

Students' Perspectives on the Use of Chat-GPT in the Fields of Phonology, Morphology, and Syntactics in Arabic Language Learning

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Abstract

This study aims to explore the use of ChatGPT in learning Arabic phonology, morphology, and syntax from the perspective of students of the Arabic Language Education (PBA) Study Programme. Using a qualitative approach with a literature review method, this research analyses data from various academic sources. The results show that ChatGPT is effective in helping students understand linguistic aspects of Arabic, such as pronunciation of hijaiyah letters, word derivation, and i'rab analysis. The technology improves learning efficiency by providing instant, interactive and adaptive answers to students' needs, saving time and money. However, challenges such as limited understanding of cultural context and potential technical errors if questions are not specific remain. Therefore, ChatGPT should be used as an additional tool, not a replacement for traditional methods. This research shows that ChatGPT integration can create a more innovative and personalised learning experience, but it must be implemented carefully.

Keywords:

Arabic Language Education, ChatGPT, Morphology, Phonology, Syntax.

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Abstrak

Penelitian ini bertujuan untuk mengeksplorasi penggunaan ChatGPT dalam pembelajaran fonologi, morfologi, dan sintaksis bahasa Arab dari perspektif mahasiswa Program Studi Pendidikan Bahasa Arab (PBA). Menggunakan pendekatan kualitatif dengan metode kajian literatur, penelitian ini menganalisis data dari berbagai sumber akademik. Hasilnya menunjukkan bahwa ChatGPT efektif membantu memahami aspek linguistik bahasa Arab, seperti pelafalan huruf hijaiyah, derivasi kata, dan analisis i'rab. Teknologi ini meningkatkan efisiensi pembelajaran dengan menyediakan jawaban instan, interaktif, dan adaptif sesuai kebutuhan mahasiswa, sehingga menghemat waktu dan biaya. Namun, tantangan seperti keterbatasan pemahaman konteks budaya dan potensi

kesalahan teknis jika pertanyaan tidak spesifik tetap ada. Oleh karena itu, ChatGPT sebaiknya digunakan sebagai alat bantu tambahan, bukan pengganti metode tradisional. Penelitian ini menunjukkan bahwa integrasi ChatGPT dapat menciptakan pengalaman belajar yang lebih inovatif dan personal, namun tetap harus diterapkan dengan cermat.

Kata kunci:

Pendidikan Bahasa Arab, ChatGPT, Morfologi, Fonologi, Sintaksis.

1. Introduction

ChatGPT, a leading artificial intelligence (AI) model developed by OpenAI, has gained significant global attention since its launch in November 2022. Within the first two months after its launch, ChatGPT managed to accumulate 100 million monthly active users, making it one of the fastest growing platforms in the history of technology (Tlili et al., 2023). This popularity is attributed to ChatGPT's ability to understand and generate text that is highly human-like, attracting a wide range of people, from students to professionals in various industries. However, despite its popularity, concerns have grown regarding the ethical and practical issues that come with it. One of the main concerns is the risk of plagiarism, where users may utilise AI to generate content without giving credit to the original source (Abdaljaleel et al., 2023). Additionally, there are concerns about the potential misuse of AI to spread false information or disinformation, which could affect public opinion and social stability (Shahzad et al., 2025).

On the other hand, the survey shows that a large number of respondents remain optimistic about the future of AI. They believe that it will create new opportunities for innovation, increase efficiency across sectors, and open the door to more inclusive and personalised learning (Sallam et al., 2023). Thus, while the challenges are complex, the positive potential of AI such as ChatGPT cannot be ignored, and discussions are ongoing to ensure its responsible use for the common good. Recent research has also highlighted challenges in translation accuracy when using ChatGPT, specifically focussing on translation from Indonesian to Arabic. The research noted significant weaknesses in AI translation regarding linguistic structure (Abdaljaleel et al., 2023).

While providing valuable insights into translational errors, the study identified a large gap in research regarding the perspectives of students in Arabic Language Education (PBA) programmes regarding the use of ChatGPT in linguistic areas such as phonology, morphology and syntax (Al-Mughairi & Bhaskar, 2024). Understanding the views of these students is crucial as they represent the main group interacting with this technology in Arabic language learning. Interacting with the perspectives of PBA students can illuminate their specific needs and challenges, which can ultimately pave the way for improving the effectiveness of ChatGPT in educational contexts (Bazelais et al., 2024).

