and Learner Attitudes

The success of AI integration in education depends not only on technological availability but also on learners' and educators' attitudes. Two widely used frameworks, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), explain how perceived usefulness, ease of use, social influence, and facilitating conditions shape adoption. In higher education, studies confirm that trust in AI and perceptions of its relevance are crucial for successful uptake (Nazaretsky et al., 2022).

In Indonesia, recent research has applied these frameworks to explore AI adoption. Zaim et al. (2024), in a study published in *Computers and Education: Artificial Intelligence*, examined lecturers' adoption of generative AI for EFL pedagogy using UTAUT and Activity Theory. They found that performance expectancy and social influence significantly influenced behavioral intention. On the other hand, effort expectancy was not a significant factor. Interestingly, facilitating conditions were found to influence behavioral intention negatively. It suggests that satisfaction with existing resources reduced the perceived necessity for adopting new tools. This study highlights the complexity of AI adoption in higher education and underscores the importance of understanding both technological and human factors.

While (Zaim et al., 2024) share valuable insights into lecturers' perspectives, there remains a lack of research focusing on students' needs, especially those preparing for careers as digital content creators. The students' attitudes toward AI, their desired features, and their readiness for AI-supported learning must be systematically investigated to ensure effective curriculum design.

1.4. Linking ESP with AI Integration

The convergence of ESP and AI integration offers both theoretical and practical opportunities. From an ESP perspective, needs analysis provides a structured way to identify linguistic and contextual requirements for specific learner groups (Hutchinson & Waters, 1991; Long, 2005). From a technology adoption perspective, models such as UTAUT and Activity Theory illuminate the psychological and social factors influencing technology use (Nazaretsky et al., 2022; Zaim et al., 2024). By combining these frameworks, researchers can design e-modules that are both linguistically relevant and technologically acceptable.

For digital content creators, who must balance creativity, branding, and international communication, AI-based tools can provide critical scaffolding. Grammar correction and vocabulary builders enhance accuracy; pronunciation feedback supports oral fluency; and chatbot-based speaking practice offers authentic interaction. Integrating these tools into a project-based module not only addresses linguistic gaps but also prepares students for professional realities in the digital creative economy.

In sum, the literature suggests that while AI has transformative potential, its integration into ESP requires careful alignment with learners' context, readiness, and professional goals. This study builds on existing research by extending ESP needs analysis into the domain of digital content creation in Indonesia, while also responding to recent calls for more student-centered investigations into AI adoption in higher education.

2. Method

2.1. Research Design

This study employed a mixed-methods needs analysis design, combining quantitative survey data with qualitative insights from interviews. This approach is appropriate for capturing both learners' language need and educators' perspective in ESP contexts (Basturkmen, 2010; Hutchinson. & Waters, 1991). The

integration of both methods enabled a comprehensive understanding of students' learning needs as well as lecturers' pedagogical perspectives.

2.2. Participant

The participants included 69 undergraduate students from the Information and Communication Management Program at the College of Multimedia (MMTC), Yogyakarta, Indonesia, and one English lecturer from the same program. The students' ages ranged from 17 to 20 years (40 male, 29 female). They were selected as they represent prospective digital content creators within a communication-focused academic program. The lecturer, with more than five years of teaching experience, was selected to provide expert pedagogical insights on integrating AI into English curricula. It is acknowledged that the inclusion of one lecturer limits the diversity of educator perspectives.

2.3. Instrument

Two instruments were used. The first was a questionnaire which was distributed to students via *Google Forms*. It was organized into four sections evaluated on a 5-point Likert scale: current English proficiency (7 items), requisite skills for content creation (6 items), preferred training attributes (8 items), and attitudes towards AI in English education (8 items). Furthermore, two open-ended questions were incorporated to elicit students' concerns and recommendations concerning AI-based modules. The questionnaire was modified from recognized ESP needs analysis frameworks ([Hutchinson T. & Waters A., 1991](#); [Tang, 2023](#)) and received validation from two language instruction experts. Cronbach's alpha reliability assessment demonstrated substantial internal consistency ($\alpha = 0.92$).

The second tool was a semi-structured lecturer interview, intended to obtain more profound qualitative insights. The interview guide focused on three aspects: students' educational requirements, the opportunities and challenges associated with AI integration, and suggestions for module design. The interview was conducted in Indonesian, audio-recorded with permission, and subsequently transcribed for analysis.

