Artificial Intelligence: A Tool for Language Learning & Teaching

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Abstract:

Advancement in technology increased the use of artificial intelligence in education. Now a days Artificial Intelligence has been an essential part of human lives. This paper is an attempt to investigate the role of artificial intelligence in English language teaching. The present paper also addresses the evolution of Language Learning, Advancements of Technological Language Learning and the challenges and limitations associated with integrating AI into language learning. AI has the potential to transform the functioning of the education system, increase the competitiveness of institutions and empower teachers and students at all levels. The use of AI responsibly and effectively in language learning environments, a comprehensive understanding of the benefits and challenges associated with AI integration is essential. AI technology not only makes language learning more accessible and achievable but also designs it to suit individual needs, making the process more personalized and effective. AI significantly improves the quality of language learning by adapting to the individual features and expectations of each student.

Keywords*: Artificial Intelligence, Language Learning , Personalizing, Online Learning.*

Introduction

Digitalization has played a major role in the change in education generally and instructional practices in the classrooms; particular in the past decade. In reeducation, artificial intelligence has been embedded in many technological innovations that offer learning analytics, recommendations, and diagnosis tools in diverse ways. AI can access learners' proficiency levels, detect their areas for improvement, and design specific instructional materials accordingly. Artificial Intelligence not only improves the fearing process but also engages the learners, motivates them, and enhances their language fluency.

AI technology not only makes language learning more accessible and achievable but also designs it to suit individual needs, making the process more personalized and effective. AI significantly improves the quality of language learning by adapting to the individual features and expectations of each student. Artificial Intelligence, distinguished by its ability to simulate human intelligence in recent years, affecting many aspects of society. AI is increasingly being studied as a promising tool for supporting and improving language learning and teaching. Artificial Intelligence can help to improve core language

competencies such as speaking, listening, reading and writing. AI powered tools, such as speech recognition, chatbots, virtual tutors, and language learning Apps, help to create engaging and interactive learning experiences. These innovations, such as instant feedback, tailored assessments and personalized learning materials, have the potential to improve learner's communication skills and accelerate the process of learning a new language.

Literature Review:

The term artificial intelligence was constructed the first in 1956 by John McCarthy (McCarthy et. Al, 2006) "At that time, the researchers came together to clarify and develop the concepts around thinking machines which up to this point had been quite divergent, McCarthy is said to have picked the name artificial intelligence for its neutrality; to avoid highlighting one of the tracks being pursued at the time for the field of thinking machines that included cybernetics, automata theory and complex information processing. The proposal for the conference said, "The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it." (Marr, 2018, para.21)

AI refers to a broad field of science encompassing computer science, psychology, philosophy, linguistics, mathematics, and others. It becomes evident that there are many points of view on AI, and many definitions exist.

Dictionary definitions focus on AI "is a sub-field of computer science and how machines can imitate human intelligence: a branch of computer science dealing with the simulation of intelligent behavior in computers; the capability of a machine to imitate intelligent human behavior" (Merrian-Webster).

Amazon defines AI as the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem-solving, and pattern recognition. Machine learning is so important to Amazon, they stated, Without ML, Amazon.com could not grow its business, improve its customer experience, and selection, and optimize its logistic speed and quality (Marr, 2018, para.10)

Machine and deep learning are the priority for Google AI and its tools to create smarter, more useful technology and help as many people as possible from translations to healthcare to make our smart phones even smarter. Face book AI Research is committed to advancing the file of machine intelligence and its creating new technologies to give people better ways to communicate, IBM's three areas of focus include AI Engineering, building scalable AI models and tools; AI Tech, where the core capabilities of AI such as natural language processing, speech and image recognition, and reasoning are explored and AI Science, where expanding the frontiers of AI is the focus". (Marr, 2018, para.12.).

1.The Evolution of Language Learning:

The field of language instruction has evolved and significantly changed over time. The advancement of digital online platforms has completely revolutionized the way languages are taught. English language teaching is conducted, improving

accessibility, flexibility, and interactivity. We will take a look at the history of this age-long evolution now, and how it moved from traditional classrooms to the dynamic realm of online learning.

