Affordances and Challenges of Integrating Artificial Intelligence into English Language Education: A Critical Analysis

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Biodata

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Abstract:

In this study, I explore the effects of the transition from technology integration to the application of artificial intelligence (AI) in English language education and uncover the affordances and challenges associated with this shift. As technology evolves rapidly, ELT practitioners eagerly embrace modern education apps to enhance language learning experiences. Large Language Models (LLMs) and generative chatbots offer teachers various opportunities in lesson preparation and delivery, assessment, feedback, student advising and independent learning. However, the widespread use of AI tools in education has become a challenge to academic integrity, mainly due to learners' misuse of generative chatbots like ChatGPT. Although some sophisticated self-learning chatbots contribute to learner autonomy, they pose serious ethical challenges to data privacy and teacher roles and create a digital divide. By examining the affordances and challenges of integrating artificial intelligence into English language education, I recommend that educators and researchers reflect critically on the implications of AI in ELT and gain insights into effective strategies for harnessing the potential of AI to transform language education rather than rejecting the latest innovation in educational technology as a threat. While admitting the large-scale misuse or abuse of AI tools by students and researchers, I highlight their affordances in English language teaching, learning and research and propose creating a framework to facilitate the legitimate use of AI tools in education.

Keywords: Affordances, Artificial Intelligence, Generative Chatbots, Technology Integration

Introduction

Information and Communication Technology (ICT) integration has profoundly impacted English language education. ICT enables teachers and learners to access a wide range of authentic resources, making learning more interactive and engaging. Technology has widened the horizons

of language education, involving students in various interactive activities (Dedja, 2015). The latest innovations in education technology have transformed teaching and learning tools. Teachers and learners now rely on various technological resources inside and outside the classroom. Education technology has recently witnessed a remarkable transition towards artificial intelligence in language education. With the advent of AI, language learning has become more personalised, interactive, and efficient.

AI tools have revolutionised the world, offering innovative solutions and enhanced living experiences for people worldwide. A modern life without using applications powered by artificial intelligence is beyond imagination (Iman et al., 2021). AI-powered language education platforms offer personalised learning experiences. These platforms can analyse learners' strengths and weaknesses, provide real-time feedback, and generate customised learning paths. Additionally, AI enables the development of intelligent chatbots and virtual language tutors, fostering conversational practice and enhancing language fluency. As education technology continues to advance, it holds the potential to revolutionise language learning, making it more accessible and effective for learners worldwide.

Artificial Intelligence tools utilise natural language processing (NLP) algorithms and machine learning techniques to provide personalised instruction, feedback, and assessment. One significant application of AI in English language education is language learning platforms that employ chatbots and virtual tutors. These AI-powered assistants engage students in interactive conversations, helping them practice pronunciation, vocabulary, and grammar in a dynamic and engaging manner. Additionally, AI tools can analyse students' writing samples and provide instant feedback on grammar, style, and coherence, allowing continuous improvement.

Language teachers now greatly benefit from generative chatbots as they can use them to create adaptive lesson plans tailored to individual student's needs, ensuring targeted instruction. Furthermore, AI-powered speech recognition technology enables students to practice speaking skills and receive accurate assessments of their pronunciation and intonation. With the integration of AI tools, English language education has become more accessible, personalised, and effective, empowering learners to develop their language skills with confidence and efficiency. However, despite the numerous advantages of AI tools in language learning, they pose a serious threat to

language acquisition and development as students now widely misuse generative chatbots. To address these issues, I used the following questions:

1. What are the opportunities and challenges of integrating artificial intelligence in English language education?
2. How do AI tools impact learners' motivation, autonomy, language proficiency and engagement?
3. To what extent does the implementation of AI in ELT enable personalised and adaptive learning experiences?
4. How does the integration of artificial intelligence affect the role of English language teachers in the classroom?

Literature Review

There has been a rapid increase in the use of technology in the post-COVID era, and some of the educational software used today is supported by artificial intelligence. Many interactive learning environments (ILEs) have unique features that facilitate fast learning as they do not have any constraints of time or place; hence, in certain situations, they work better than human tutors (Roll & Wylie, 2016). As most learners are digital natives, the advances in educational technology have changed students' attitudes towards learning, classroom behaviour, and learning styles (Binu, 2012). Artificial intelligence now dominates all fields, including engineering, science, technology, and education (Naqvi, 2020).

