Thematic Collection[1]

A Holistic Approach to ChatGPT, Gemini, and Copilot in English Learning and Teaching

Abdu Al-Kadi[1], Jamal Kaid Mohammed Ali[2*]

[1]University of Bergen, Norway
[2]Department of English Language and Literature, College of Arts and Letters, University of Bisha, Bisha, Saudi Arabia

Abstract

Artificial Intelligence (AI) has penetrated English language learning and teaching, and this penetration parallels a surge of research on its potential and challenges for learners and teachers altogether. This paper provides a glimpse of the status quo of generative (Gen) AI in contexts where English is not used natively. Adopting a holistic approach to researching these GenAI tools, the study takes three large language models (LLMs) as its focus: ChatGPT, Gemini (formerly Bard) and Copilot (formerly Bing Chat). The discussion focuses on how such chatty LLMs bolster learners' command of English and support teaching it innovatively. It is organized around aspects of effectiveness and challenges in four parts. The first is about LLMs and how they shape new pathways for more interactive English learning. The second sketches how these language models are invested for enriching formal learning, self-directed learning, interactive content, feedback, and learning materials. The third part beds on teachers, including planning teaching, assessment, and professional development. The fourth part culminates in concerns associated with GenAI in English programs. The study charts territories for further research to paint both sides of a complete picture of GenAI in language education.

Keywords: *Artificial Intelligence (AI), AI-Assisted Language Learning, Gemini, Copilot, ChatGPT*

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* Corresponding author.
E-mail address: jamalalhomaidi@gmail.com   https://doi.org/10.32038/ltrq.2024.43.09

Introduction

As in various disciplines, artificial intelligence (AI) is evident in foreign language learning and teaching. Numerous AI applications including Google's Bard (now named Gemini), Open AI's ChatGPT, and Microsoft's Bing Chat (now known as Copilot) have surged into English education (Lee, 2024; Nugroho et al., 2023; Sok & Heng, 2024)—a phenomenon that has spooked educators for a while and attracted language researchers' attention. An increasing volume of research has shown that "conversational AI is a natural fit for language education" (Pratschke, 2024, p. 34). These large language models (LLMs), which were originally designed to create texts, variably provide possibilities for interaction with learners and offer unique approaches for teachers instead of, or at least in addition to, the conventional teaching methods (Al-Raimi, et al. 2023; Agustini, 2023; Kostka & Toncelli, 2023; Sok & Heng, 2024; Yang et al., 2024). For instance, the proprietary chatbot (ChatGPT) enables natural language processing (NLP) tasks (Crompton & Burke, 2024; Dizon, 2024; Torrent et al., 2023) such as text generation and document classification (Kirana & Gupta, 2022; Niloy et al., 2024; Nugroho et al., 2023). Besides, ChatGPT, as with Copilot and Gemini, can build chatbots for different purposes, including general queries, assessment, tutoring (Liu & Ma, 2023; Sahari et al., 2023; Seo, 2024), and curating relevant information for academic exercises (Nugroho et al., 2023). Teachers also find such technological innovations invaluable for their teaching (Crompton & Burke, 2024; Kostka & Toncelli, 2023). Indeed, the Generative AI (GenAI) landscape of change (Pratschke, 2024), has grown rapidly and has provided more food for thought in technology-based language education.

Rationale

LLMs (namely ChatGPT, Gemini and Copilot), which have existed for a while, resulted in persistent questions on the extent of their influx into English programs. Prior research has shown their salience for language assessment (Moqbel & Al-Kadi, 2023; Seo, 2024; Yang et al., 2024), and learning motivation (Ali et al., 2023; Yıldız, 2023; Zhou & Li, 2023). Other researchers including Ali (2023), Alzubi (2024), Bin-Hady et al. (2023), and Sahari et al. (2023) tapped into AI-based challenges that stand on the way of AI uses in English education. Besides, AI-based language models have been increasingly and significantly championed as self-driven learning versatile tools (Agustini, 2023; Dizon, 2024; Liu et al., 2023; Van Horn, 2024). Still, there is a need for capturing the extent that researchers have covered and the new areas that deserve further exploration.

