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A Paradigm Shift in ELT with Artificial Intelligence: A Review on the Current State in Nepal

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Abstract

Artificial intelligence (AI) has sprayed a vibrant message to people in all areas of life including the education field due to the easy access to vast information with a click in an autonomous way and enhancing the overall learning experience. This study provides an overview of the significance of AI applications, their role in education and where the practitioners are in the concurrent situation. Especially, it explores some of the AI approaches best practised, including personalised learning, adaptive learning, teaching evaluation, virtual classroom, and intelligent teaching. It also highlights some of the ethical and social implications of using AI in education, including issues related to privacy, equity, and the role of human teachers. I used the data published in various journals, and books, presented in academic forums in global and local contexts and analysed thematically. The study concluded that integrating AI in education with caution, considering the ethical implications and ensuring that all students have access to these new technologies will switch to an artificially led world where there is no boundary for accessing knowledge.

Keywords: Artificial intelligence, current state, digital world, pedagogical shift,

Introduction

The wave of Artificial Intelligence (AI) has uncovered the entire attention of the world such as industrialists, scientists, pharmacists, and educationists and has become a potential area of research for researchers throughout the world to concretise the ongoing scenario and its impact on the future (Salas-Pilco & Yang, 2022). Since AI has been an unavoidable means in multi-faceted parts of our lives, many studies have been conducted on the use of AI in education, such as intelligent tutoring systems, adaptive learning, designing assessments, and analysing learning data (Kuo, 2020). AI can be defined 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" (Popenici & Kerr, 2017). It deals with the creation of intelligent machines that can perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and language translation.

The history of AI can be traced back to the 1950s when pioneers in the field such as Alan Turing, John McCarthy, and Marvin Minsky began exploring the possibility of creating machines that could think and learn like humans. In 1956, McCarthy coined the term "artificial intelligence" and organised the Dartmouth Conference, which brought together leading researchers in the field to discuss

the potential of AI (McCarthy et al., 2006). With the advent of the internet and the explosion of data, researchers began to explore new approaches such as machine learning and deep learning, which have led to significant advances in areas such as natural language processing, image recognition, and computer vision (LeCun et al., 2015). Similarly, Yufeia et al., (2020) argue that AI in education has been applied in various ways, including automatic grading, interval reminders, teacher feedback, virtual teachers, personalised learning, adaptive learning, augmented and virtual reality, accurate reading, Smart campus, and distance learning (Yufeia et al., 2020).

Recently, UNESCO officially published the "Beijing Consensus - Artificial Intelligence and Education", which suggests that all countries should develop relevant policies and investigate effective strategies and practices for utilising AI to advance educational innovation (Huang, 2021). It is considered that Education is meant for society, but society is not for education and the need of modern society today is technology, which can only be possible through education. Many countries including the United States, Singapore, and India are recognised as prominent nations that have successively introduced new education reform strategies for the future (Parker, 2018). Relevant policies and regulations are continually being developed to establish a plan for the advancement of smart education in their respective countries (Parker, 2018).

In Nepal, after a massive earthquake in 2015, World Vision International (WVI) integrated an innovative solution KITAB Bazar, an online marketplace platform, which helped 53,412 children across 831 community schools by delivering 133,008 supplementary reading materials in local languages using these tools (Kharel et al., 2022). Digital teaching materials are readily available at all levels of education. The ongoing improvement of smart learning, teaching and management methods has made significant headway in the modernization of education (Chaozi, 2018). Although there is a growing body of research on the applications of artificial intelligence in education, there are still gaps in our understanding of how AI can be effectively integrated into educational systems in schools' and universities' curricula. One area where more research is needed is on the implications of using AI in education, particularly switching the traditional textbooks, techniques, and teachers into a digital framework. Another research gap is to develop a clear mindset on how AI can be used to assess student performance and provide feedback on behalf of teachers. Furthermore, research is needed to understand how AI can be used to improve access to education for underserved and disadvantaged communities.