The latest advances in technology have given a boost to learner autonomy. Generative Al tools are engaging and can provide immediate and tailored responses to learners' prompts, which help them improve their knowledge and language skills. (Cotton, Cotton & Shipway, 2023). Large language models (LLMs) have recently made significant progress in natural language processing, making the language learning process more efficient and personalised (Kasneci et al., 2023). AI tools provide excellent technical support to enhance personalised learning (Chang & Lu, 2019). Automated feedback on student writing is considered one of the best potential strengths of generative chatbots, which enhances personalised learning and decreases teacher workload (Farrokhnia et al., 2023).

Integrating interactive tools in digital textbooks is of great interest to young learners. However, El Shazly (2021) states that despite the advantages of AI applications in enhancing personalised training to improve speaking skills, learners' interactions with chatbots do not help them reduce

foreign language anxiety. Most teachers are worried about their students' misuse of AI tools, so they often fail to see the scope of artificial intelligence in language education. Chatbots and large language models (LLMs) are excellent resources for teachers to create handouts, practice materials, and even rubrics for speaking and writing assessments suitable for any level of learners based on the prompts given by the users. AI tools are beneficial for teachers to deal with mixed-ability groups (Murphy, 2019).

Artificial intelligence is widely used in educational institutions in various ways for administration, teaching and learning (Chen et al., 2020). Recently, higher education students have widely used digital translation tools to do their assignments and projects. (Paterson, 2022). Many students and teachers depend on AI tools, especially for corrective feedback on writing (Koltovskaia, 2020). Sophisticated computer programs like Readizy can be used for reading diagnosis to understand learners' responses to a text (Gao et al., 2021). The use of AL tools is not limited to teaching and learning. Instead, it is also used for administration, exam invigilation and monitoring student behaviour. Advanced AI technology can precisely monitor behavioural abnormalities (Iyer et al., 2020).

Despite the enormous advantages of artificial intelligence, there is growing concern among language educators about how generative AI tools will affect the teaching-learning process. Educators differ in their opinions about prohibiting or incorporating AI tools into the curriculum. There is an urgent need for in-depth research so academicians and curriculum designers can appropriately integrate artificial intelligence into education (Chiu et al., 2023). Educational practices require drastic reforms to accommodate modern technology (Tseng & Warschauer, 2023). AI technologies and free access to generative chatbots, such as ChatGPT, have raised concerns about academic integrity (Alexander et al., 2023). As Godwin-Jones (2022) states, some of the latest generative chatbots, like ChatGPT, are capable of not only providing automated feedback on essays but also composing essays. The advanced features and easy access to generative chatbots have raised concerns about students' misuse of these tools (Yeo, 2023).

Academics, educators, and higher education institutions are deeply concerned about using generative AI by students and are grappling with the appropriate modifications to teaching methods, evaluation processes, and policies (Huang, 2023). Educators and learners must be aware of the ethical issues associated with AI in education (Akgun & Greenhow, 2021). In the words of

Pack & Maloney (2023), "As attention is primarily focused on student misuse of the technology, the potential affordances of generative AI tools may often be overlooked." (p.4). Chatbots like ChatGPT can generate unique written texts in any desired length, format or style in response to the prompts given by the user (Elkins & Chun, 2020).

The absence of a regulatory framework for integrating AI applications into education may create ethical and societal risks as it may keep the poor and marginalised at a disadvantage (Miller et al., 2018). The rapid advancement of emerging technologies and the accompanying shift to digital processes pose considerable difficulties for society and across various levels of the education system (Schmidt & Strasser, 2022). Implementing AI tools and facial recognition technology (FRT) raises concerns about privacy protection and social justice (Almeida et al., 2022).

Some educators express concern about the future of teachers as technology continues to advance. Teachers are pressured to integrate technology with their lessons to train their learners to survive in the modern world (Chun et al., 2016). However, such fears are baseless as education, in the broad sense, is an act of training and inspiring students for the future. Language instructors should have a wide range of techniques and digital tools to deal with the heterogeneity of students (Binu, 2021). As more sophisticated AI-driven programs are likely to emerge, ELT practitioners must be familiar with using chatbots and modify their instructional strategies to remain updated in the field (Hockly,2023). Al-driven applications may train learners well, but they still require the presence of educators to encourage them. The above findings prove that artificial intelligence cannot be a substitute for human interventions.

Methodology

For the current study, I used a mixed-methods approach incorporating qualitative insights from a comprehensive literature review and quantitative analysis by actively engaging with some AI-powered education applications and chatbots, namely, ChatGPT, Microsoft Teams Reading Progress, EssayGrader AI, Twee, and Scribbr to assess their functionality, efficiency, accuracy and potential limitations or challenges. This approach facilitated a comprehensive understanding of the affordances and challenges of the AI tools commonly used by teachers, researchers, and students, merging theoretical knowledge from existing research with firsthand experience with practical applications.