An overall picture of the state-of-the-art of their integration is useful to zoom in on the current situation of AI in English language programs and the trajectory of relevant research. It would enrich the ongoing discussion about the critical roles of the three LLMs in question and pinpoint their merits and demerits in English learning and teaching (Ali, 2023; Crompton & Burke, 2024; Kostka, & Toncelli, 2023). Against this background, this paper, based on relevant theoretical underpinning and prior research findings, is a zoom-in lens to succinctly provide well-reasoned propositions on these AI models' potential and limitations (Nugroho et al., 2023; Sok & Heng, 2024). The study is generally an account intended for language educators, researchers and learners who are interested in integrating GenAI into language curricula efficiently and strategically. In other words, this account, motivated by the necessity to leverage educational implications for well-informed policymaking in ELT, provides a

comprehensive and well-informed discussion of the magnitude of what LLMs can do for language learners and educators rather than what it can do with language.

Organization of the Study

This endeavor adopted a holistic approach to the outcome of the three GenAI tools, as all LLMs are AI-generated. It is organized around aspects of effectiveness and challenges of these common innovative tools in four parts. The first is about these intriguing AI-based models and their rapid penetration into foreign language education with a major focus on English programs in contexts where it is not used natively. The second is about adaptability of the three LLMs for learners' engagement in self-regulated learning, personalized learning, informal learning, innovation, immediate feedback, and diverse learning materials. The third part outlines AI potential for teachers and teaching—planning, assessment, and professional development. The fourth part illuminates the limitations associated with such technological advances. This division enhances clarity and focus of the discussion insofar as English learning and teaching are concerned. It also ensures the discussion is balanced as it undertakes the topic from both sides: strengths and weaknesses. The strengths are discussed in the following part under the global perspective of AI-assisted language learning (Bin-Hady et al., 2023) and weaknesses are discussed towards the closure of this paper, leading to implications and a call for extending research on certain areas.

GenAI-Assisted Language Learning

Even before ChatGPT and its ilk, research into smart technology touched on technology-based language learning with the frameworks of CALL and MALL (Modhish & Al-Kadi, 2016; Schmidt & Strasser, 2019). The massive open online courses (MOOCs) and open educational resources (OERs) have been the themes of research studies for almost two decades (Montanucci, & Peconi, 2024). Quite recently, numerous researchers reported alterations to learning foreign languages (chiefly English) in formal settings and the rise of informal and incidental learning, thanks to AI-enabled models (Al-khresheh, 2024; Lee, 2024; Barrot, 2023; Jaboob et al., 2024; Pack & Maloney, 2023; Sok &Heng, 2024). Noticeably, GenAI has been increasingly infused into language programs within several models and frameworks, not the least Bin-Hady et al.'s (2023) AI-integrated language learning model. Crompton and Burke (2024) argued that GenAI models sustain student interest and revitalize their learning experience as they, in the major part, tailored to various purposes that possibly meet learners' individual requirements. Based on Crompton and Burke's (2024) advocation, the salience of LLMs, which vary in scope and potential, mainly lies in engaging and motivating learners, personalizing learning, instant evaluation and feedback, and augmenting formal learning—all are intertwined and contribute to effective learning (Jaboob et al., 2024). They enable learners to practice speaking (Pratschke, 2024), writing (Seo, 2024; Yang et al., 2024), and comprehension in a simulated real-world context.

Earlier studies of AI-based language learning provide foundations for understanding how NLP built on AI models benefit language learners in acquiring the target language (Kirana & Gupta, 2022). Over the last three years, several studies charted areas of the potential of LLMs, consistently indicating positive impacts on English language learning and teaching (Ali, 2023; Agustini, 2023; Lee, 2024; Barrot, 2023; Moqbel & Al-Kadi, 2023; Pack & Maloney, 2023).

Such studies, on the main, discussed the effectiveness of LLMs in cultivating language skills, comparing outcomes from AI-supported learning with traditional methods. Previous findings showed that LLMs generally support a better understanding of grammar, expanding vocabulary, and improving conversational skills and pronunciation. Likewise, Ali et al. (2023) and Nugroho et al. (2023) reported that AI-based models provide immersive language learning environments, enrich interactive and engaging learning experience and information retention skills. In a recent paper reporting from the Korean context, Van Horn (2024) explored the impact of ChatGPT on English language learning among university students, revealing a positive attitude towards ChatGPT despite some technical and language challenges. The study elaborated on ChatGPT's potential to enhance language skills and foster classroom engagement, collaboration, and active participation. Students in the study found the chatbot helpful to increase their confidence and collaborative learning experiences, as it facilitates a shift towards metacognitive awareness and autonomous learning. All these studies demonstrated how AI-driven language learning platforms analyze students' speech, offer corrections, and suggest improvements in real-time, which is particularly beneficial for students who may not have constant access to native speakers for practice.

