**The AI Revolution in TESOL: Teaching, Learning, and Innovation – The Ethical Dimensions of AI in Education**

Vickie Miller

Abstract

This paper explores the intersection of Artificial Intelligence (AI) and Teaching English to Speakers of Other Languages (TESOL). This paper offers insights into defining AI within TESOL education, reviewing literature that highlights both its advantages and ethical challenges, and understanding the responsibilities educators hold in implementing AI-driven solutions. While AI offers personalized learning experiences and enhances accessibility, it also raises concerns regarding equity, data privacy, algorithmic bias, and cultural sensitivity. Findings indicate that leveraging AI's transformative potential while maintaining ethical obligations is possible as TESOL educators.

***Keywords*:** ethical considerations in AI**,** AI in education, TESOL and AI, language teaching and technology

1. Introduction

In the movie "The Imitation Game," the main character, mathematician Alan Turing, develops a machine that decodes encrypted German messages (Tyldum, 2014). In World War II, the Germans used these "Enigma Codes" to communicate battle positions and strategy against the Allied Forces. Turing invented a machine that was able to decipher the Enigma. As excited as Turing and his team were with the new-found capability, the invention presented an ethical dilemma for Turing and his team. Based on the movie, if they shared the decoded information, the Germans would know that Enigma had been figured out and would change course; thus, the chances of ending the war would have been throttled. Even though soldiers and assets could have been saved and protected, Turing decided to share limited information with the Allies to keep the discovery secret. The war eventually ended, and Turing and his invention are ultimately credited for helping to end World War II. Turing's machine, an early example of Artificial Intelligence (AI), provided benefits while raising ethical and moral concerns with the advent of the technology. Like created by Turing’s invention, the integration of AI has ushered in a transformative era for language education. From personalized learning experiences powered by machine learning algorithms to immersive environments created through virtual reality (VR) and augmented reality (AR), AI is redefining how educators teach and how students learn (Mohamed, 2024).

However, this technological revolution is not without its challenges. As AI systems

become increasingly sophisticated, ethical concerns surrounding their use in education have

come to the forefront. Issues such as data privacy, algorithmic bias, transparency, and the

changing role of educators demand careful consideration (Mohamed, 2024).

Mohamed underscores that the risks of excessive data collection and the lack of robust

Privacy frameworks, which could compromise student autonomy and trust (2024).

The ethical dimensions of AI in TESOL extend beyond technical concerns to broader

pedagogical and andragogical implications. The role of educators is shifting from being mere

transmitters of knowledge to facilitators and collaborators in a digitalized learning

environment (Mohamed, 2024). As a result, professional development is necessary to equip

teachers with the ongoing skills to effectively integrate AI tools while maintaining

educational integrity.

As language educators navigate this rapidly advancing landscape, it is imperative to strike a balance between leveraging AI's potential and addressing its ethical challenges. Based on the foregoing, a suitable research question to guide the writing of this article was as follows: What are the ethical considerations in using AI in TESOL education? In this light, a review of relevant literature was undertaken to acquire a deeper understanding of the body of scholarship that is relevant to this article.

2. Literature Review

Four areas of literature were reviewed to understand AI's ethical considerations related to TESOL education. To ground understanding and set the stage, literature was reviewed to define AI technology, the role of TESOL educators and AI, and global trends of AI in language education research and publication output. The literature review concludes with a look at the ethical considerations of using AI in TESOL education.

**2.1 Definition of Artificial Intelligence**

Significant advances in computing technology have occurred over the decades. From Turing's Machine in the 1940s to personal computing available through laptops, iPads, and mobile devices in the present day, technological innovations have spawned unparalleled quality of life and economic opportunities. Some scholars have designated modern-day uses as the "Second Digital Revolution" (Yigitcanlar et al., 2021). Makridakis says AI will be more impactful than previous technological advancements (2017).

What is the definition of AI? Chichekian and Benteux define AI as "computing systems that can engage in human-like processes such as learning, adapting, synthesizing, self-correction and use of data for complex processing tasks" (2022, p. 1). In the educational context, AI is defined more specifically as the use of integrated networks to design, monitor, and adjust curriculum, delivery of learning services, and student platforms and infrastructure (Ouyang & Jiao, 2021). These AI capabilities not only reduce costs (Kaiser et al., 2021), but increase operational efficiencies (Ouyang & Jiao, 2021).

**2.2 Defining Roles and Responsibilities of TESOL Educators**

The integration AI into education has revolutionized the teaching and learning landscape, particularly the TESOL field. AI tools such as ChatGPT-4, Grammarly, and Duolingo (Botha et al., 2025; Mohamed, 2024), for instance, have introduced new ways of personalizing learning, automating administrative tasks, and enhancing lesson delivery (Mohamed, 2024; Ouyang &Jiao, 2021). However, the role of TESOL educators remains pivotal in ensuring that AI is used effectively, ethically, and equitably.