Results and Discussion

Resources for Teachers

AI tools have revolutionised English language education by providing teachers with invaluable assistance in lesson preparation, planning, and material development. These tools offer a wide range of benefits that streamline the teaching process and enhance the learning experience for students. For example, ChatGPT can generate personalised lesson plans based on individual student needs and learning objectives. By analysing student performance data and utilising adaptive algorithms, these tools can identify knowledge gaps and suggest targeted activities and resources to address them. Secondly, AI tools can automate the creation of worksheets, exams, and quizzes. They can generate a multitude of practice exercises and assessments, saving teachers significant time and effort. However, language instructors should be trained appropriately in crafting prompts to generate relevant handouts, practice materials, tests, or assessment rubrics. Learners' level of proficiency, theme, specific vocabulary, methodology, length of the material, number of questions and the type of exercise should be prompted well to get the desired output.

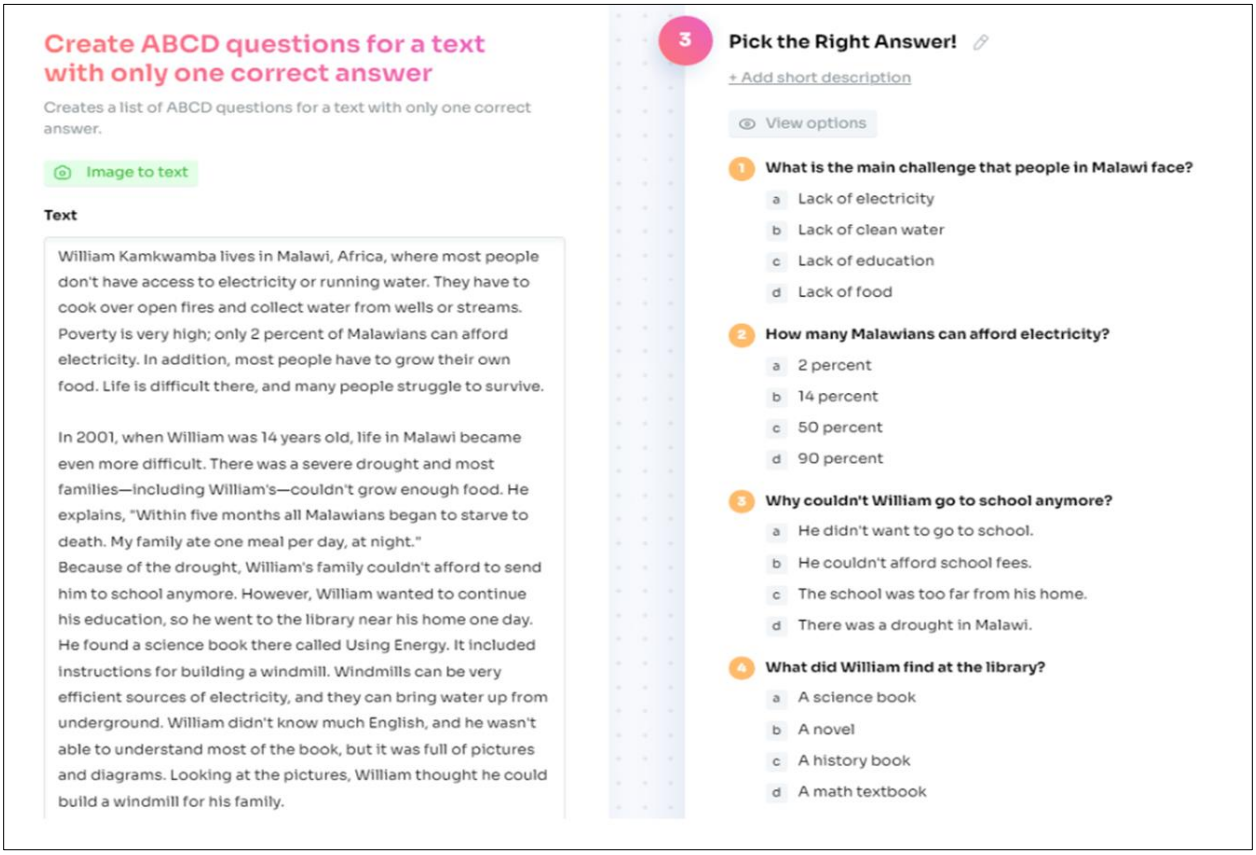


Figure 1: A reading exercise generated by twee.com.

Assessment and Feedback

Artificial intelligence can effectively assess student performance and provide feedback on their writing. AI tools can analyse students' writing styles, giving feedback on sentence structure, word choice, clarity, and coherence. Automated feedback helps students enhance the overall quality and readability of their writing, allowing self-paced learning. However, since AI tools cannot detect the specific context of writing, it can result in inaccurate or general feedback. Besides, they cannot provide personalised feedback tailored to students' needs. As learners have unique preferences, learning styles and goals, the AI-generated feedback might not address their specific needs.