Admittedly, ChatGPT has become a buzz word lately, and most of the existing LLMs-based studies homed in on its integration in English education. ChatGPT, as with its likes, is based on training on a diverse array of Internet texts and data (Jaboob et al., 2024) and fine-tuned by humans' feedback (Dizon, 2024), enabling it to address a wide range of topics and produce congruent responses (Bhullar et al., 2024; Nugroho et al., 2023). The other two LLMs can are considered in this study of no less importance for English learning and teaching because they are all essentially dependent on AI. Because Google has recently renamed Bard as Gemini and Microsoft's Bing Chat as Copilot, the new terms are used throughout the manuscript.

GenAI for Learning and Learners

AI has utterly transformed the way English is taught and learned in contexts where it is introduced to speakers of other languages who embrace AI-driven technologies (Dizon, 2024) to bolster their command of English and accomplish their learning tasks easily and effectively (Bin-Hady et al., 2023; Choukaier, 2024; Van Horn, 2024; Wei, 2023). Discussion of GenAI for language learners and learning can be encapsulated in the following part with relation to learning motivation, personalized learning, instant feedback, and scaffolding. These are interrelated aspects of English learning, and each is discussed below.

Learning Motivation

Of the individual difference, motivation is mooted a focal point in language learning as it plays a crucial role in determining the success of learners. A significant attribute of GenAI integration into ELT is its impact on learners' engagement in learning (Ali et al., 2023; Crompton & Burke, 2024; Wei, 2023; Yıldız, 2023; Zhou & Li, 2023). A substantial amount of research studies indicated a positive impact of ChatGPT, Copilot, and Gemini as CALL tools on learners' engagement and motivation at a high level of satisfaction. Lai et al. (2023) reported positive attitudes towards ChatGPT as a CALL tool, and in another study based on self-determination theory, Zhou and Li (2023) explored the impact of ChatGPT on learning

motivation. The study found ChatGPT impactful owing to its potential for language learning and thus insightful for theoretical and practical implications for educational reforms.

In a similar vein, Al-Qaysi et al. (2024), building on the behavioural reasoning theory and theory of planned behaviour, asserted that ChatGPT impacted students' performance. The perceived behavioral control and attitude were also mentioned as factors impacting students' use of ChatGPT in their learning. The positive impact on learner engagement and motivation indicates the importance of interactive and responsive learning environments. Zhou and Li (2023) is another study that supports using ChatGPT for motivational learning. The study, in some way, resonates Yıldız's (2023) study in which students showed interest in learning English through these tools with their in-built interactive and responsive features and for the instant feedback provided to users. Such feedback is a critical factor in maintaining learners' interest in learning.

Personalized Learning

GenAI has maximized personalized learning paths. AI studies underline its usefulness for adaptive content to meet individual learners' needs (Crompton & Burke, 2024). Several studies highlighted the role of AI tools in supporting learners with diverse needs, difficulties, and learning challenges. For example, Alzubi (2024), Jiang et al. (2021), and Wei (2023) speculated that AI is adaptable for personal learning activities. By catering to learners' styles and proficiency levels, AI tools can help in addressing the diverse needs of learners within the classroom setting and online learning platforms. The three models in question have been discussed as highly effective in providing personalized learning based on learners' proficiency levels and individual learning styles.

With the possibility of learning on the go, learners can find AI tools more convenient and flexible than learning traditionally (Dizon, 2024; Liu & Ma, 2023). Let alone game-based learning activities which satisfy learners' need for gamification. The ability to personalize learning underscores the importance of individualized language learning (Jaboob et al., 2024), and this indicates that personalized learning experiences and individual learning styles are augmented, ultimately enhancing learners' abilities to use the target language. Along with that, Bin-Hady and Ali (2024) confirmed that AI-based tools generally celebrate self-driven learning. Using these tools in learning English, with their interactive and responsive features, has been theorized as an extension of the technology acceptance model (Lai et al., 2023) which has been widely recognized in CALL and MALL research.