Nepal faces a deficit in information, policy, and a robust ecosystem for AI-related policies in Nepal. Although the Government of Nepal has emphasised AI and information technology in its Science, Technology, and Innovation Policy and Digital Nepal Framework, these policies lack concrete specifics for the effective execution of AI in education (Digital Nepal Framework., 2019). Efforts have been made through policies and initiatives to incorporate digital tools and technologies across various educational institutions such as schools, colleges, and universities in Nepal. The Ministry of Education Science and Technologies (MOEST) under the Government of Nepal (GON) has undertaken several interventions aimed at enhancing the education system through digitization (Dhital, 2018). For instance, initiatives like Open Learning Exchange (OLE-Nepal), OLPC (One Laptop Per Child), Nepal Wireless Networking Project (NWNP), and Information Technology Society Nepal (ITSN), among others, have been launched in collaboration with non-governmental organizations to improve educational outcomes (Dhital, 2018). This study primarily aims to explore the emerging practices of AI in English language teaching classrooms. Moreover, the study delves into how English teachers adapt their pedagogical approaches to leverage AI technologies in the classroom and seek potential challenges and opportunities while integrating AI in ELT. It categorizes articles by concepts and

themes related to incorporating AI into education and discusses both the challenges and opportunities guided by the following research questions:

i. What are the emerging states of AI in English language teaching classrooms?
ii. How are English teachers adapting their pedagogical approaches to leverage AI technologies in the classroom?
iii. What are the challenges and opportunities associated with the integration of AI in ELT?

Literature Review

This section presents a review of the literature in various contexts based on the research questions and research purpose. It reviews the studies related to the use of AI in ELT classrooms in three different themes such as integrating AI in ELT classrooms, personalized learning and collaborative learning and AI.

Integrating Artificial Intelligence in ELT Classroom

The use of AI in English language teaching (ELT) is a growing trend, with a focus on its current benefits and challenges (Hockly, 2023). AI technologies are being applied in various aspects of ELT, including listening, writing, translation, and oral teaching (Yang, 2020). These applications have shown promising results in optimizing language skills, translation, assessment, recognition, and satisfaction (Sharadgah & Sa'di, 2022). However, Sharadgah and Sa'di (2022) further argued that there is a need for more detailed descriptions of the methodology and research design in future studies. Liu and Kong (2021) expressed that the integration of AI in college English teaching, particularly in the feedback of self-regulated learning evaluation, is an area that requires further exploration. Earlier, (Hwang et al., 2020) reported that AI has the potential to transform education in several ways as it has been widely applied in education, particularly by educational institutions to perform administrative functions, teaching-learning activities, student assessment, and curriculum customization to address the new learning culture of the students with the excessive use of AI tools. A comprehensive study by Chen et al. (2020) found that the use of humanoid robots or web-based Chabot has allowed instructors to carry out their duties independently or with assistance from other technologies such as embedded computer systems. For instance, using an AI system could reduce correction times, decrease errors made by professors while correcting assignments, provide students with feedback on their work as they progress through exercises assigned during the course, and increase exam grades when used more than half of the time (Vittorini et al., 2021). Furthermore, a recent study on the role of AI in education by (Zafari et al., 2022) revealed that the rapid spread of AI not only helps students with learning different topics but also plays a major role in improving personal skills, providing deeper learning, and acquiring qualifications for future jobs.

However, (Kabudi et al., 2021) in a different context reported on specific student needs or problems faced by many learners and the improvement of users' experiences with educational platforms powered by Artificial Intelligence (AI). Moreover, a similar study on Augmenting classrooms with AI for personalized education by Kokku et al. (2018) suggested that Intelligent Tutoring Systems (ITS) can be used to augment traditional teaching to improve student engagement and learning outcomes. ITSs are complex systems, which integrate technologies such as interactivity, dialogues, automated question generation and learning analytics. However, Felix (2020) strongly argued that the presence of AI cannot replace the human teacher in education because it lacks certain qualities which only a human can provide. These include being physically present, teaching existential reflection, norms and values or a sense of self, history and society. In the same vein, a study in the

context of Europe (Renz et al., 2020) raised questions emphasizing the lack of real AI applications in the European market. These studies collectively demonstrate the growing interest and potential benefits of integrating artificial intelligence in the classroom to enhance teaching and learning experiences.