The role of teachers have been an important part of education and society at large. The role of TESOL educators in the AI era continues to extend this role as both a dynamic and indispensable feature. Specifically, by leveraging AI tools thoughtfully, educators and researchers can enhance personalized learning, streamline administrative tasks, and provide constructive feedback (Mohamed, 2024). However, educators and researchers must also address ethical concerns, advocate for equity, and preserve the human connection that is central to language education (Chan & Coney, 2020). As AI continues to evolve, the professional development of TESOL educators will be crucial in ensuring that these tools are used effectively and responsibly. By embracing the opportunities and addressing the challenges of AI, TESOL educators can lead the way in transforming language education for the better (Mohamed, 2024).

**2.3 Global Trends of AI in Language Education Research and Publication Output**

AI has introduced transformative changes in language education by enabling personalized learning experiences, automating repetitive tasks, and providing real-time feedback to learners. Tools such as chatbots, virtual tutors, and AI-driven language learning platforms have become increasingly popular. These advancements have not only improved the efficiency of language teaching but also expanded access to quality education globally.

Between 2017 and 2023, there was a significant increase in publications related to AI in language education. Jaleniauskiene & Daniusevicuite-Brazaite reported a 189.8% rise in the number of publications during this period, highlighting the growing interest in this field (2023). Similarly, the study retrieved 2,609 documents from the Web of Science database for the period between 2018 and 2022, indicating consistent annual publication rates (Jaleniauskiene & Daniusevicuite-Brazaite, 2023).

**2.4 Ethical Considerations of AI in TESOL Education**

There are identified ethical challenges associated with AI and TESOL education. In research centered around accessibility and inclusivity in AI-driven language learning tools, the technology can have a dissociative impact on digital equity (Marshall, 2023). In general, educators have an ethical responsibility to ensure that access to services and benefits that contribute to learning attainment are experienced as equitably as possible (Marshall, 2023). Research shows that the digital divide exists, defined as the gap in access between groups that have access to basic technology tools such as broadband internet and a home computer and those that do not (Marshall, 2023). In particular, in the United States, broadband access is limited in predominately minority and low-income communities (Pew Research Center, n.d.).

Additionally, research reveals that there is an inherent bias in AI systems. Marshall shares that algorithms through machine learning can target data in ways that limit diverse perspectives and learning opportunities based on historical biases (2023). Potentially, learners "become siloed by interest and develop confirmation biases that solidify ideologies" (Marshall, 2023, p. 111). As highlighted by Mohamed,

In the context of language teaching and learning, this raises serious concerns when AI is used for developing content and curriculum, personalized learning recommendations, offering feedback and corrections, or even in decision-making based on biased data about learners’ first language, gender, cultural and linguistic background, ethnicity, and certain accents. (2024, p. 4)

To benefit from AI in their education, educational leaders must understand the technical aspects and impact on equity (Rhinesmith & Jiang, 2022).

3. Methodology

This narrative literature review aims to explore the ethical considerations surrounding the use of AI in TESOL education. As AI technologies increasingly permeate educational contexts, it is crucial to understand the implications for TESOL educators, learners, and the broader educational landscape. This methodology statement outlines the approach taken to gather, analyze, and synthesize relevant literature on this topic. The primary research question guiding this review is: "What are the ethical considerations that TESOL educators must address when integrating AI technologies into their teaching practices?"

A literature search was conducted using multiple academic databases, including Google Scholar, ERIC, JSTOR, and ResearchGate. The search employed a combination of keywords and phrases such as "AI in education," "ethical considerations in AI," "TESOL and AI," "AI ethics for educators," and "language teaching and technology." The search was limited to peer-reviewed articles and books published within the last ten years to ensure the relevance and currency of the findings.

Studies that specifically address the intersection of AI and TESOL education, articles discussing ethical frameworks, guidelines, or case studies related to AI in educational settings, and research that highlights the perspectives of educators, learners, and stakeholders in the TESOL field, or education generally, were included in the review. Literature that focuses solely on technical aspects of AI without addressing ethical implications and non-peer-reviewed sources or articles published prior to 2013 were excluded from the review.

4. Results

The advent of AI technology has sparked considerable interest due to its potential to revolutionize numerous sectors, with education being at the forefront. Particularly within TESOL, AI tools are emerging as game changers, offering personalized learning experiences and improved accessibility for diverse learners (Mohamed, 2024).

AI's capability to customize educational content to fit individual student profiles is one of its most compelling features. By analyzing personal learning styles, proficiency levels, and interests, AI can create a more engaging and effective learning environment (Mohamed, 2024). This tailored approach not only enhances student engagement but also significantly improves retention rates, making the learning process more enjoyable.