To address how ChatGPT can aid the absorption of complex linguistic concepts,

this study aims to explore the perceptions of Arabic Language Education (PBA) students regarding the use of ChatGPT in learning phonology, morphology, and syntax. The research questions include: firstly, what is the students' conceptual understanding of the use of ChatGPT in this area of linguistics? Second, what motivates students to choose ChatGPT as a learning resource over other traditional methods? Finally, what techniques or approaches do they use with ChatGPT to improve their understanding of these subjects? The importance of this research lies in its potential to uncover how artificial intelligence (AI) technologies, such as ChatGPT, can serve as innovative tools to help learners understand complex linguistic frameworks, which are often challenging in the Arabic language learning process (Le, 2023).

By knowing students' perspectives in depth, these findings will not only provide insights into the effectiveness of ChatGPT as a learning aid but may also inspire new strategies to create learning experiences that are more engaging, adaptive, and suited to individual needs (Duong, 2024). In addition, the results of this study have the potential to lead to the development of a more modern and inclusive Arabic language learning model, where AI technology is optimally utilised to support the educational process. Thus, this research can make a significant contribution to the world of Arabic language education, both in terms of theory and practice, thus ultimately improving the quality of learning and students' ability to understand essential linguistic concepts.

2. Methods

Research that aims to analyse the perspectives of Arabic Language Education (PBA) students in using ChatGPT for the fields of phonology, morphology, and syntax needs to use a qualitative approach with a literature review because the main focus is to understand the phenomenon in depth through the interpretation of theories and previous research results (Fadli, 2021). This approach is relevant because the research does not involve collecting empirical data directly from respondents, but rather relies on secondary sources such as scientific articles, books, journals, and related documents (Fitriani & Setiyowati, 2024). With a qualitative approach based on literature review, researchers can explore theoretical concepts about the use of artificial intelligence such as ChatGPT in Arabic language learning, as well as understand how this technology affects students' understanding in the three linguistic aspects (Aathifah Al Farros & Masrun, 2024).

The data collection techniques used included documentation studies, which involved identifying, collecting and analysing literature relevant to the research topic (Sugiono, 2024). Data were obtained from online and offline sources, such as international journals, previous research results, theses, dissertations, and other academic publications. In addition, researchers can also use systematic searches in scientific databases to ensure the accuracy and reliability of sources (Sari, Astuti, Zamanda, Restu, & Fadilla, 2024). Through thematic analysis, information from the literature was collated and interpreted to answer the research questions, resulting in a

comprehensive picture of PBA students' perspectives on the utilisation of ChatGPT in the context of phonology, morphology and syntax.

In this study, the validation technique focused on the validity of the data obtained through the literature review instrument. Given the qualitative approach used, validation is carried out by ensuring that the literature sources used as references are reliable, relevant, and have academic authority (Sari, Astuti, Zamanda, Restu, & Fadilla, 2024). This validation includes the selection of reputable scientific journals, textbooks from expert authors in the field of linguistics, and official documents that support the research topic (Fadli, 2021). Data validity is also strengthened through theoretical triangulation techniques, namely by comparing and confirming information from various

sources to ensure data suitability and consistency (Sari et al., 2024). In addition, the process of critically evaluating the literature used is an important step in ensuring that the information retrieved has been peer-reviewed or comes from credible academic institutions. In the absence of direct intervention from human respondents, validation in this study relies entirely on the quality of the literature sources. Therefore, the researcher ensured that each source used was rigorously selected based on criteria such as year of publication, author affiliation, and academic impact of the source. This validation technique aims to ensure that the research results have a strong theoretical foundation and can be scientifically accounted for.

This research adopts a qualitative method by relying on literature review as the main technique in data analysis. The focus of the research is directed at exploring the perspectives of Arabic Language Education (PBA) students regarding the utilisation of ChatGPT in three linguistic aspects, namely phonology, morphology, and syntax. The analysis process began with the collection of relevant literature sources, such as scientific journals, academic publications, and other theoretical references related to the research topic (Aathifah Al Farros & Masrun, 2024). The data obtained was then critically evaluated to ensure the reliability of the information, followed by a synthesis of the findings to identify emerging patterns or trends related to the use of artificial intelligence technology in Arabic language learning. A deductive-inductive approach was used to link the results of the literature review with established theoretical frameworks (Fadli, 2021), thus enabling in-depth and comprehensive interpretations. Theoretical triangulation was also applied as a step to validate the conclusions, by comparing the research findings with existing Arabic linguistic concepts. Through these analytical techniques, the research not only provides insights into the dynamics of ChatGPT usage by university students but also contributes to the development of innovative and modern technology-based Arabic language learning methodologies (Sari et al., 2024).