Personalised Learning

AI technology is driving several changes in the field of education, improving the efficiency of teachers' work and students' learning experience. In the 21st century, the use of artificial intelligence technology in education is undeniable for several advantages. For instance, the application of AI in education can be observed in the form of personalised learning, adaptive learning, testing and evaluation, virtual classrooms, smart campuses, and intelligent teaching (Huang et al., 2021). Moreover, Somasundaram et al. (2020) reported that personalised learning with AI involves creating customised learning experiences for each student based on their strengths, weaknesses, and interests. In addition, adaptive testing with AI involves creating tests that adjust to the student's ability level in real-time, providing a more accurate assessment of their knowledge and helping them progress through material at an appropriate pace (Mujtaba & Mahapatra, 2020).

Additionally, Chen et al. (2020) suggested that AI can also be used for tutoring and coaching, particularly for students who may not have access to human tutors or who need additional support beyond the classroom (Chen et al., 2020). Apart from that, AI possesses the potential to improve teacher effectiveness in teaching, assigning tasks, grading and providing students with feedback, which helps them manage their time and tasks (Ouyang et al., 2022). Furthermore, Yufeia et al. (2020) explored that AI has been integrated into various dimensions of education, such as promoting education innovation, assisting teaching-learning processes and augmenting smart educational life to provide useful information to the stakeholders. (Yufeia et al., 2020)

Collaborative Learning and AI

Various studies (Lee, 2021; Roschelle, 2021; Tan et al., 2022) in the field of AI have indicated that there has been growing interest in exploring how AI, being perceived as a valuable resource for tackling challenging issues, can be harnessed to enhance students learning in computer-supported collaborative learning. For example, Tan et al. (2022b) revealed that AI-based technology not only facilitates learners' interaction but also provides support for more effective meaningful learning experiences. Similarly, Moore et al. (2019) reported that AI helped teachers in forming learners' groups, and scaffolds learners in performing the tasks in groups interactively. Additionally, teachers have used AI tools to navigate learners' ideas and create collaborative learning environments (Järvelä et al., 2020; Lee, 2021).

Earlier, in Spanish, Rodríguez et al. (2017) found that ICT offers various AI tools and avenues that have significantly expanded the potential for collaborative tasks, ensuring high-quality interaction and communication. They further reported that AI tools made teacher-teacher, learner-learner, teacher-learner, and teacher-parent interaction easier which eventually led to successful learning. Likewise, Roschelle (2021) investigated that AI tools have the potential to create well-balanced student groups for efficient task completion by assessing each student's level of collaboration through extensive data analysis. He further emphasises, that AI has been used to develop virtual agents to support learners during group tasks and it can also monitor the participation of students in group activities. Similarly, Jeong and Hmelo-Silver (2016) found that technology provides learners with various opportunities to enhance their education and collaborative learning experiences. In a different context, Tan et al. (2022a) suggested that AI tools helped learners to participate in joint tasks, interact effectively, share learning resources, engage themselves in collaborative processes, co-construct knowledge, monitor and

regulate their collaborative efforts and form groups and learning communities to scaffold their learning.

The above studies in various contexts have indicated how the use of AI supported teachers and learners in promoting learning in ELT classrooms. However, there is not a long history of using ICT including AI and other technology in the Nepali education system including language learning such as ELT, but there has been a paradigm shift in ELT due to the growing use of AI. This study has explored this issue comprehensively as it is a less researched area and the cry of the 21st century.

Methodology

Drawing a qualitative study by analysing document analysis as suggested by Bowen (2009), I intended to explore the emerging practices of AI tools adopted by English teachers in the current Nepali context. One of the primary goals of this study was to explore a deeper understanding of how teachers have been adapting their pedagogical approaches to leverage AI technologies in the classroom. Furthermore, the study seeks to shed light on the challenges and opportunities associated with the integration of AI in English Education. In this study, a comprehensive search of relevant databases, such as Google Scholar, JSTOR, ProQuest, and Library Genesis was frequently used. I found the related literature by surfing the issues such as, 'Integration of AI in ELT classroom', 'Challenges of AI in teachers' professionalism', and 'Opportunities of AI in English education'. The search was mainly limited to articles published in English related to AI and pedagogy. Furthermore, the selection of the studies was focused on the challenges and opportunities of AI integration in Nepalese education. The data extracted from the selected studies included information on the challenges and opportunities of AI adoption in Nepalese education, as well as the initiatives and policies aimed at promoting the integration of AI in the Nepali context. The data was synthesised and organised into themes as suggested by Braun and Clarke (2006) to provide a comprehensive overview of the literature. I used deductive coding to assemble and maintain the coherence of ideas collected from the literature. Moreover, the quality of the selected studies was assessed using established quality assessment criteria, such as the rigour of the research design and the validity of the findings (Denzin & Lincoln, 2018). The analysis of the literature provides a comprehensive overview of the challenges and opportunities of AI integration in ELT classrooms. The review is based on a thorough examination of the available literature. It provides a clear and concise summary of the current state of research on AI adoption in Nepali education.

