

An Albatross on the Neck: Implications of Artificial Intelligence in a Fijian University's ESL Classrooms

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Abstract

With the inclusion of innovative technological advancements in English as a Second Language (ESL) classrooms, it is now possible to predict the future of ESL learning in Fijian universities, where Artificial Intelligence (AI) is ubiquitous. This study seeks to explore the perceptions of university ESL educators regarding the incorporation of Artificial Intelligence (AI) technologies in their classrooms. By leveraging the power of AI, educators can provide personalized feedback, adaptive learning experiences, authentic resources, and collaborative opportunities for students. The respondents for this study consist of ten ESL university educators, who were selected purposefully based on their expertise and familiarity with AI technologies. By exploring the perspectives of these educators, this research seeks to gain insights into the effectiveness, challenges, and potential benefits of AI integration in ESL education at a university level. The findings indicate that these educators have optimistic, as well as pessimistic perceptions towards the use of AI. The results also highlight the importance of considering students' motivation levels and educators' technological and pedagogical competence when integrating AI into the ESL classrooms. Also, this research provides insights into the educators' perceptions and sheds light on the considerations needed for effective implementation of AI technologies in university's ESL education.

Keywords: *artificial Intelligence, ESL education, university classrooms, language acquisition, AI technology*

Introduction

Artificial Intelligence (AI) and its automation capabilities have the potential to revolutionize education. As technology continues to advance, it brings forth new challenges and demands for both educators and learners. While we are still grappling with the impact of Internet and Communication Technology (ICT) in our classrooms, we must now prepare ourselves for the transformative power of AI. Artificial intelligence, according to a recent study by Muller (2022), is a group of sciences, theories, and techniques intended to mimic human cognitive skills in robots. AI has recently entered the realm of education and has been marketed as a pedagogical tool for advanced instruction both inside and outside of classrooms. AI is increasingly being used to improve effective learning opportunities. In addressing the disruptive effects of AI in higher education, it is critical to emphasize the

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importance of educators acquiring specific skills to navigate this changing landscape (Orhani, 2023). AI offers educators novel tools and resources that have the potential to reshape traditional classroom practices. This holds true across various subject areas, including English as a Second Language (ESL).

AI technology has permeated various aspects of education, offering innovative solutions to enhance the learning experience. The realm of education has witnessed significant advancements with the integration of AI technology. Through extensive literature studies, it has become evident that AI has found applications in a multitude of key areas within education. According to Qianjing & Lin (2021), the role of AI has significantly strengthened the development of innovative teaching and knowledge-sharing methods. AI has revolutionized the educational landscape by offering powerful tools and technologies that enhance teaching and learning experiences.

As a matter of fact, a large and growing body of literature has consistently highlighted the potential benefits of integrating AI in language teaching and learning contexts. Numerous studies, including those by Ma (2018), Deng (2022), and Yu (2022), have provided compelling evidence supporting the positive impact of AI on language education. These studies have shed light on the various ways in which AI can enhance language learning experiences. AI-powered tools and applications have been shown to facilitate personalized learning, adaptive instruction, and intelligent feedback, catering to the individual needs and learning styles of students. By leveraging AI technologies, language instructors can offer tailored and targeted support, promoting more efficient and effective language acquisition.

In this context, this study seeks to explore the perceptions of English as a Second Language (ESL) Fijian university educators regarding the incorporation of AI technologies in their classrooms. As AI continues to advance and shape various sectors, including higher education, it is essential to understand how ESL university educators perceive and navigate the integration of AI tools and applications in their instructional practices.

Despite the growing use of Artificial Intelligence in language education, limited studies have specifically examined how ESL educators in Fijian universities perceive the opportunities and challenges of integrating AI into classroom practices. Therefore, this study aims to explore the perceptions of ESL university educators regarding the implementation of AI technologies in their classrooms. Specifically, the study investigates the perceived benefits, challenges, ethical considerations, and recommendations related to AI integration in ESL teaching. The findings are expected to contribute to a better understanding of AI adoption in higher education and provide practical implications for effective and responsible AI implementation in ESL contexts.