Conventional Classroom Instruction: Historically, language instruction and education started in physical conventional classrooms, where teachers and students interacted face-to-face. This conventional approach offered a structured learning environment, offering students the privilege to engage in conversations, practice their speaking abilities, and also receive corrections. Meanwhile here are some of the methods utilized in this section over time.

1900s-The Direct Method: During this era, language educators made use of the direct method, where students established a direct physical connection between objects or ideas and the corresponding words in the largest language. At this point, teachers relied majorly on visual aids, objects, and real-life examples to demonstrate vocabulary.

1920s-The Oral Approach: In the next two decades, there was a shift in focus to the Oral Approach which shockingly reiterated speaking and listening skills. Language was presented in daily contexts, enabling the students mainly listen and repeat. Lessons were formed and implemented based on the principles of selection, progression, and presentation.

1940s-The Audio-lingual Method: Succeeding the Oral Approach is the Audio-Lingual Method which is also known as the "Army method" formed in the United States. This event took place after the Second World War. This language teaching approach focused on the quick development of language proficiencies, via intensive oral drilling of the target language.

1960s-Situational Language Teaching: Situational Language Teaching Method shares similarities with the Oral Approach and the Audio-lingual method. It reiterated presenting vocabulary and grammar in practical and real-life situations. This method holds oral and aural proficiencies above linguistic accuracy.

1970s-Harmonious Learning Method): A visionary psychologist Georgi Lozanov, created the Harmonious Learning Method and transformed language education by emphasizing the importance of a relaxed and serene environment. This approach implemented the powerful influence of music to create an optimal atmosphere for learning.

Collaborative Language Acquisition: The Collaborative Language Acquisition approach placed great emphasis on group dynamics and the role of the teacher as a supportive counselor, guiding learners in their language comprehension and expression.

1980s-Interactive Language Instruction: In the 1980s, Interactive Language Instruction was a dominant approach to language domination and was quickly recognized. The significance of this interaction played a major role in language learning. Communication became the main objective, with accuracy taking the passenger's role.

1987-Task-OrientedLanguage Learning: Task Oriented Language Learning was introduced by N. Prabhu in 1987. It revolutionized language education by using authentic language usage in meaningful

tasks. A typical lesson comprises three stages: pre-task, task execution, and post-task review.

1990s- The Lexical Paradigm: As postulated by Michael Lewis, the Lexical Paradigm shifted the focus from rigid grammatical structures to the recognition of language as a collection of lexical units. It emphasized the comprehension and production of these lexical units in language.

1994-Content and Language Integrated Learning (CLIL): Getting closer to civilization, coined in the mid-1990s, Content and Language Integrated Learning involves teaching a specific curriculum content entirely in the target language. This approach draws strength from the successful Immersion approach pioneered in Canada and is gaining traction in countries like Australia, where language enrollment rates are reducing steadily.

2.The Rise of C.A.L.L:
The rise of Computer-Assisted Language Learning (CALL) significantly changed the way languages are taught. With the introduction of computers and language learning software, language teaching methodologies underwent a notable change. Computer Assisted Language Learning revolutionized the learning process by integrating interactive exercises, multimedia resources, and the ability for students to learn at their own pace. This innovative approach offers students a broader selection of learning materials and the flexibility to practice their language skills whenever and wherever they prefer.

3. Rise of Online Language Techniques:
The ascent of Online language learning platforms became prominent as the internet became widely accessible. These platforms provided virtual classrooms, live video conferencing, and integrated tools that facilitated collaborative learning. Students were able to engage with teachers and classmates from diverse geographical locations, fostering cultural exchange and deeper global awareness. Additionally, online platforms offered personalized learning experiences, adaptive assessments, and abundant self-study resources, catering to individual need and practice.