Moreover, emotional aspects play a crucial role in the feedback process. Teachers often encourage and motivate students, highlighting their strengths in writing and drawing their attention to the areas for improvement. However, since automated feedback lacks human elements, students may find it impersonal or demotivating. Writing is a social and communicative process with direct interaction with teachers and learners, but AI tools cannot provide that sense of community and emotional support. Therefore, I believe that combining the strengths of AI tools with human teachers' support can lead to an effective feedback system.

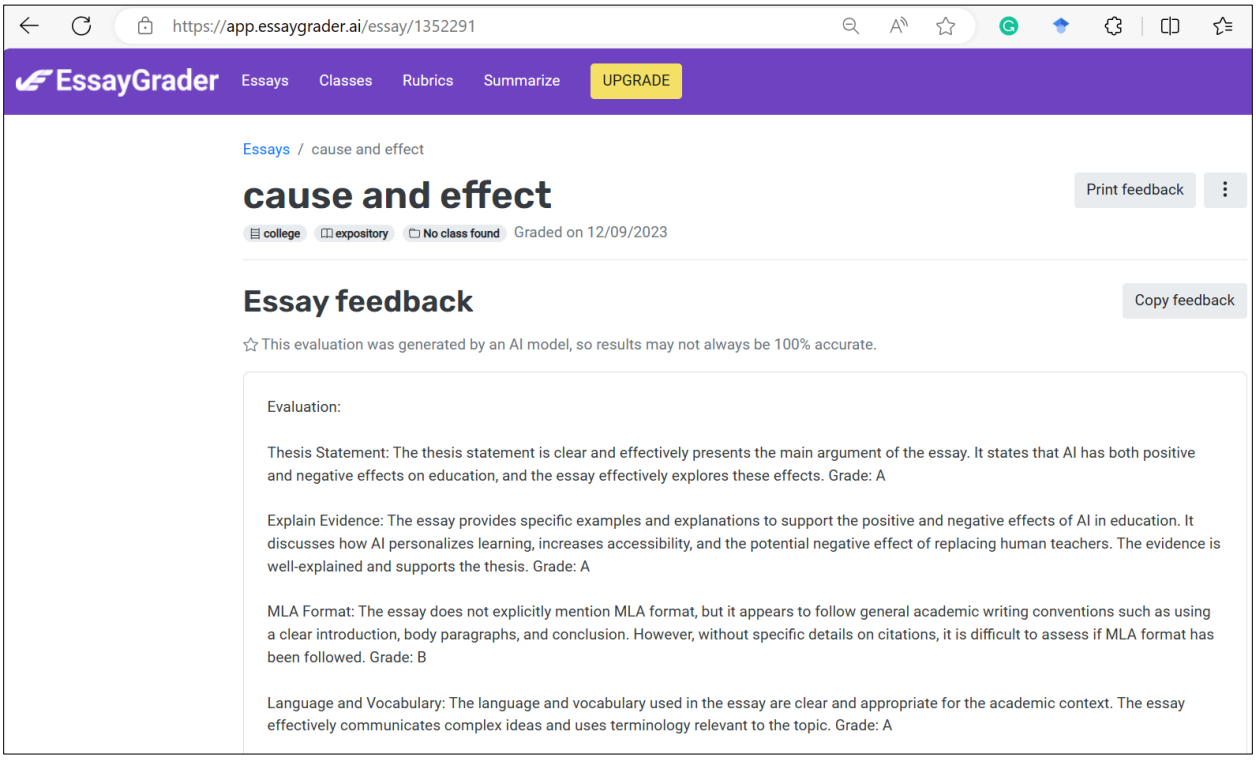


Figure 2: Automated feedback on a student essay generated by essaygrader.ai.

Independent Learning

Modern learning apps powered by artificial intelligence are beneficial in providing personalised learning. Various self-learning apps are now available to cater to the specific learning needs of individuals. However, the overuse of apps, especially the ones meant for generating texts, can negatively impact learning creativities and critical thinking skills. In addition, some software may give faulty feedback, incorrect register and style, and unclear recommendations, as AI tools cannot detect the specific context of the learning process.