Instant Feedback

Undeniably, the LLMs under discussion offer learners immediate feedback, a feature that has proven to be of immense value. These models' real-time feedback and assessment capabilities facilitate formative assessments (Moqbel & Al-Kadi, 2023; Seo, 2024; Wei, 2023; Yang et al., 2024). This attribute is instrumental in language areas where students face challenges, and the immediate feedback thereby sustains their interest in learning (Wei, 2023). The immediacy of feedback plays a pivotal role in rectifying errors and augmenting learning. Prior research has shown that both learners and educators highly commend the instant LLMs-reliant feedback and automated assessment. They accentuate the value of immediate feedback, a feature that GenAI tools provide effortlessly, and such these synthetic models deliver instant personalized

responses to individual student work and inquiries (Montanucci & Peconi, 2024). For the most part, the ability of these tools to provide immediate feedback with a substantial advantage over traditional methods is what makes them more popular than other CALL and MALL tools. The question which is still open for discussion is about the extent the AI-generated feedback is valid and reliable?

Given the concerns of reliability of AI-based feedback, educators need to maintain continuous monitoring and evaluation. These tools can be employed in continuous monitoring and evaluation mechanisms to assess the effectiveness of AI tools in language education (Seo, 2024) and utilize the results to make informed adjustments, educational practices, and policies. In all of these, teachers' voice and decisions are of paramount significance. Human evaluators are still important and should never submit completely to the machine-generated feedback on learners' work and dedication. Besides, there is a risk of generating factually accurate, incomplete or biased outcomes, nonsensical and falsely referenced content. Also, reviewing and evaluating students' work implies responsibilities attributed to humans; AI-generated feedback on learners' achievements should not be taken for granted. Jillian et al. (2023) argued that taking the output of AI models at face value is a slippery slope, for it should undergo "critical review to prevent errors, missing key information, or making unrelated claims" (p. 2). This highlights the need for teachers' intervention to ensure that incorporating GenAI is effective and efficient in assessment practices (Seo, 2024).

Scaffolding Formal Learning

AI has been widely acknowledged for augmenting learning in several ways. The interactive capabilities of LLMs can be invested in designing engaging and immersive language activities (Crompton & Burke, 2024; Pratschke, 2024; Schmidt & Strasser, 2019) and in informal settings (Dizon, 2024; Liu et al., 2023), which, by the end of the day, reinforce and complement formal language learning (Sok & Heng, 2024; Van Horn, 2024). Arguably, successful integration of AI-based apps in formal and online learning brings about satisfying outcomes (Agustini, 2023; Jiang et al., 2024; Kirana & Gupta, 2022; Liu, & Ma, 2023). These studies demonstrated how LLMs lessen reliance on formal education; learners become less dependent on their teachers as these technological advances provide language learning opportunities beyond formal and institutionalized language education (Al-Raimi, et al. 2023; Agustini, 2023; Crompton & Burke, 2024). For instance, Duolingo, Lang AI, and Mira, which are conversational AI tools "offer learners a fantastic opportunity to practice speaking the language they are learning, without having to be in a classroom or lab" (Pratschke, 2024, p.34). As well, Ali et al. (2023) speculated that such AI tools offer a dynamic and responsive learning environment in which learners not only get exposure to the target language around the clock and get instant feedback on their performance but also boost their collaborative learning.

With these examples, it is possible to argue that AI makes many learning resources accessible anywhere at any time, facilitating the juxtaposition of formal and informal learning using tiny devices (e.g. smartphones), providing additional practice of the target language. While these gadgets have been generally affordable, disparities in Internet access and resource availability were observed in different learning contexts (Alzubi,2024; Modhish & Al-Kadi, 2016). Several studies accentuated diverse and inclusive content on these innovative platforms and treat daunting challenges, such as reliance on technology (Bhullar et al., 2024) and the

need to train teachers to integrate AI into their teaching (Al-khresheh, 2024; Chiu, 2023).

GenAI for Teaching and Teachers

A look into how GenAI benefits language teachers is worthwhile. The following part rests on how GenAI is beneficial for teachers in terms of classroom teaching, teaching materials, assessment, and self-initiated professional development.