3. Result and Discussion

ChatGPT, as a language-based artificial intelligence (AI) model, has great potential in helping students of the Arabic Language Education (PBA) Study Programme

understand phonology, morphology and syntax. In the context of phonology, ChatGPT can be used to explain the Arabic sound system, such as the pronunciation of hijaiyah letters, harakat, tanwin, and qalqalah. For example, when students ask "كيفية نطق حرف "ض", ChatGPT can provide a detailed explanation of the tongue position, air pressure, and characteristics of the sound. Understanding phonology is very important for Arabic learners because phonology is the basis for mastering oral skills (Anwar & Ahyarudin, 2023). With ChatGPT's ability to provide interactive explanations, students can more easily visualise phonological concepts. For example, ChatGPT can provide a comparison between the sounds of ض and ظ, two letters that often confuse non-native learners. In addition, ChatGPT can also help students practice pronunciation through simulated dialogues. Although there is no empirical data to support that AI technology can improve phonological understanding by 30%, many studies show that AI technology has the potential to significantly improve students' language skills (Liu, 2023).

Morphology, as the study of word structure, has its own complexities in Arabic. Arabic is known for its unique word derivation system, where one root word can produce different forms of nouns, verbs, and adjectives through the process of adding prefixes, insertions, or suffixes. ChatGPT can help students understand this mechanism by providing direct morphological analysis. For example, when students ask "كيف تُشكّل كلمة "كاتب", ChatGPT can explain that the word changes into كاتب through the process of internal vowel change. Empirical data shows that the use of AI technology in language learning can improve students' comprehension (Mananay, 2024). This shows that ChatGPT can be an effective tool in learning the morphological aspects of Arabic.

Syntax, which is the study of sentence structure and sentence formation rules, has a central role in understanding Arabic in depth. In this context, ChatGPT can be used to help students understand syntactic patterns such as subject-predicate-object order (الفاعل-المفعول به-الفعل) as well as other grammatical rules. For example, when students ask "كيف يخرج الطالب من "صياغة الجملة الفعلية في اللغة العربية", ChatGPT can provide examples such as "خرج الطالب من المدرسة", where the subject (الطالب) comes before the predicate (خرج). Understanding syntax is very important for Arabic learners because it is the basis for mastering writing and speaking skills (Anwar & Ahyarudin, 2023). Empirical data shows that the use of AI technology in syntax learning improves students' ability to construct Arabic sentences. However, the specific figure of 40% is not supported by valid references in this case (Pack & Maloney, 2024).

ChatGPT was chosen as a tool in learning phonology, morphology and syntax because of its adaptive and interactive technological advantages. One of the main advantages of ChatGPT is its ability to process linguistic data quickly and accurately, so that it can provide instant answers to students. AI technologies such as ChatGPT have great potential in language education as they can provide immediate feedback without requiring the physical presence of a teacher (Xiao & Zhi, 2023). In addition, ChatGPT can be customised to suit students' individual needs, such as providing simple

explanations for beginners or in-depth analyses for advanced students. In the context of Arabic, with its high level of complexity, ChatGPT becomes an innovative solution to help students overcome their learning difficulties. While there is no empirical data to support the claim that the use of AI technology in learning can increase students' motivation to learn by up to 35% (Anwar & Ahyarudin, 2023), there is plenty of evidence to suggest that AI plays a positive role in the learning process.

AI technology such as ChatGPT offers a number of advantages that make it an ideal tool in Arabic language education. Firstly, ChatGPT can provide instant and interactive answers, which is particularly useful in learning linguistic aspects such as phonology, morphology and syntax. Secondly, ChatGPT can provide customised explanations according to students' level of understanding. One of the main challenges in learning Arabic is the complexity of its grammar, which often makes students feel overwhelmed (Liu, 2023). By using ChatGPT, students can solve this problem through interactive dialogue simulation. Although the assumption of a 45% increase in learning efficiency is not supported by specific evidence in the existing references (Pack & Maloney, 2024), previous research shows the effectiveness of using AI assistance in education.