2.4. Data Collection

Data were collected in September 2025. The questionnaire was electronically disseminated to students during their education, guaranteeing voluntary participation and anonymity. The lecturer's interview was held in person and lasted around 45 minutes. Ethical approval was obtained from the MMTC program office, and informed consent was obtained from all participants.

2.5. Data Analysis

The quantitative results from the questionnaire were analyzed using descriptive statistics (mean scores, standard deviations, and percentage distributions) to identify patterns in student requirements and preferences. Bar charts were employed to depict essential findings. Qualitative responses from open-ended questions and the lecturer interview were subjected to thematic analysis ([Braun & Clarke, 2006](#)), facilitating the identification of recurring themes including authenticity, AI readiness, and ethical concerns. The triangulation of quantitative and qualitative findings enhanced the validity of the results ([Creswell & Clark, 2018](#)).

3. Findings and Discussion

The results of this study are presented in two parts: the quantitative findings from the student survey and the qualitative insights from the lecturer interview. Together, these findings provide a comprehensive picture of current English abilities, skill priorities, training preferences, and perceptions of AI in the context of English learning.

3.1. Data Analysis on Current English Abilities

Present English Proficiency [Figure 1](#) illustrates students' self-evaluation of their present English proficiency. The results indicate a moderate overall ability, with the highest score in reading and listening comprehension ($M = 3.23$) and the lowest in grammar accuracy ($M = 2.74$) and public speaking confidence ($M = 2.78$).

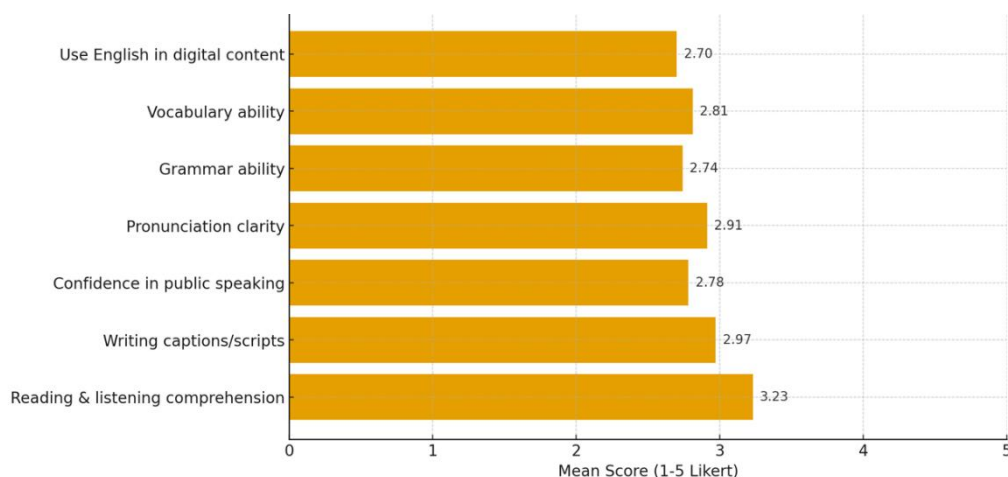


Fig.1 Self-assessed current English ability for digital content creation

These findings suggest that while students are relatively comfortable with receptive skills, they face challenges in productive tasks such as speaking and grammar use. This echoes prior studies, which have shown that productive skills remain the weakest area for EFL learners in Indonesia (Ratnasari, 2020).

3.2. Needed Skills for Digital Content Creation

Figure 2 illustrates that students expressed a very high demand across all skill areas, with mean scores exceeding 4.0. The strongest needs were for pronunciation for voice-over and presentations ($M = 4.30$), speaking for public presentation ($M = 4.23$), and grammar for captions and descriptions ($M = 4.23$). Vocabulary specific to social media and marketing ($M = 4.20$) was also prioritized.