Results and Discussion

This section presents the findings based on the review of various resources focusing on the research problem. The findings report has been analysed thematically.

AI Ground-breaking ELT Trend Globally

The application of AI in e-learning (AIeL) is a rapidly growing field, with a focus on intelligent tutoring systems and assessment tools (Tang et al., 2023). In ELT, the integration of AI, particularly in the form of machine learning models, is seen as an unprecedented change that requires ELT practitioners to acquire new skills (Thadphoothon, 2022). This trend is part of the broader changes in ELT, including globalisation, localization, and interdisciplinary collaboration (Jora, 2019). The emergence of edge intelligence, which brings AI to the network edge, is also a significant development in the field (Zhou et al., 2019). AI in education, particularly through AIED, has the potential to enhance personalized learning experiences for students. For instance, Lameras (2022) illustrated that AIED can play a crucial role in developing 21st-century skills such as creativity, collaboration, leadership, problem-solving, and critical thinking. He further emphasised that formative feedback and tasks can

promote self-directed learning and student ownership, with teachers playing a key role in guiding the use of AIED for effective learning experiences. Most interestingly, the study by Chan and Tsi (2023) found that human teachers possess unique qualities that make them irreplaceable despite the advancement of AI in education. Their study claimed that students continue to value and respect human teachers even with the increasing presence of AI in education. The future of education depends on the collaboration and synergy between human teachers and AI technologies. Mondal (2019) and Lameras (2022) suggested that AI can also shift the role of teachers to that of facilitators, as well as provide new teaching opportunities. However, the successful implementation of AI in education requires the development of new programs to train teachers in using AI.

The integration of AI in ELT techniques within Nepal's educational framework has shown a progressive trend (Thadphoothon, 2022). Qualitative feedback from educators suggests that AI tools have contributed to more personalised learning experiences (Xie et al., 2019). However, challenges persist, such as the digital divide, which affects equitable access to these technologies (Ghimire et al., 2022). A comparative analysis of global trends shows that Nepal is aligning with international standards in AI adoption for ELT (Thadphoothon, 2022). In this vein, AI has been integrated into various ELT aspects such as speech recognition, grammar correction, and translation, leading to a transformative shift in the field of ELT. Yet, the pace of integration is slower due to infrastructural constraints. The analysis highlighted a limited range of AI applications in ELT, including intelligent tutoring systems, adaptive learning platforms, and automated assessment tools (Paudel & Ghimire, 2022).

English Teachers' Experiences of Using AI

A range of studies have explored English teachers' experiences with AI in the classroom. Zulkarnain and Yunus (2023) found that teachers generally view AI technology positively, despite facing challenges. They further identified strategies for effectively using AI in English teaching, as well as the need for training. Underwood (2017) highlighted the engaging nature of AI language assistants in the classroom, leading to increased English speaking. Niu et al. (2022) further supported the use of AI-aided educational platforms, noting their usefulness in supporting teaching and learning, particularly in less developed areas. However, challenges such as device availability and user-friendly interfaces were also identified.

Teachers' perceptions of AI in education are complex and multifaceted. While many STEM teachers view AI as a valuable tool for enhancing student learning (Kim & Kim, 2022), concerns about the potential impact on their role and the transparency of AI decisions have also been raised (Gocen & Aydemir, 2020). These concerns are further compounded by the influence of confirmation bias and the need for absolute correctness in AI-based recommendations (Nazaretsky et al., 2021). A similar study (Xu, 2020) highlights the potential obstacles and the need for transparency, fairness, and accountability in the use of AI in education. However, students' perceptions of AI teaching assistants in higher education are generally positive, particularly when they perceive them as useful and easy to communicate with (Kim & Kim, 2022). These findings highlight the need for further research and the development of guidelines to address teachers' concerns and ensure the effective integration of AI in education.