Literature Review

Applications of AI Technologies in Education

Applications of AI technologies in education have rapidly expanded in recent years, offering innovative solutions to enhance teaching and learning experiences. The potential of AI in education is vast, encompassing various domains and benefiting both educators and learners. Below are some of the key applications of AI technologies in the field of education that are explored:

a) The automatic grading system, which uses machine learning algorithms to grade student work and deliver prompt feedback, is a notable use of AI technology. This guarantees consistent and impartial grading, while also saving teachers a significant amount of time.

b) Another feature is the interval reminder, which uses AI-powered systems to remind students of deadlines, study sessions, and impending test payments in order to help them stay organised and efficiently manage their time. These prompts assist students stay on track with their learning objectives and improve their time management abilities.

c) Additionally, AI technology helps teachers provide students constructive criticism. Teachers may provide individualised feedback based on the needs of each student by using AI to help them access data-driven insights and analytics. More individualised education is made possible by this focused feedback, which promotes student development.

d) Another use of AI in education is virtual teachers, who provide a dynamic and engaging learning environment. These virtual instructors create a dynamic and captivating learning environment by using AI algorithms to interact with students, present lectures, and offer assistance.

e) Another important use of AI in education is personalised learning. To create personalised learning paths, AI systems evaluate student data, including learning preferences, skills, and shortcomings. By ensuring that activities and information are customised to each student's needs, this method maximises learning outcomes.

f) Personalised learning, in which AI systems continuously modify the learning process based on student performance and progress, is closely related to adaptive learning. Adaptive learning platforms use data analysis and real-time evaluations to modify the content delivery, pace, and degree of difficulty to each student's level of competency and learning speed.

g) The combination of augmented reality and virtual reality (AR/VR) and AI creates new opportunities for interactive and immersive learning. By enabling students to interact with simulated scenarios, conduct virtual experiments, and explore virtual settings, AR/VR technologies promote deeper learning and engagement.

h) Another area where AI technology has advanced significantly is accurate reading. Students may get precise and comprehensive information from a variety of sources thanks to AI-powered tools that analyse and comprehend text using machine learning and natural language processing techniques.

i) An emerging use of AI is the intelligent campus, which makes use of smart technologies to improve services and operations on campus. AI-powered technologies can provide a more effective and connected learning environment by streamlining administrative procedures, enhancing campus security, and optimising resource allocation.

Furthermore, especially after the COVID-19 epidemic, AI has been crucial in enabling remote learning. By offering virtual classrooms, video conferencing capabilities, and interactive learning resources, AI-powered platforms facilitate remote teaching and learning and guarantee educational continuity despite geographical obstacles. Recent studies have demonstrated the advantages of using AI-generated feedback to help university students with their academic writing (Goundar and Li, 2026). However, academics and teachers in the field of language education show some ambivalence regarding the employment of AI technologies in language classrooms, despite the promise of personalised learning (Orhani, 2023).

Even if a lot of research highlights the possible advantages of using AI in language learning, there are several issues and reservations that need to be addressed. On the one hand, proponents of AI technologies contend that they may offer customised learning experiences based on the unique requirements and preferences of each learner. AI-powered language learning programs and platforms can monitor students' progress, adjust to their

skill levels, and offer tailored feedback, all of which can improve their language learning experience. AI-powered chatbots and virtual language teachers can also provide lively and interesting dialogues, enabling students to hone their language abilities in a helpful and accepting setting. *AI tools used in English as a Second Language (ESL) University Classrooms*

AI gives ESL students individualised guidance and creative ways to improve language learning experiences. AI technologies are made to help teachers and students with grammar, vocabulary, pronunciation, and speaking abilities, among other elements of language learning. These technologies offer interactive and adaptable learning experiences by utilising machine learning algorithms, natural language processing, and other AI techniques.

In particular, AI provides teachers with a variety of cutting-edge tools and resources that have the ability to improve and transform conventional methods in ESL classrooms (Douglas, 2022). Teachers may use AI to provide more individualised and engaging learning experiences for their students by utilising intelligent tutoring systems, automated language evaluation tools, and virtual language assistants. Apart from conventional grammar-focused applications, a number of additional AI technologies have transformed the process of learning English as a second language. These tools improve a variety of language skills by providing a variety of interactive and customised learning opportunities. Here are a few instances:

a) **Language Tutoring Systems:** AI-driven tutoring programs give students interactive lectures and drills. These systems assess student responses, provide feedback, and make tailored suggestions for improvement using natural language processing (NLP) algorithms. They can mimic dialogues, help with pronunciation, and give immediate feedback on speaking abilities.

b) **Virtual Language Assistants:** Chatbots and other virtual language aides give students the chance to practise and converse in the language. These AI-powered helpers can converse, respond to enquiries, and provide vocabulary and sentence structure recommendations. Through engaging dialogues with these virtual aides, students can hone their writing and speaking abilities.