Teaching Practices and Planning

LLMs can be supportive of language teachers in several ways. These technological innovations open new venues for instructional design and lesson planning (Pratschke, 2024). Crompton and Burke (2024), in a review study, scoped the benefits of ChatGPT as a working example of LLMs in language teaching. The authors pointed out that such a GenAI tool helps teachers generate ideas for planning their lessons and teaching techniques. The chatty LLMs can be used to generate dialogues, pictures, and other exercises in line with learning objectives (Pratschke, 2024; Torrent et al. 2023). On top of that is on-demand tutoring support for learners with special needs and interests (Sahari et al., 2023) as well as talented learners. Montanucci and Peconi (2024) pointed that "intelligent tutors, equipped with AI algorithms, deliver personalized language instruction tailored to individual learners' needs fostering learner autonomy" (p. 497). Numerous researchers have tapped into the possibilities of GenAI utilization for teaching tasks that help in reducing the teaching load (Al-khresheh, 2024; Choukaier, 2024; Kostka & Toncelli, 2023; Torrent et al. 2023).

Assessment

Teachers can find AI tools useful to reduce the burden of providing individualized learning and feedback to students. This is particularly significant for teachers with large classes wherein providing individualized tutoring and real-time feedback is a real challenge. Reporting from the South Korean context, Seo (2024) found ChatGPT useful to address this challenge. The study examined the advantages of ChatGPT for college students' narrative writing. Findings showed decrease in syntactic complexity and increased error-free texts as such a chatbot detects surface-level errors which helps teachers to devote much of their assessment time and effort for other aspects beyond the mechanism of writing (Yang et al., 2024). However, Koraishi (2024) argued against too much reliance on ChatGPT for grading students' writing, drawing more attention to crosschecking ChatGPT-based scoring by human evaluators. A common complaint that some teachers usually make is that they spend a big deal of their time checking their students' writing, and the thing is that teachers turn out to be plagiarism detectors instead of giving comments for improving learners' own skills. The onus is still on teachers to check originality of students' output, identifying learners' real abilities in producing content and possibilities of using AI tools for producing AI-enabled content. According to Atlas (2023), "while ChatGPT and other language models are advanced tools that can assist in teaching and learning, they cannot replace the unique abilities and skills of human educators" (p. 20).

Professional Development

Language teachers can find GenAI at their fingertips to facilitate opportunities for professional development (Atlas, 2023; Chiu, 2023; Luo, 2024). Particularly those teachers in under-

resourced contexts can find AI supportive in promoting their teaching performance and remain up to date. Chiu (2023) showed how GenAI can be beneficial for teachers' continuous professional development as it generates tips for improving their teaching. AI can also generate training programs for teacher-trainers who can adjust AI-generated training agenda for local training needs. In a guide to conversational AI in professional development, Atlas (2023) touched on several aspects which can be of interest to language teachers who want to keep their professional growth going. Nevertheless, this area needs more research to explore the extent teachers are motivated to use GenAI in their teaching and assessment. It is worthwhile exploring how GenAI tools affect teachers' trust of their learners (Luo, 2024).

Challenges

That GenAI is advantageous for foreign language learning and teaching is challenged by several snags. On the main, the ubiquity of AI has increased fear among educators who debate its impact on creativity, authorship, copyright, and privacy (Bin-Hady & Ali, 2024; Niloy et al. 2024). Besides, the increased reliance on AI technology purportedly encourages laziness among learners (Bhullar et al., 2024). The limitations that arise from biased responses and potential to perpetuate harmful language patterns are also additional concerns in academia (Nugroho et al., 2023). What is more, the current version of GenAI is still short of providing the same emotional support as human teachers (Atlas, 2023), and it may not fully understand the nuances of human language—an area of research which needs to be covered from multiple angles.

So far, the integration of LLM chatbots into ELT has been acknowledged not to be a one-size-fits-all context, nor is it ripe for effective use in contexts where the digital divide still poses access problems. Even in technology-rich contexts, existing studies cautioned against complete reliance on AI-based tools in language learning, evaluation (Ali, 2023; Bin-Hady et al., 2023), and translation (Sahari et al., 2023). Although these apps are generally accessible, inequalities were observed as to the internet connectivity and availability in different regions and there is a need for more inclusive and diverse content on these innovative platforms.