In the traditional method, students often need additional time to consult with lecturers or look for references to understand certain linguistic concepts. However, with ChatGPT, they can instantly get answers to their questions without having to wait for consultation time. The use of ChatGPT is expected to save learning time, but the specific claim of 50% time saving is not supported by sufficient data (Sallam & Mousa, 2024). The answers provided by ChatGPT can be quick and accompanied by detailed explanations, but users should also critically evaluate the information.

To optimally utilise ChatGPT in learning, students need to understand the steps to use it. They can start by formulating specific questions about the topic they want to learn. ChatGPT's ability to provide adaptive answers makes it very useful for students with different levels of understanding. However, students should also use ChatGPT as a tool, not a substitute for the traditional learning process (Mananay, 2024).

Although ChatGPT offers many advantages, its use in Arabic language learning also faces some challenges. One of the main challenges is ChatGPT's limited understanding of the cultural context and nuances of the Arabic language. ChatGPT, which is based on generalised text data, may not always understand these specific contexts accurately (Xiao & Zhi, 2023). Therefore, it is important for students to use ChatGPT as a tool but still deepen their understanding of Arabic phonology, morphology, and syntax.

Overall, AI technologies such as ChatGPT can be integrated into Arabic language education to improve students' understanding of phonology, morphology, and syntax. The results show that approaches involving AI technology in education can improve learning effectiveness. To ensure optimal use, it is recommended that educational institutions

provide training for students and lecturers on how to use these technologies effectively.

ChatGPT has significant relevance in Arabic language learning, especially in the context of phonology, morphology, and syntax. Arabic is known as one of the languages with a high level of complexity, both in the sound system (phonology) (Perwira et al., 2023) and word structure (morphology), as well as sentence patterns (syntax) (Hadiyanto et al., 2022). In phonology, students often face difficulties in understanding the pronunciation of hijaiyah letters, such as the difference between the sounds of **ض** and **ظ**, or how to use harakat such as **كُسْرَ**, **فَتْحَة**, and **ضَمَّة**. ChatGPT can help explain these concepts by providing pronunciation simulations as well as concrete examples. On the other hand, in morphology, Arabic has a unique word derivation system, where one root word can produce various forms of nouns, verbs, and adjectives through the process of adding prefixes, insertions, or suffixes (Fitriani, 2023). ChatGPT can help students analyse word derivation quickly and accurately. In syntax, ChatGPT can also explain i'rab rules and sentence formation patterns, such as subject-predicate-object order in Arabic (Hadiyanto et al., 2022). With its ability to provide instant and adaptive answers, ChatGPT is a very relevant tool for students in learning the linguistic aspects of Arabic.

3.1 The Use of ChatGPT in Learning Arabic Phonology, Morphology, and Syntax: An Innovative Solution to Learning Challenges

One of the main reasons for using ChatGPT in learning phonology, morphology and syntax is the advantages of AI technology in education. ChatGPT is designed to provide instant and interactive answers according to students' individual needs (Faiz & Afrita, 2024). In the context of Arabic language learning, where students often need detailed explanations and concrete examples, ChatGPT can provide the required information in a short time. For example, when students ask for the syntactic analysis of a complex sentence, ChatGPT can immediately provide a complete answer along with examples. In addition, ChatGPT is adaptive, meaning that it can adjust the level of explanation to students' understanding, ranging from basic concepts to in-depth analyses (Mustofa, 2018). The interactivity of ChatGPT also makes learning more interesting and personalised compared to traditional methods (Ritonga et al., 2023). Students not only passively receive information, but can also dialogue with ChatGPT to deepen their understanding of concepts such as **إِعْرَاب** or **صِيَاغَةُ الْجُمْلِ**. Thus, AI technology such as ChatGPT becomes an innovative solution to improve the efficiency and quality of Arabic language learning.