Challenges and Opportunities: AI Prospects

Despite the promising advancements, the analysis also uncovered several challenges hindering the widespread adoption of AI in ELT in Nepal, including infrastructural limitations, digital divide disparities, and concerns regarding data privacy and algorithmic biases (Khadka & Paudel,

2023). One of the fundamental challenges of AI in education is the lack of basic computing skills, hardware sharing, mobile-dominant computing, data costs and electrical reliability issues with internet infrastructure as well as language and cultural differences between externally developed systems versus locally developed ones (Nye, 2015). According to a study by Chang and Lu (2019), the way students learn, choose materials and develop their understanding is different each student's unique needs and abilities are crucial for the effective use of AI in education. Another challenge is the availability and quality of data used to train AI models. Furthermore, the issues still facing AI in education such as scalability, robustness and generalizability across different domains by Kay (2012), AI models used in education should be able to explain how it arrived at their decisions so that teachers and students can understand it. In addition to this, the use of AI in education raises ethical and social considerations such as issues of bias and privacy, issues of collecting, using and disseminating data as stated by Bodó et al. (2017) in their research, it is important to deliberate these issues when designing and deploying AI systems in educational settings.

Despite the challenges of AI, it has the potential to significantly enhance English language learners' communication skills by providing personalised and interactive learning experiences (Liu & Kong, 2021). Another study by Son et al. (2023) emphasised the transformative impact of artificial intelligence on language education, stressing the continuous integration of AI technologies and applications to enhance language learning and teaching, along with the need for more rigorous research in this area. In the same vein, Rusmiyanto et al. (2023) found that AI technologies have been effective in improving learners' speaking and pronunciation skills, while also promoting learner autonomy. A similar study by Klimova et al. (2023) found that AI has a positive impact on students' motivation, involvement in learning, and improvement of vocabulary and speaking skills. Most importantly, AI has enhanced learning resources and altered learning styles by analysing individual characteristics and designing suitable approaches (Yong, 2020).

In the same way, another study focused on the implication of their findings on two parallel strands going forward. The first strand is an evolutionary process, which focuses on current classroom practices and collaborating with teachers to diversify technologies and domains. The second strand is a revolutionary process where technology needs to be embedded within students' everyday lives to support their cultures, goals, communities and practices (Roll & Wylie, 2016). A study by Seo et al. (2021) reported that participants were concerned about issues such as responsibility and surveillance when using AI systems for online learning.

Thus, AI in ELT in Nepal is promising but requires strategic policy interventions to overcome existing barriers. The study necessitates a collaborative approach between policymakers, educators, and technologists to harness AI's full potential in ELT.

Conclusion and Implications

The integration of AI in ESL classrooms offers significant potential for enhancing language instruction, despite the challenges and drawbacks associated with it. It emphasises the importance of carefully addressing the challenges and leveraging the benefits of AI to create effective and inclusive language learning environments for ESL learners. The study highlights the need for further research to fully understand the impact of AI on linguistic competence, learner motivation, and intercultural competence in ESL classrooms. In addition, the intervention of AI in English Language Teaching is seen as a positive development, with the potential to significantly enhance communication skills. However, there is a need for better integration of AI into educational settings, with a focus on the ethical responsibility of both educators and students.

The applications of AI in teaching English electronically are important for the development of language teaching. Similarly, the use of AI in English teaching is seen to enhance teaching quality and potentially reform the current teaching mode. AI has the potential to transform education by personalising learning, improving student outcomes, and enhancing the overall learning experience. The future of AI in English education looks promising, with the potential to revolutionise the way we teach and learn. AI-powered personalised learning, adaptive assessment, and gamification can make language classrooms more engaging and effective for students of all abilities. Furthermore, AI-based tools can assist English teachers in managing the classroom, providing feedback, and analysing student performance data. However, it is important to note that the integration of AI in education should not be viewed as a one-size-fits-all solution.

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