Microsoft Teams Reading Progress is an AI-powered tool that generates instant feedback on loud reading. This application is beneficial for students who have difficulties in reading or who hesitate to read loudly in class. As it is not practical for any teacher to train all students individually in loud reading, assigning loud reading assignments on MS Teams Reading Progress is a viable alternative. The software generates automated feedback with the number of words read per minute and reading accuracy rate. Besides, it uses colour codes to highlight various reading problems such as mispronunciation, omission, repetition, and insertion and enables students to practise the mispronounced word multiple times. I have found this AI tool particularly useful for introverted students.

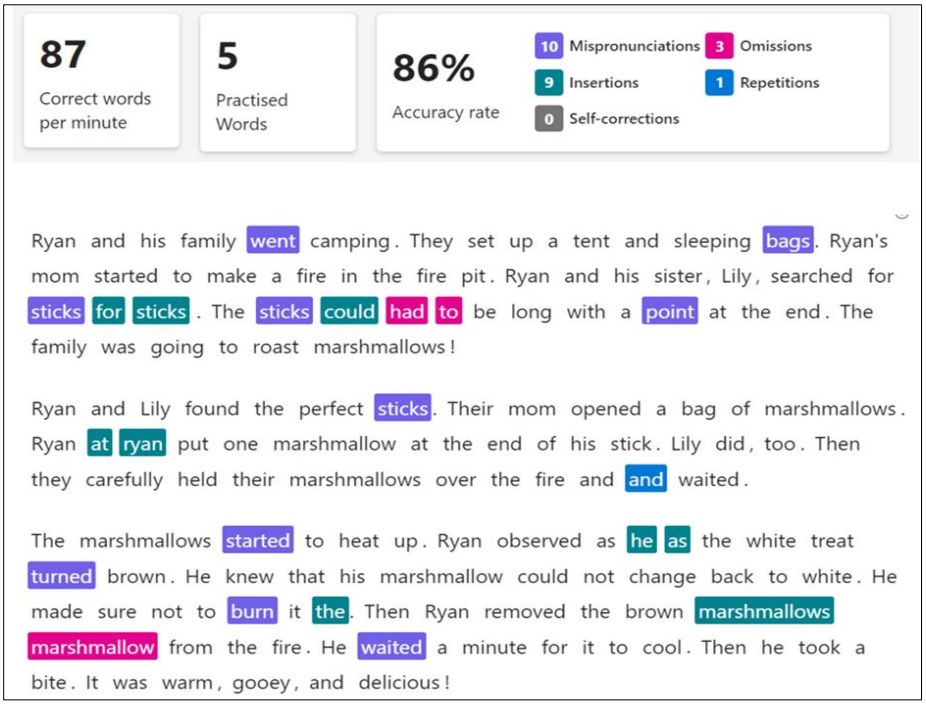


Figure 3: Feedback on loud reading generated by Microsoft Teams Reading Progress.

Automated Grammar and Spelling Check

Grammarly, a popular AI-powered tool, can automatically scan and detect grammatical errors, spelling mistakes, punctuation issues, and other surface-level language errors in writing. It provides instant feedback, highlighting the errors and suggesting corrections. This tool can help teachers and students improve their language accuracy and develop proofreading skills.