c) **Speech Recognition Technology:** AI-driven speech recognition technology enables students to hone their speaking and pronunciation abilities. When students talk into a microphone, the technology evaluates their speech and gives them feedback on their intonation, correctness, and fluency. This aids students in pinpointing their areas of weakness and striving for more precise pronunciation.

d) **Language Learning Apps:** There are many AI-driven language learning apps that provide in-depth language instruction. These applications employ AI algorithms to modify the course material in response to students' performance and advancement. To improve vocabulary, grammar, listening, and reading skills, they offer a range of activities, tests, and games. For an immersive language learning experience, several apps also include elements of virtual reality (VR) or augmented reality (AR).

e) **Intelligent Writing Tools:** AI tools have also been used to help students become better writers. By analysing students' writing, intelligent writing tools can make recommendations for sentence structure, grammar, and vocabulary. These resources can help students improve their writing skills by pointing out typical mistakes, suggesting different words, and offering advice on writing styles.

f) **Language Learning Platforms:** All language abilities are covered in comprehensive language courses offered by AI-powered language learning platforms. These platforms provide tailored exercises, information, and evaluations based on each learner's needs and

progress through the use of adaptive learning algorithms. To increase student motivation and engagement, they might also include gamification components.

All things considered, these AI tools provide students with individualised, interactive, and easily accessible language learning opportunities (Douglas, 2022). They enable students to advance at their own speed and concentrate on areas that need development by providing instant feedback, flexibility, and real-world practice chances. Learners can gain improved language acquisition and a more interesting learning process by integrating AI technologies into ESL instruction. In addition to the AI tools listed above, Douglas (2022) has found the following AI technologies that can be utilised in ESL classrooms:

a) Duolingo: A well-known AI-powered language learning tool, Duolingo provides interactive exercises and tutorials for learning English as a second language. It makes use of AI algorithms to monitor students' progress, adjust to their skill levels, and give tailored feedback. The website offers a variety of language skills, including speaking, writing, listening, and reading, and it uses gamification techniques to make learning fun and interesting.

b) Grammarly: Grammarly is an AI-powered writing tool that helps students get better at writing in English. It evaluates written material and offers immediate judgement on style, clarity, grammar, spelling, and punctuation. The program helps students improve their writing accuracy and proficiency by using sophisticated AI algorithms to find mistakes and offer fixes.

c) Lingvist: English as a foreign language is one of the individualised language courses offered by Lingvist, an AI-powered language learning platform. AI algorithms are used to modify the course material according to the language skills and learning styles of the students. Lingvist uses spaced repetition strategies to maximise learning effectiveness while concentrating on vocabulary acquisition. Additionally, the platform offers performance metrics and immediate feedback to monitor students' advancement.

d) Langotalk: Often regarded as a leading candidate for the "gold standard" among AI tutors, Langotalk is an AI-powered language learning platform created to support conversation-based learning. Users can converse or communicate with AI bots that provide tailored feedback and training to help them learn up to six times more quickly. For people who have a rudimentary understanding of their target language and want to increase their fluency through frequent, individualised practice, Langotalk is especially advised.

e) ELSA Speak: An AI-powered English pronunciation software called ELSA Speak was created to assist students in becoming more fluent speakers of the language. The software analyses trainees' pronunciation using AI algorithms and provides tailored feedback. It helps students acquire proper pronunciation and intonation by providing a variety of practice tasks and real-time assistance.

The aforementioned AI solutions use cutting-edge technologies to improve English language learners' educational experiences. They build an interesting and interactive language learning environment, track progress, and offer personalised feedback by integrating AI algorithms and adaptive learning methodologies. Additionally, when time is of the essence, AI tools can help teachers reach out to individual pupils (U.S. Department of Education, Office of Educational Technology, 2023). As teachers, we frequently come across circumstances when a lack of class time makes it impossible for us to provide each student individualised attention. However, by providing extra assistance and resources catered to the unique requirements of students, AI tools can aid in closing this gap.

It is crucial to remember that although AI programs can be useful tools for teachers, they shouldn't take their position. AI cannot replace educators' human touch and knowledge of each student's particular requirements, feelings, and learning preferences. AI tools should be viewed as supplementary tools that improve teachers' teaching methods and help them better meet each student's unique needs.

Method

To better understand the phenomenon being studied, the researcher used qualitative research methodologies in this study. A naturalistic method that emphasises interpretation and meaning making is what defines qualitative research (Croker, 2009). The researcher used literature studies and interviews to collect and assess data.