The use of ChatGPT in Arabic language learning offers significant efficiency in terms of time and cost. In traditional methods, students often have to look for physical learning resources, such as textbooks or modules (Maulana et al., 2024), to understand certain linguistic concepts. This process is not only time-consuming but also requires additional costs to purchase these learning resources. However, with ChatGPT, students

can immediately get answers to their questions without having to wait for consultation time with lecturers or search for references in the library. For example, when students want to understand the i'rab rule in syntax, they can directly ask 'What is the i'rab of the word خَرَجَ in the sentence "خَرَجَ الطَّالِبُ مِنَ الْمَدْرَسَةِ?" to ChatGPT. The answer provided is not only quick but also accompanied by detailed explanations and concrete examples. In addition, ChatGPT can be accessed anytime and anywhere, so students can learn independently without time or place restrictions. Thus, the use of ChatGPT can significantly reduce learning time and cost.

The use of ChatGPT can increase students' motivation to learn because this technology is interactive and responsive to individual needs. In learning Arabic, students often feel overwhelmed by the complexity of its grammar, such as i'rab rules in syntax or word derivation in morphology. However, with ChatGPT, they can get instant answers to their questions, thus feeling more confident in learning difficult concepts. For example, when students ask 'How does the word كَتَبَ form into an isim fail?', ChatGPT can instantly provide the answer that the word changes into كَاتِبٌ through an internal vowel change process. In addition, the interactivity of ChatGPT makes learning more enjoyable than traditional methods. Students not only passively receive information but can also dialogue with ChatGPT to get more detailed explanations on concepts such as صِيَاغَةُ الْجُمَلِ atau إِغْرَابُ الْكَلِمَاتِ. AI technology such as ChatGPT also allows students to learn independently without feeling burdened by time or place constraints. Thus, ChatGPT not only improves students' comprehension but also makes learning Arabic more interesting and motivating.

One of the main challenges in learning Arabic is its grammatical complexity, which often makes it difficult for students to understand linguistic concepts such as phonology, morphology and syntax. ChatGPT can be an innovative solution to overcome this challenge through interactive dialogue simulations that explain difficult concepts in a step-by-step manner. For example, in the context of phonology, students can use ChatGPT to understand the pronunciation of hijaiyah letters such as ظ, ض, and ق, and how to use harakat such as كَسْرَةٌ, فَتْحَةٌ, dan ضَمَّةٌ. In morphology, ChatGPT can help students analyse word derivation, such as how the root word كَتَبَ can be transformed into an isim makan (مَكْتَبٌ) or isim alat (كِتَابٌ) (Fitriani, 2023). For syntax, ChatGPT can explain complex sentence patterns, such as the subject-predicate-object arrangement in the sentence خَرَجَ الطَّالِبُ مِنَ الْمَدْرَسَةِ, along with its i'rab analysis. With the ability to provide adaptive explanations and concrete examples, ChatGPT helps students solve their own linguistic problems without having to wait for help from others. Thus, AI technology such as ChatGPT becomes a highly relevant tool to improve the efficiency and quality of Arabic language learning.

To utilise ChatGPT in learning Arabic phonology, morphology and syntax, students need to understand the practical steps of using it. Firstly, students can start by formulating specific questions about the topic they want to learn. For example, in the context of

phonology, students can ask ‘How do I pronounce the letter ض in Arabic?’ or ‘What is the difference between the sounds of فَلَطَّة and غُنَّة. In morphology, students can ask for an analysis of a particular word structure, such as “How do I form the word كَتَبَ into an isim fail form?” (Akbar Islamy et al., 2024). For syntax, students can ask ‘What is the i'rab of the word خَرَجَ in the sentence خَرَجَ الطَّالِبُ مِنَ الْمَدْرَسَةِ (Muhammad Abi Farhan et al., 2024). The second step is to ensure that the questions asked are specific enough for the ChatGPT to provide relevant and accurate answers. The final step is to practise the answers provided by ChatGPT through self-practice. By following these steps, students can use ChatGPT effectively to understand Arabic linguistic concepts.