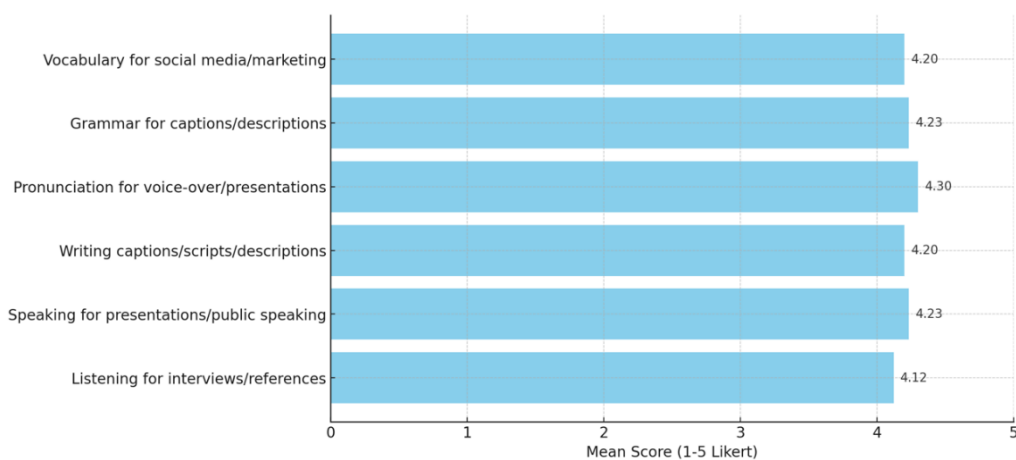


Fig.2 Needed skills for digital content creation

These results confirm that students are aware of the professional relevance of productive skills for content creation, particularly oral communication and accuracy in written digital texts.

3.3. Preferred Training Features

As shown in Figure 3, students reported strong preferences for AI-driven training features. The most valued were AI grammar and vocabulary feedback ($M = 4.22$), pronunciation training with AI feedback ($M = 4.20$), and grammar training for digital content ($M = 4.19$). Students also emphasized the importance of personalized learning paths ($M = 4.17$) and interactive speaking with AI chatbots ($M = 4.10$).

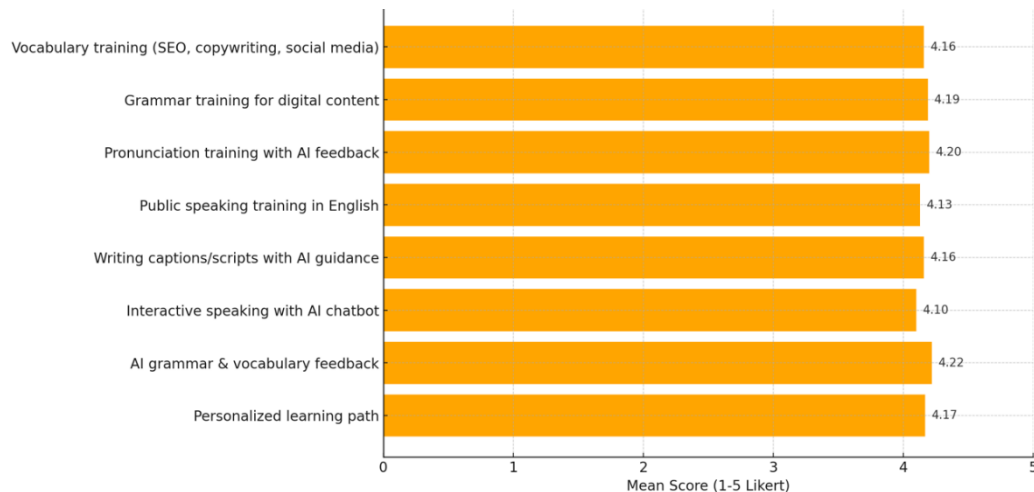


Fig.3 Preferred training features

These preferences suggest that students expect adaptive, feedback-oriented learning tools that align with real-world tasks in digital content creation.

3.4. Perceptions of AI in English Learning

Figure 4 illustrates students' perceptions of AI. Findings indicate that students are AI-ready, with high prior usage of tools such as ChatGPT and Grammarly ($M = 4.35$). They strongly valued pronunciation feedback ($M = 4.35$) and grammar correction ($M = 4.35$) and reported feeling comfortable and confident learning with AI ($M = 4.12$).