This study's literature review component entailed a thorough investigation of previous studies and academic publications pertaining to the subject. This method made it possible to combine and extract important findings from earlier research, which provided the basis for this investigation. Reviews of literature are useful for understanding how knowledge has evolved, finding sources of inspiration for policymakers, encouraging the creation of new concepts, and directing study in certain areas.

Additionally, Interviews were also used in the study to gather primary data. Some of these interviews were conducted via Zoom sessions, while others were performed in-person by the researcher. The researchers were able to obtain in-depth ideas, viewpoints, and experiences pertaining to the research issue thanks to the interviews' significant qualitative data.

The study intends to discover rich and nuanced information, delve into the complexity of the subject matter, and obtain a thorough grasp of the research issue by utilising qualitative research methods like literature review and interviews. By identifying the gaps, this method adds to the body of knowledge in the field and provides insightful information about the phenomenon being studied. Make sure that each entry in the reference list has an in-text citation.

Given the novelty of AI technology and the limited familiarity of ESL educators with its applications, this study adopted a purposeful sampling approach (Rai & Thapa, 2015).

Purposeful sampling involves deliberately selecting participants, who can provide relevant insights and align with the objectives of the study. By employing purposeful sampling, the researcher ensured that the participants' experiences and perspectives on integrating AI in ESL university classrooms would contribute valuable and meaningful data to the research.

The sample consisted of 10 faculty members from a university, including seven women and three men, with an average age of 43 years ($SD= 9$). Among the participants, two held a PhD degree, accounting for approximately 20% of the sample. Additionally, 8 faculty members possessed a master's degree, signifying their strong educational background and sound knowledge in their respective fields.

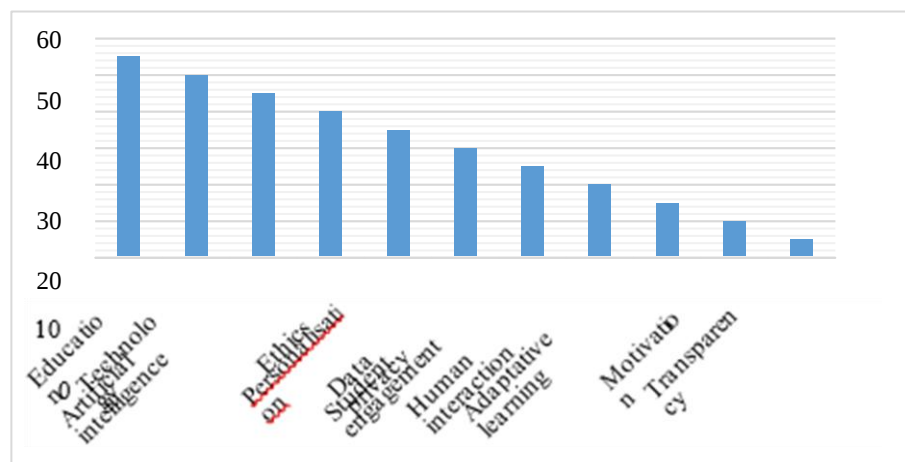
Results

This section presents the insightful findings obtained through the analysis of interview data utilizing coding techniques. The primary objective was to explore the role of Artificial Intelligence (AI) in English language learning, specifically within the context of faculty members' experiences with AI. By conducting these interviews, the aim was to gain a deeper understanding of the impact of AI on various aspects of language acquisition, student engagement, and overall learning outcomes.

The researcher was able to systematically analyse the interview data and extract meaningful insights. The coding facilitated efficient organization and categorization of the data, enabling the researcher to identify recurring themes and patterns within the responses provided by the faculty members. This rigorous coding process allowed him to draw robust conclusions and provide valuable insights into the effectiveness and potential of AI in English language learning within higher education settings.

Visually, figure 1 below represents the relationships and connections uncovered through the analysis, illustrating the complex interplay between AI, language learning, and various outcomes. The comprehensive examination of the data shed light on the diverse ways in which AI impacts educators' utilization of AI tools, ethical considerations, and provided the researcher with valuable recommendations for future implementation.

Figure 1. Educators' use of Artificial Intelligence through identified codes



Based on the results of the interview analysis above, the researcher obtained four relevant subjects in this study. All the four subjects are stipulated below:

Technology: It is viewed as a powerful tool that enhances teaching and learning experiences.

- Artificial intelligence: Artificial Intelligence (AI) is as a cutting-edge technology that enables machines to learn, reason, and perform tasks traditionally requiring human intelligence.