3.2 The Use of ChatGPT in Arabic Language Learning: Potential, Challenges, and Students' Perspectives

ChatGPT has great potential for practical application in Arabic language learning. One example is when students want to analyse complex Arabic texts, such as verses from the Qur'an or hadiths. For example, students can ask, ‘What is the syntactic structure of the verse إِنَّ اللَّهَ وَمَلَائِكَتَهُ يُصَلُّونَ عَلَى النَّبِيِّ (Fadly, 2022). However, ChatGPT may not always provide accurate responses without the proper context. Additionally, ChatGPT can be used to simulate interactive dialogues in solving specific linguistic problems. For example, if students are struggling to understand the rules of i'rab in syntax, they can ask, ‘What is the i'rab of the word كَتَبَ in the sentence كَتَبَ الطَّالِبُ الْكِتَابَ (Fadly, 2022). In this way, ChatGPT not only helps students understand linguistic concepts but also provides concrete examples that can be immediately applied. This makes AI technology like ChatGPT a highly relevant tool in Arabic language learning.

Although ChatGPT offers many benefits, its use in Arabic language learning also faces several challenges. One of the main challenges is the potential for technical errors in the analysis provided by ChatGPT if the student's question input is ambiguous. For example, if a student asks ‘What is the i'rab of the word كَتَبَ?’ without mentioning the complete sentence, ChatGPT may provide an inaccurate answer because there is no clear context. (Ritonga et al., 2023). In addition, ChatGPT has limitations in understanding the cultural context or nuances of the Arabic language, which often affect the meaning of words or phrases. To overcome this challenge, students need to formulate their questions more specifically and clearly. They can also supplement ChatGPT answers with additional references, such as textbooks or consultations with lecturers. (Ardhianti et al., 2024). This way, students can minimise the risk of errors and make more optimal use of ChatGPT.

The use of ChatGPT in Arabic language learning offers significant practical benefits for students. One of its main advantages is the technology's ability to help students understand linguistic concepts independently without having to wait for consultation time with their instructors. (Aisyah et al., 2024). For example, when students want to practise pronouncing Arabic letters such as ظ, ض, or ق, they can simply ask

ChatGPT, 'How do you pronounce the letter ض correctly?' The response is not only quick but also includes detailed explanations about tongue position, air pressure, and the characteristics of the sound. Additionally, ChatGPT allows students to learn anytime and anywhere, enabling them to schedule their study time according to their needs. For instance, if a student wants to analyse word derivation in morphology, they can ask, 'How do you form the word كَتَبَ into a noun?' However, it is important to note that such specific answers must be accurate and grounded in proper linguistic knowledge. Thus, ChatGPT not only enhances students' understanding but also makes learning more flexible and efficient. This technology can also be used to practice syntactic analysis, such as the i'rab of complex sentences, enabling students to learn gradually and systematically.

Students' perspectives on the use of ChatGPT in Arabic language learning vary widely, but most view this technology as an effective tool. Many students feel that ChatGPT helps them understand difficult concepts in phonology, morphology, and syntax in a more interactive and enjoyable way (Kardika et al., 2023). For example, when students want to understand the rules of i'rab in syntax, they can directly ask, 'What is the i'rab of the word الطَّالِبُ in the sentence خَرَجَ الطَّالِبُ مِنَ الْمَدْرَسَةِ?' and ChatGPT will respond that the word is the subject (فَاعِلٌ) with the i'rab marfu' (Muhammad Abi Farhan et al., 2024). However, some students may still view ChatGPT as merely a supplement to traditional methods, especially if they prefer learning with direct guidance from instructors. Nevertheless, it is important for students to understand that ChatGPT is not a replacement for deep understanding but rather a tool to accelerate the learning process. With this approach, students can optimally utilise ChatGPT to enhance their understanding of Arabic while continuing to develop their linguistic skills through independent practice and additional references.

4. Conclusion

This study aims to analyse the perspectives of Arabic Language Education (PBA) students in utilising ChatGPT for phonology, morphology, and syntax learning. The results indicate that ChatGPT has great potential as an interactive tool that can improve students' understanding of Arabic linguistic aspects independently. This technology is capable of providing instant, adaptive answers accompanied by detailed explanations, such as in the analysis of the pronunciation of Hijaiyah letters, word derivation, and i'rab rules in syntax. However, the use of ChatGPT also faces challenges, such as limitations in understanding cultural contexts or Arabic language nuances, thus requiring further clarification from other sources such as textbooks or lecturers. These findings indicate that ChatGPT can be an innovative solution to address the complexities of Arabic grammar, but it should be used wisely while referring to valid academic references. For further development, it is recommended that educational institutions provide training for students and lecturers on how to effectively utilise this technology, as well as conduct further research to optimise the application of ChatGPT in various aspects of learning.

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