Last but also significant, using AI in language education has brought home ethical considerations. Choukaier (2024) asserted that the integration of AI in English learning and teaching considers not only the pedagogical benefits but also the ethical issues associated with AI in educational settings. Ethical challenges give way to debates around privacy, confidentiality, proprietary and plagiarism (Jaboob et al., 2024). These challenges heighten the need for ethical standards and policies to ensure responsible and honest deployment of AI technological advances in human activities. Concerns about ethics have been raised under the massive reliance on ChatGPT (Dizon, 2024), which has increased concern about ethical frameworks and guidelines for safe and secure AI uses in English programs and research. Several studies have undertaken ethical issues, including Niloy et al. (2024), and Ali (2023), showing concerns about using AI in education and need to be addressed properly and ethically.

Implications

The study provides implications for training, ethics guidelines, and more research to deepen our understanding of the role of conversational AI in language programs. The AI's sudden, rapid and explosive usage requires a careful approach and pedagogic underpinning. Users

succumb to the temptation of using AI on an ad hoc basis. Effective inclusion requires strategic planning for a balanced integration of these tools with traditional teaching methods. Training on how AI possibly complement educational objectives and planned outcomes (Van Horn, 2024) could be part of teacher professional development. It would help them integrate AI into ELT situations successfully and strategically (Crompton & Burke, 2024; Van Horn, 2024). Al-khresheh (2024) and Chiu (2023) argued for teacher training and a wealth of resources for effective integration of AI in teaching contexts. Teachers can also benefit from training on GenAI applications to detect ethical bias and plagiarized texts in their learners' work.

Learners as well as teachers using AI tools other than ChatGPT, Copilot, and Gemini such as Grammarly, Claude, and Google Translate always need to handle them ethically. They should acknowledge how they manifest such AI tools in their writing, translation, and other activities. The study also implies the need for more research to cover the depth and breadth of the impact of these LLMs on specific language aspects (vocabulary, grammar, pronunciation, and conversations) rather than considering language as one entity. Other aspects of language education, including acculturation, AI-based language change, and electronic mindset and its effects on today's digital generation, are still open for more in-depth exploration.

There are also implications for more research. This paper lays the groundwork for continued inquiry and advancement within the field of foreign language learning and teaching, not only English. Prior research focused on English and there is room for other languages to be represented in similar research landscape. There are many other second and foreign languages which are also taught as second and foreign languages and GenAI is part and parcel of the process. The study also gives way to further research trajectories and the maturation of GenAI in classroom settings as well as online learning platforms. Add to that the accessibility of these AI models for different audiences in light of current educational issues of accessibility, inclusivity, and equity. Data privacy and are also areas of research that need immediate exploration. Furthermore, existing research focused on ChatGPT with little inclusion of Gemini, and Copilot, and other GenAI applications (e.g. Claude), and most previous studies were centered on learners. Future research may also include teachers, parents, administrators, and curriculum designers to add their voices, worries, and insight for a more complete picture of the phenomenon.

Conclusion

This paper sketched the development of three conversational GenAI in English education. It underscores how teaching and learning practices have been transformed under the aegis of these models. Such GenAI continues to evolve. It has spilled over into such a status in language education and will likely become more integrated into foreign language programs. Hence, language educators need to constantly update their knowledge of these sophisticated apps to adopt teaching strategies accordingly. On the main, the study explored the extent GenAI has empowered teachers to harness its potential for more effective, engaging, and comprehensive language learning experiences. It also discussed how it has disempowered teachers in some ways. For a thoughtful integration, the study questions teacher professional development in so far as ethics of use are concerned. The thing is that AI in the last two decades coincided with a generation who is sick and tired of long lectures in the classrooms that they forget all about once they return to their smart AI-enabled hand-held devices. Without investing such

appliances in teaching the digital generation, it would widen the gap between what they learn formally and what they learn on their own. This succinct account is insightful for educators, researchers, and policymakers, and other stakeholders who may want to harness the potential of LLMs in a way that responsibly and ethically improves the quality and effectiveness of language learning experiences. The integration should align with the objectives of language programs. A balanced approach that integrates these tools with traditional teaching methods in contexts that still suffer digital divide is a key to modern curricula.

ORCID

https://orcid.org/0000-0003-3805-7507

https://orcid.org/0000-0003-3079-5580

Ethics Declarations

Competing Interests

No, there are no conflicting interests.

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