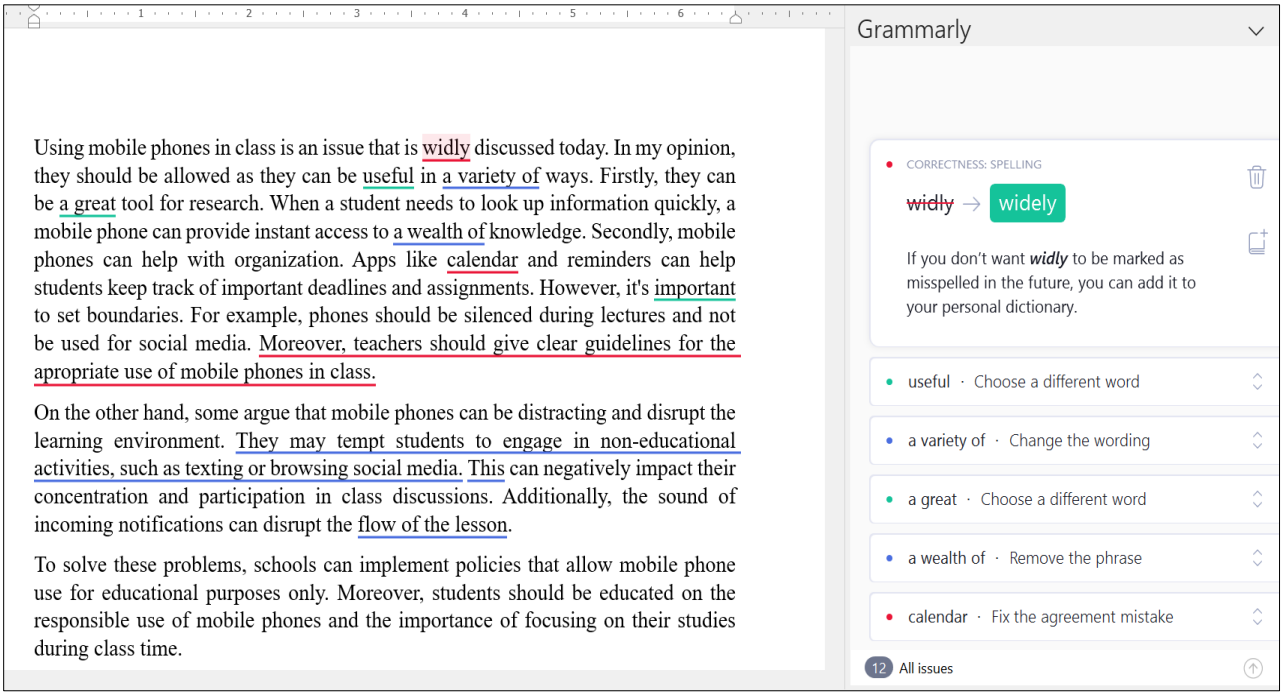


Figure 4: Automated feedback by Grammarly

Assessment Rubric

AI tools can be used to generate rubrics to assess student writing. The assessment rubric below was generated by ChatGPT in response to the following prompts:

Create a rubric for assessing English language learners' individual presentation in class.
The rubric should have four categories (1. content and organisation, 2. language proficiency, 3. delivery and time management and 4. audience engagement.
Use a scale of 1-5 points for each category, with descriptors for 1, 2, 3, 4 and 5.

Category 1: Content and Organization

- 1 point: Limited or unclear content and organization
- 2 points: Some relevant content and basic organization
- 3 points: Adequate content and logical organization
- 4 points: Well-developed content and effective organization
- 5 points: Exceptional content and seamless organization

Category 2: Language Proficiency

- 1 point: Numerous errors and limited vocabulary
- 2 points: Frequent errors and basic vocabulary
- 3 points: Some errors and varied vocabulary
- 4 points: Few errors and appropriate vocabulary
- 5 points: Accurate language use and advanced vocabulary

Category 3: Delivery and Time Management

- 1 point: Incoherent delivery and poor time management
- 2 points: Limited coherence and inconsistent time management
- 3 points: Adequate delivery and reasonable time management
- 4 points: Clear delivery and effective time management
- 5 points: Engaging delivery and excellent time management