- Education: It is as a transformative journey that equips students with the necessary knowledge, skills, and values to succeed in a globalized world.

- Ethics: Ethics is considered as a moral framework that shapes individuals' behaviour and decision-making in educational contexts.

AI technologies are integrated into English language learning, the challenges and opportunities they present, and the ethical considerations that arise. Furthermore, we discovered valuable advice and recommendations from the faculty members who shared their experiences and expertise in incorporating AI into their teaching practices.

The interviews conducted for this study were facilitated through Zoom sessions, an online communication platform. Given the nature of the research and the geographical dispersion of the participants, conducting the interviews remotely was a practical and efficient approach. Using Zoom as the medium for interviews allowed us to overcome geographical barriers and connect with participants regardless of their location. It provided a convenient

and accessible means of communication, enabling us to engage with a diverse group of individuals in real-time.

The Zoom sessions offered a collaborative and interactive environment, resembling face-to-face interviews to a certain extent. Through video conferencing, the researcher was able to establish visual and auditory connections, which enhanced the quality of the interviews. It also provided a platform for non-verbal cues and expressions, allowing for a more nuanced understanding of the participants' perspectives. Below, the researcher presents a selection of opinions from this group of faculty members:

- Regarding learning results, I have seen discernible gains in pupils' fluency and language skills. With the AI chatbot's immediate feedback on grammar, vocabulary, and sentence structure, students may instantly fix their errors. Fac-03
- In my ESL classrooms, AI technologies have significantly increased student engagement and learning outcomes, especially with the usage of adaptive learning systems. Fac-07
- As students discover that the material is more pertinent and suited to their requirements, I have seen a rise in motivation. Fac-02
- I would advise ESL teachers who are thinking about implementing AI in their classrooms to look into various AI tools and applications that fit their teaching objectives and the needs of their students. Fac-11
- In my ESL classrooms, the use of AI-powered language analysis tools has significantly improved student engagement and learning outcomes. Fac-01
- In our ESL lessons, ethical issues pertaining to AI technologies are crucial. We make sure that the AI tools and applications we deploy are based on moral standards and comply with data privacy laws in order to address these issues. Fac-04
- In my ESL classroom, I've used AI-powered virtual language helpers like Google Assistant. These helpers can converse with students, respond to their enquiries about language, and offer pronunciation assistance. Fac-08
- We place a strong emphasis on using AI in language learning responsibly. We talk to kids about the value of critical thinking and assessing the data that AI tools present. Fac-12
- Students' incentive to improve their pronunciation has grown due to the interactive aspect of the AI-powered pronunciation aids. Pupils value being able to monitor their development over time and receive accurate feedback. Fac-05

These responses consistently indicate that educators perceive AI as a valuable pedagogical tool that enhances language learning through personalized feedback, increased student engagement, and adaptive learning opportunities. Nevertheless, concerns regarding ethical issues, data privacy, and the responsible use of AI also emerged as recurring themes, suggesting that successful AI integration requires both technological competence and appropriate institutional support.

Discussion

The results of this study clarified how artificial intelligence (AI) is incorporated into English language instruction and offered insightful information about its efficacy and potential in higher education (Douglas, 2022). Faculty members' viewpoints and experiences about the application of AI in language learning, engagement, and general learning outcomes were disclosed through the interviews.

However, unlike many previous studies that primarily emphasize the pedagogical advantages of AI, this study reveals that educators simultaneously express optimism and

concern regarding ethical considerations, technological readiness, and students' motivation. These findings highlight that AI implementation in developing educational contexts requires balancing technological innovation with responsible pedagogical practice.

The ambivalence amongst researchers and educators regarding the employment of AI technologies in language classrooms was one crucial factor that surfaced from the interviews. Even though AI offered individualised instruction and demonstrated potential advantages for language learning, educators continued to have misgivings and concerns (Orhani, 2023). The novelty of AI technology and the need for more research and comprehension of its consequences in educational contexts are two possible explanations for this ambivalence.

The ethical issues surrounding AI in language learning are another important topic. Data privacy, algorithmic bias, and the moral application of AI tools and applications were among the issues brought forward. It was underlined how crucial it is to guarantee accountability, equity, and transparency in the development and application of AI technology in education. In order to successfully traverse these ethical considerations, this group of faculty members highlighted the necessity for professional development opportunities and ethical guidelines.