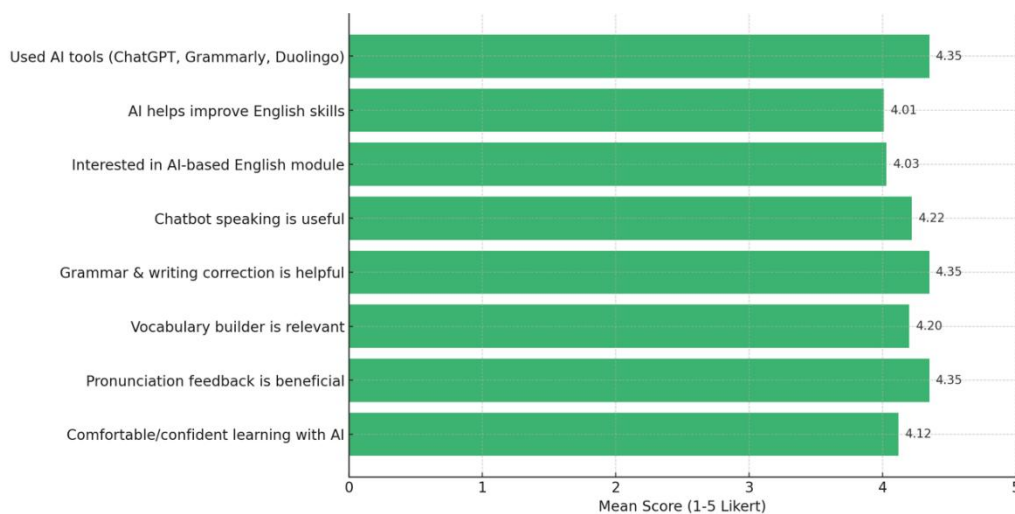


Fig.4 Perceptions of AI in English learning

These results reflect the global trend of increasing learner openness to AI integration in language education (Khatoon, 2024; Raza et al., 2024).

3.5. Educator Insights on AI Use

The educator highlighted three major themes regarding AI integration. This is evident in Table 1. First, authenticity of content was emphasized, with AI expected to support real-world tasks such as scriptwriting, voice-over, and podcast narration. Second, AI was viewed as a supportive tool that can provide instant feedback and personalization but should function as scaffolding rather than replacing teachers. Finally, concerns were raised about challenges and risks, including over-reliance on AI, plagiarism, and uneven digital literacy among students. These insights underscore the importance of integrating ethics, authenticity, and critical digital literacy into any AI-based English module.

Table 1. Perceptions of AI in English Learning

Theme	Description
Authenticity of Content	Emphasizes real-world tasks such as script writing, voice-over, and podcast narration to ensure authentic content production.
AI as a Supportive Tool	Recognizes AI's role in providing instant feedback and personalization, but stresses that AI should act as scaffolding rather than replacing teachers.
Challenges & Risks	Identifies risks of over-reliance on AI, plagiarism, and uneven digital literacy among students as challenges for implementation.

Furthermore, the five findings were analyzed using established literature and theoretical frameworks in ESP and AI-assisted language learning. The discourse emphasizes critical themes, including students' need for productive skills, preparedness for AI, lecturer viewpoints, and the overarching pedagogical and theoretical implications

3.6. Productive Skills as Core Needs

The survey indicated that students evaluated their present English proficiency as moderate, with significant deficiencies in grammar, pronunciation, and speaking confidence. Simultaneously, students recognized productive skills as their foremost concerns, including pronunciation for voice-over, grammar for captions, and speaking for presentations. These findings affirm the significance of productive abilities in English for Specific Purposes related to digital media. Prior studies have indicated that Indonesian EFL learners generally exhibit superior performance in receptive skills compared to productive skills (Mortini et al., 2025). This study emphasizes the paramount importance of productive abilities, necessitating the adaptation of ESP curricula to meet the communicative requirements of digital content creation, where performance and precision significantly influence professional results (Assassi & Bouaziz, 2025; Tang, 2023).

3.7. AI Readiness and Learner Expectations

Students indicated significant familiarity with AI tools and expressed robust preferences for AI-driven feedback functionalities. They appreciated grammatical correction, pronunciation feedback, and chatbot-assisted speaking practice, indicating a willingness to adopt technology in their learning process. These findings align with those of Al-Smadi et al. (2024) and Khatoon (2024), who found that AI applications enhance learner confidence and motivation by providing prompt, personalized feedback. Furthermore, students' comfort and confidence in AI align with global research, which indicates that digital-native learners exhibit a greater willingness to experiment with AI for educational purposes (Adil & Sakhamuri, 2024; Chen, 2024; Crompton et al., 2024; He et al., 2025; Liu et al., 2024). This study enhances existing literature by contextualizing AI readiness within the ESP framework of digital content creation, proposing that AI integration can directly facilitate professional skill development.

3.8. Educator Perspective: Balancing Innovation with Authenticity

The educator underscored authenticity, scaffolding, and ethics, providing a crucial counterbalance to student enthusiasm. Students perceived AI as an enabler, but the educator emphasized possible concerns such as plagiarism, excessive dependence, and disparities in digital proficiency. This viewpoint aligns with Zaim et al. (2024), who demonstrated that the adoption of AI by lecturers is influenced by institutional and social factors, while also highlighting pedagogical issues related to authenticity and ethics. Similarly, Raza et al. (2024) and Viberg et al. (2024) argue that successful AI adoption in education requires attention to accountability and trust. By integrating lecturer concerns, this study reinforces the need for AI-based modules that maintain human mediation and critical awareness, ensuring that technology enhances rather than replaces authentic learning.