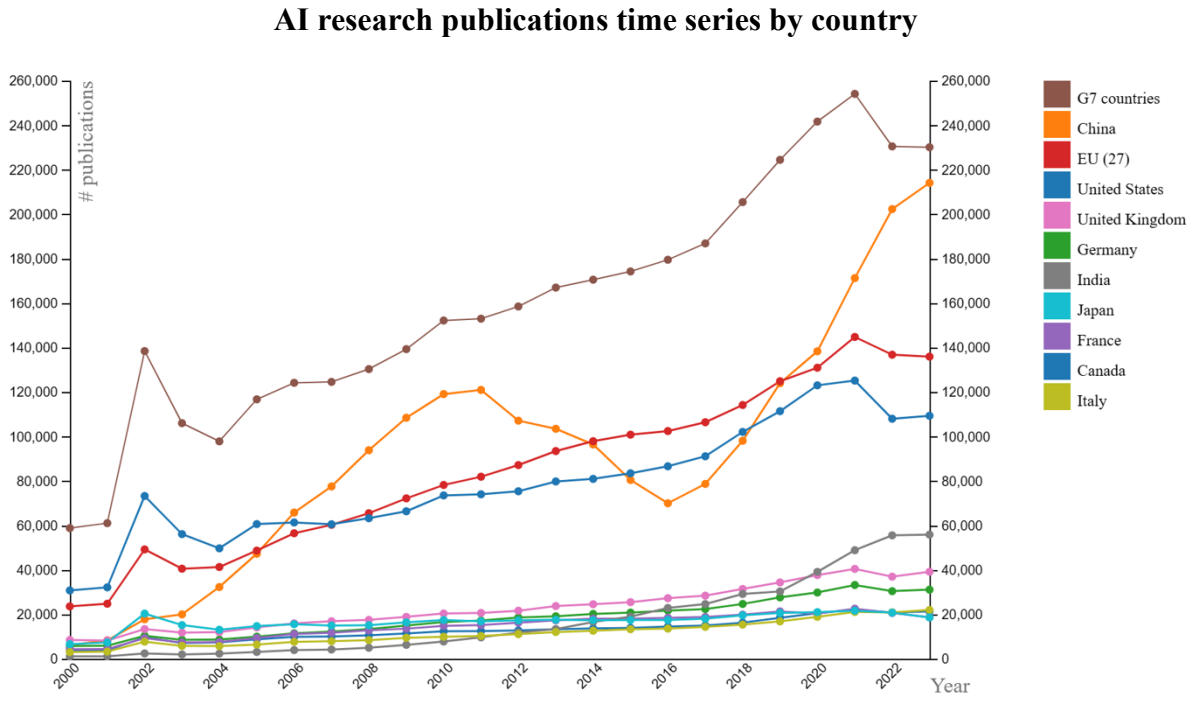
Category 4: Audience Engagement

- 1 point: Minimal audience engagement
- 2 points: Limited audience engagement
- 3 points: Some audience engagement
- 4 points: Good audience engagement
- 5 points: Outstanding audience engagement

Figure 5: A presentation assessment rubric generated by ChatGPT.

Research

AI tools can be beneficial in research as they provide quick access to vast information, efficiently analyse data, identify patterns, and extract valuable insights. Artificial intelligence can handle complex calculations and statistical analyses, saving researchers' considerable time and effort. However, with the advent of AI tools, there has been a significant increase in mediocre research and substandard paper publications. While AI offers substantial benefits, it should be seen as a complementary tool rather than a substitute for human efforts and judgment in research. Maintaining a balance between technological advancements and human expertise is crucial for ensuring the quality and depth of academic research.



Source: OECD.AI (2023), visualisations powered by JSI using data from OpenAlex., accessed on 15/12/2023, www.oecd.ai

Figure 6: AI research publications time series by country

Discussion

Although AI tools have become valuable assets in English language education, they should be complemented with teachers' guidance and expertise to ensure efficacy, fairness and academic integrity. Therefore, there must be a regulatory framework for integrating AI applications in language education, and proper guidelines should be issued for teachers and students to ensure fairness and uphold academic integrity. Learners' language proficiency should be assessed by administering standard tests and their performance in class rather than relying on home assignments. Furthermore, this study emphasises the significance of reviewing and strengthening institutional guidelines and procedures that uphold academic integrity to ensure high-quality language teaching and learning.

Impact on Language Acquisition

As far as students are concerned, the main threat of using AI tools is its negative impact on their writing skills. According to Harris (1995), writing is a mode of communication, and it has to be slow enough to work. As writing usually takes more processing time than speech, it enables

learners to develop various skills such as critical thinking, brainstorming, processing information and utilising lexical and grammatical knowledge. However, when learners resort to AI tools to generate a text, it deprives them of the opportunities to develop in all areas of linguistic competence, such as lexis, semantics, grammar, and pragmatics. The central aspect of language acquisition is discourse competence, and learners' dependence on AI tools will weaken their ability to construct coherent texts with grammatical and lexical accuracy.

The damage generative AI tools can cause to language acquisition is not just limited to writing alone but also other skills, including grammar and lexis. For example, when students use ChatGPT to generate a book or film review without reading or watching it, they miss the opportunity to use top-down or bottom-up strategies to process the information, develop critical thinking skills, and encounter key vocabulary and grammatical structures essential for language acquisition and development. In other words, students do not go through the learning process; instead, they become like machine operators giving prompts to generate the output, which demands immediate intervention with the assessment methods. In my teaching context, I instruct learners to do an individual presentation of the book or film review in class, which allows the teacher and other participants to interact with the presenter and get the details about the book and the reading process. Therefore, I recommend that classroom practitioners stop relying solely on assignments to award marks and instead interview students or encourage them to do presentations in class on their reading or listening experiences.

Generative chatbots have become increasingly prevalent in various aspects of education. While these tools offer convenience and efficiency, there are concerns about their negative impact on learners' writing and critical thinking skills. One of the main drawbacks of using AI tools is that it can lead to a dependency on automated corrections and suggestions, leading to a decline in student's ability to develop creative writing skills. By relying heavily on AI-generated feedback, students may become less engaged in the writing process, which is essential for developing their creativity, critical thinking, and self-expression.

AI Writing Assistance like Grammarly detects grammar, spelling and punctuation errors and suggests replacements. However, these suggestions are sometimes misleading as AI tools might not fully capture the nuances and context-specific requirements of different writing assignments, limiting students' ability to appropriately adapt their writing style and tone. Another concern is that

AI tools prioritise surface-level errors like spelling and grammar over deeper issues like logical coherence and argument development. While correcting these superficial errors is essential, students may overlook the content, organisation, and critical analysis, resulting in a technically accurate text lacking depth and originality.