Conclusions and recommendations

The use of AI technologies in these faculty members' ESL lectures has a revolutionary impact on learning results and student engagement. Students' enthusiasm, language skills, and confidence in using English have all improved as a result of AI tools' personalised features, instant feedback, and interactive learning opportunities.

This group of instructors takes a proactive stance when it comes to tackling ethical issues surrounding AI technologies in ESL lessons, giving priority to important elements like student privacy, transparency, and critical thinking. They stress the significance of developing a responsible and ethical use of these technologies in the classroom, acknowledging the possible dangers and ramifications of AI.

Ensuring student privacy is one of these educators' top priorities. They support explicit rules and procedures to safeguard students' private information and guarantee that AI technologies and applications utilised in the classroom follow stringent privacy regulations. They work to preserve the security and confidentiality of student data by putting policies in place including data encryption, secure storage, and restricted access to student information.

Another important issue that this group of educator's addresses is transparency. They support giving pupils a thorough grasp of the data being gathered, the algorithms being utilised, and the possible ramifications of utilising AI technologies in the classroom. They enable students to make wise judgements and get a critical understanding of how AI affects their learning process by encouraging candid and open discussion.

When talking about ethical issues, critical thinking is also very important. These instructors actively involve students in conversations regarding the moral implications of AI, pushing them to consider and evaluate the biases, constraints, and possible repercussions related to AI technologies. They encourage students to think critically about the role of AI in their language learning process and its wider societal implications by fostering a culture of inquiry and reflection.

When addressing ethical issues pertaining to AI technologies in ESL lessons, these educators typically prioritise student privacy, openness, and critical thinking. By giving these values top priority, they hope to establish a learning environment that not only maximises

the advantages of AI but also guarantees its ethical and responsible application, which is in the best interests of their pupils.

Finally, it is advised to approach the incorporation of AI in ESL courses with an open mind and a desire to investigate novel possibilities. Start by investigating and testing out various AI tools and applications that complement your educational goals. Spend some time learning how to successfully integrate these technologies into your activities and classes. Seeking assistance and cooperation from peers who have used AI in language acquisition. It is crucial to include students in the process by outlining the goals and advantages of AI technology and promoting their involvement and input. Stress how crucial it is to use AI as a tool to improve learning rather than as a substitute for human interaction. To improve your teaching, keep up with the most recent developments in AI and regularly consider how it affects learning results and student engagement.

References

- Crocker, R. A. (2009). An Introduction to Qualitative Research. *Qualitative Research in Applied Linguistics*, 3-24. https://doi.org/10.1057/9780230239517_1
- Deng, X., & Yu, Z. (2022). A systematic review of machine-translation-assisted language learning for sustainable education. *Sustainability*, 14(13), 7598. <https://doi.org/10.3390/su14137598>
- Douglas, H. (2022). Sampling techniques for qualitative research. In *Principles of social research methodology* (pp. 415-426). Singapore: Springer Nature Singapore. https://doi.org/10.1007/978-981-19-5441-2_29
- Goundar, P. R., & Li, H. (2026). Artificial Intelligence in the Evaluation of Academic Writing in Higher Education. *English Language Teaching*, 19(4). <https://doi.org/10.5539/elt.v19n4p51>
- Ma, J. (2018). Usability of Teacher Written Feedback: Exploring Feedback Practices and Perceptions of Teachers and Students. *Electronic Journal of Foreign Language Teaching*, 15(1). <https://e-flt.nus.edu.sg/v15n12018/ma.pdf>
- Muller, C. (2020). The impact of artificial intelligence on human rights, democracy and the rule of law. *Council of Europe, Strasbourg*, 20. <http://dx.doi.org/10.6007/IJARBSS/v14-i8/22456>
- Orhani, S. (2023). Robots assist or replace teachers in the classroom. *Journal of Elementary and Secondary School*, 1(1), 29-41. <https://doi.org/10.31098/jess.v1i1.1418>
- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu: Kathmandu School of Law*, 5(1), 8-15. [https://doi: 10.47263/jasem.9\(1\)01](https://doi: 10.47263/jasem.9(1)01).
- U.S. Department of Education, Office of Educational Technology (2023). Artificial Intelligence and Future of Teaching and Learning: Insights and Recommendations. Washington, DC, 2023.
- Qianjing, M., & Lin, T. (2021). An artificial intelligence-based construction and application of English multimodal online reading mode. *Journal of Intelligent & Fuzzy Systems*, 40(2), 3721-3730. <https://doi.org/10.3233/JIFS-189406>