3.9. Theoretical Implications

The results have substantial implications for both ESP theory and technology adoption models. The findings for ESP underscore the significance of requirements analysis (Basturkmen, 2010; Hutchinson & Waters, 1991) while broadening its application to the nascent field of digital content development. This signifies an extension of English for Specific Purposes beyond conventional sectors, such as business or tourism, establishing the creative economy as a valid ESP domain. The findings regarding technology adoption align with the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, et al., 2003; Venkatesh, Smith, et al., 2003; Zaim et al., 2024), specifically in relation to performance expectancy (students anticipate that AI will enhance accuracy) and social influence (peers

and digital trends affect students). The study elucidates the interplay between adoption variables and professional language requirements, indicating that the propensity to embrace AI is linked to objectives in content development.

3.10. Practical Implications

This study offers practical insights for curriculum developers and educators in higher education. An AI-driven English module for digital content creators must focus on enhancing productive skills, specifically pronunciation, speaking, grammar, and specialized vocabulary pertinent to professional communication requirements. AI tools, including chatbots, grammar checkers, and pronunciation feedback systems, can be included in genuine content creation activities such as scriptwriting, podcasting, and digital campaign writing. The module must incorporate digital ethics and critical AI literacy to address potential issues such as plagiarism, originality, and the ethical use of technology. The use of a hybrid pedagogy is advised, integrating the efficacy of AI-generated feedback with instructor facilitation to guarantee authenticity and critical engagement.

4. Conclusion

This study conducted a needs analysis of students and a lecturer from the Information and Communication Management Program at MMTC Yogyakarta to inform the development of an AI-based English module for digital content creators. The findings showed that students reported moderate English proficiency, with receptive skills being stronger than productive ones. However, they identified productive skills especially pronunciation, speaking, grammar, and vocabulary for social media as their top priorities for professional development. Students also demonstrated strong readiness and positive attitudes toward AI, valuing instant grammar correction, pronunciation feedback, chatbot practice, and personalized learning.

The lecturer supported AI integration but emphasized that modules must maintain authenticity, treat AI as a supportive scaffold rather than a replacement, and address risks such as plagiarism, over-reliance, and digital literacy gaps. Taken together, the findings underscore the need for AI-based modules that not only enhance linguistic accuracy and fluency but also foster critical awareness and promote ethical use.

The findings of this study suggest several important implications for curriculum designers and educators. First, module content should prioritize the development of productive skills, ensuring that English learning is directly aligned with real-world content creation tasks. Second, AI tools such as chatbots, grammar checkers, and pronunciation applications should be meaningfully integrated into authentic projects, including podcasts, video scripts, and social media campaigns. Third, it is crucial to incorporate training on digital ethics and critical AI use so that students develop originality, avoid plagiarism, and engage responsibly with emerging technologies. Finally, the study emphasizes the importance of adopting a blended pedagogical approach that combines the efficiency of AI-generated feedback with the guidance of teachers, thereby sustaining both authenticity and creativity in the learning process.

The findings reinforce ESP theory by extending needs analysis into the creative economy domain, demonstrating its adaptability beyond traditional fields. The study also contributes to technology adoption research, showing how UTAUT factors such as performance expectancy and social influence intersect with professional skill needs in ESP. By combining student and lecturer perspectives, the research offers a more holistic framework for AI adoption in language education.

Further studies should pilot and evaluate the proposed module in classroom settings, examining learning outcomes and student performance over time. Expanding the sample to multiple institutions across Indonesia would enhance generalizability. Comparative studies across creative industries—such as journalism, digital marketing, and design—could also provide deeper insights into how AI-based ESP modules support different professional contexts.

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Declarations

- Author contribution** : Prayudha conceptualized the study, designed the research framework, conducted the data analysis, and led the manuscript writing and revision process. Raden Muhammad Ali contributed to data collection, literature review, and the development of research instruments. Anang Masduki provided methodological guidance, supervised the research process, and reviewed the final manuscript. Dio Fahmi Alfaridhi assisted in data visualization, formatting, and proofreading of the final version of the paper. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work.
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- Ethical declaration** : We as authors acknowledge that this work has been written based on ethical research that conforms with the regulations of our university and that we have obtained the permission from the relevant institute when collecting data.
- We support ELTEJ in maintaining high standards of personal conduct, practicing honesty in all our professional practices and endeavors.
- Additional information** : No additional information is available for this paper.

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