While AI tools can offer valuable assistance in writing tasks, corrective feedback, grammar check, and self-learning, their overreliance and limitations can hinder students' language skills. To mitigate these adverse effects, educators must encourage students to use AI tools as aids rather than replacements for their own critical thinking and language learning strategies.

Academic Integrity and Cultural Appropriacy

Learners' dependence on artificial intelligence has raised concerns about academic integrity. While AI tools provide valuable resources and assistance, they also raise challenges to originality in students' work. AI-powered tools can facilitate access to vast information and content, which may tempt students to replicate texts without proper citation or acknowledgement. The ease of using AI-generated content can lead to unintentional plagiarism by suggesting phrases or sentences that closely resemble existing sources. As some AI tools, like ChatGPT, can generate written texts with high grammatical and lexical accuracy, it will undoubtedly disrupt the teaching-learning process unless educators seriously consider redefining the existing curricular requirements. Academic institutions must issue guidelines and create awareness sessions to emphasise the importance of proper citation and the ethical use of AI tools to ensure academic integrity.

Another issue is cultural appropriacy, as the text generated by chatbots is not subject to review by educational experts or curriculum developers. Implementing clear guidelines and providing education on responsible AI tool usage can help students navigate these challenges while maintaining the highest standards of academic integrity.

Critical Thinking Skills

Although AI-powered chatbots are convenient and efficient, they sometimes negatively impact learners' critical thinking skills as they provide instant answers and solutions, leaving no room for learners to engage in critical thinking. Learners who rely on AI-generated responses without analysing and evaluating information miss the opportunity to think logically. Another drawback of AI tools is that they do not always provide explanations or reasoning behind their answers or

suggestions. They often prioritise factual correctness and predefined patterns, limiting learners' exposure to different views or perceptions. This lack of transparency can affect learners' understanding of the underlying concepts and prevent them from developing a more profound knowledge of the subject matter.

Critical thinking involves questioning, analysing, and evaluating information, which may be neglected when learners depend solely on AI-generated responses. To overcome these adverse effects, I always encourage learners to use AI tools as aids rather than substitutes for their learning tasks. Moreover, I emphasise the importance of critical analysis, facilitate group discussions, and provide opportunities for learners to engage in problem-solving activities to help them develop critical thinking skills.

Conclusion

The invention of generative AI tools is sometimes considered the greatest success in recent times. Teachers, researchers, and students are greatly benefited by various AI-powered tools. However, the over-dependence of generative chatbots and the absence of a regulatory framework to monitor the use of AI tools pose considerable challenges to academia. As a result, the education sector will have disastrous consequences if policymakers, curriculum designers, and classroom practitioners do not make the proper interventions to address these issues. Hence, there should not be a complete rejection of AI tools in English language education, considering it as a threat. Instead, it should be taken as a tool, and educators should adopt a transdisciplinary approach to language teaching.

Moreover, curriculum designers and classroom practitioners should embrace the latest invention as a valuable tool by maintaining a healthy balance between human interaction and technological integration. There should be a policy at international, national and institutional levels to set parameters for using AI tools in teaching, learning and research. Finally, artificial intelligence should be considered an inevitable part of the integration of technology in second-language education, and efforts should be made by policymakers, academic administrators and educators to ensure its implementation in compliance with educational and ethical standards.

Recommendations

In light of the in-depth analysis of the literature review and my experiments with some of the AI tools which teachers and learners widely use, I would like to make the following recommendations for the integration of artificial intelligence in English language education:

- Governments should create legislation to facilitate the legitimate use of artificial intelligence in education.
- A policy should be in place at the micro and macro levels to provide a framework for the effective use of AI tools.
- There should be a curriculum review and development committee in all higher educational institutions that recommends a list of AI tools freely accessible to teachers and students to address inequity and the digital divide.
- There should be a monitoring system at the micro, meso and macro levels to oversee the appropriate use of AI tools and uphold academic integrity.
- The instructional materials teachers create using generative AI tools should be reviewed and edited by curriculum designers to ensure cultural appropriacy.
- Artificial intelligence should be integrated into the curriculum of teacher education programmes.
- There should be ongoing professional development sessions for teachers in digital literacy and the utilisation of advanced AI detection technologies.
- The existing course components and assessment and evaluation tools should be modified to guard against the misuse of AI tools.
- Education departments should initiate collaboration with AI developers, curriculum designers, policymakers and classroom practitioners to ensure mutual consultation for the effective creation of AI tools.
- Artificial intelligence should be the focus of discussion and debate at academic events.
- As AI developers are constantly creating more advanced chatbots, there should be ongoing research and evaluation of the latest tools to give constructive feedback and suggestions for improving technology-integrated language education.

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