However, the integration of AI into educational settings is fraught with challenges (Mohamed, 2024). A primary concern is the issue of equity and access (Chan & Coney, 2020; Mohamed, 2024). Disparities in technology availability can exacerbate existing educational inequalities, potentially sidelining certain groups of learners (Pew Research Center, 2019). Digital access, especially to broadband, remains a challenge (Mohamed, 2024). For TESOL educators, it is essential to recognize and acknowledge this reality.

Algorithmic bias is another critical challenge in the deployment of AI for educational purposes. If AI systems are not carefully crafted and monitored, they risk perpetuating biases inherent in their platforms (Mohamed, 2024). This reliance can result in unfair treatment of specific student demographics, countering the ultimate objective of fostering an inclusive educational environment (Mohamed, 2024).

Cultural sensitivity is also paramount in the design of educational AI tools. Developers must ensure that these tools are attuned to the diverse cultural contexts of learners, minimizing the risk of misrepresentation or misunderstanding of complex linguistic and cultural nuances (Mohamed, 2024).

5. Discussion

There are distinct ethical challenges to using AI in TESOL education. These considerations include algorithmic/cultural bias and broadband access. For AI to be a robust tool for educators, these three topics should be considered.

First, there is a concern with AI being used to maintain systemic discriminatory practices through algorithms upon which platforms are built. Rhinesmith & Jiang posit that "the experience an individual has with digital technologies, including the financial rewards they can receive from applying these skills in the workforce, are deeply influenced by the structures of power in society" (2022, p.107). For example, AI's predictive capacities automate credit decisions for car loans, mortgages, and rental units (Mashall, 2023). Although there are laws that prohibit unfair and disparate treatment, violations do occur (Marshall, 2023). In education, AI algorithms are formulated based on data (and assumptions) from the built environment, it is reasonable to project that algorithmic bias through AI also exists (Mcintosh et al., 2024). With AI bias, is it ethical to use that technology in the TESOL learning and development space? The use of generative AI tools, for example, could unwittingly promote unconscious bias related to cultural differences, raising the prospect of TESOL students feeling excluded from the educational environment. As research indicates, “cultural incongruencies can result in harms, such as barriers, hegemonic classifications, safety gaps, value violations, and erasure (Prabhakaran et al., 2022).

Second, AI platforms require broadband access. Broadband is an “internet service delivered at speeds at or above the FCC's definition, regardless of the technology used to provide the service" (North Carolina League of Municipalities, n.d., p.12). For instance, in the state of North Carolina in the southern part of the United States, there are 637,671 people who need access to broadband service as defined by the Federal Communications Commission minimum standards (North Carolina League of Municipalities, n.d.). With eight percent of North Carolina's population lacking broadband access, there are likely students in the TESOL space who are impacted as well. Since broadband access is needed to take advantage of the benefits (Buttice, 2022; Laitinen & Stenvall, 2017; Stratton, 2021; Woldesenbet & Klay, 2016, Yigitcanlar et al., 2021) of AI for language learning, ethical issues arise where the deployment of a tool that a portion of the intended cohort cannot access. Unfortunately, “Without examining the structure of the information economy and its relation to inequality, distributive interventions cannot transform the problem of dig

ital inequality, nor can they create nonmaterial social goods such as empowerment and opportunity for marginalized people” (Stratton, 2021, p.50).

6. Conclusion

The integration of AI into TESOL and the educational field presents both transformative possibilities and profound ethical dilemmas. As this paper has discussed, AI is becoming a driving force in personalizing learning, breaking access barriers, and automating administrative tasks, all of which will completely transform the paradigm of language learning. Yet, the transformation will have significant ethical implications, which TESOL professionals must consider and negotiate.

There are concerns around algorithmic bias and digital equity. If not thoughtfully designed and supervised, AI systems can replicate historical biases and inequalities — the exact opposite of the inclusivity that education systems should foster. Additionally, the digital gap remains a concern, as differential access to broadband can hinder underprivileged sectors from benefiting from AI-driven educational services and advancements. Echoing the literature, educators must parlay their knowledge and position to advocate for equitable access and ensure that AI is used to embrace and support the diverse cultural contexts of learners.

Continued professional development for TESOL educators is necessary to harness the full potential of AI in TESOL, while addressing related ethical concerns. This approach will prepare them to incorporate AI thoughtfully and responsibly in their teaching practice. By developing a more cooperative, collaborative-minded approach to ethical issues, TESOL teachers can go a long way towards helping to ensure a fairer and more just playing field in the language education discipline.

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**Bionote**

Vickie Miller is a distinguished leader in learning and development. As the founder of Catalyzing Learning Services, LLC, her company is an exclusive provider of INTESOL Worldwide courses and franchises throughout the Southern States in the USA. Vickie holds Bachelor's and Master's degrees in Education from the University of North Carolina at Chapel Hill. She is pursuing her doctorate in leadership at the University of the Cumberlands, with an expected graduation date of 2027.