4. Importance of Technological Language Learning:

Accessibility and Convenience: Geographical limitations are eliminated, allowing learners of diverse races to access high- quality language education at their convenience. This flexibility accommodates diverse schedules and individual learning preferences.

Interactive Learning Experiences: Technology has enabled the creation of interactive learning environments where learners can actively engage with the language. Through multimedia resources, virtual simulations, and gamified activities, students can practice their language skills in a dynamic and immersive way. Interactive exercises promote active participation, encourage critical thinking, and foster a deeper understanding of language concepts. Language learning Apps and virtual reality simulations enhance the learning process.

Personalized Instruction: With the aid of technology, language learners can now access personalized instruction tailored to their specific needs and learning styles. Online platforms leverage artificial intelligence and adaptive learning

algorithms to analyze learners' strengths, weaknesses, and progress. Based on this analysis, the platforms can recommend targeted learning materials, provide individualized feedback, and offer customized learning paths. This personalized approach allows learners to focus on areas that require improvement, accelerating their language learning journey.

These and many more are the benefits of technological advancements in language learning. Most of them have been discussed in the advantages of online learning platforms. It is significant to note a technological advancement that is revolutionizing the language learning field now, which is the integrating of Artificial intelligence (AI) into language learning. **The Impact of AI on Language Learning:** Personalization and Interactive Experience: The implementation of Artificial intelligence (AI) in language learning has evolved the education field by introducing customizable and optimized tools. AI technologies such as Natural Language Processing (NLP), chatbots, machine learning algorithms chatbots, and Virtual language tutors have greatly improved the language learning experience.

Natural Language Processing (NLP)

NLP a branch of AI, lets computers comprehend, interpret, and generate human language. This technological tool allows for the extraction of meaning, emotions, and context from just textual data. It also aids in facilitating tasks like transition. Sentiment analysis, and chat bots. NLP plays an important role in establishing solid communication between humans and machines.

Machine Learning Algorithms:

Machine learning algorithms, another primary AI component, enable computers to adapt and study patterns and relationships within data without explicit programming. These algorithms continually enhance their performance as they interact and learn from exposure to move data. They are capable of contributing to tasks such as speech recognition, and natural language processing in language learning.

Chatbots and Virtual Language Tutors:

Chatbots and virtual language tutors are AI – based tools that provide interactive learning experiences. Chatbots can emulate human conversation and discuss with learners in conversational practice. By doing this, it can provide immediate feedback, answer questions, and offer language exercises. Virtual language tutors play the role of personalized instructions, utilizing AI and machine learning to assess learners' proficiency levels, identify strengths and weakness, and generate personalized learning paths.

The use of AI in language learning brings several benefits. Personalization and adaptive learning allow each learner to follow a customized learning path based on their proficiency level and weaknesses. Real-time feedback and assessment provide immediate corrections and suggestions, aiding continuous improvement. With AI-powered tools, learners can partake in dynamic and engaging language learning activities, receive real time feedback, access various resources, and connect with a supportive leaning community.

Global Community and Cultural Exchange:

Online language instructions established a

connection between learners from different cultures, promoting cross-cultural understanding and communication. Students can partake in language exchanges, discussion forums, and virtual immersion experiences, expanding their linguistic and cultural horizons.

Diverse Learning Material: It is easy to access a wide range of learning materials in various formats, such as videos, podcasts, e-books, and interactive modules online. These various collections meet the needs of every student's leaning style, and let them explore content aligned with their interests and preferences.

Real-time Feedback and Assessment: Online language instruction often includes instant feedback and assessment features. Students receive an immediate evaluation of their speaking, writing, and listening skills, enabling them to identify areas for improvement and track their progress. Prompt feedback enhances the learning experiences and facilitates targeted skill development.

Flexibility and Individualized Pace: Online language learning allows students to learn independently and at their own pace. Learners with different proficiency levels can access suitable and appropriate content and progress at a pace that suits their needs. This flexibility accommodates various learning styles and enables students to allocate time based on their availability and preferences.

5. Challenges & Limitations:

Technical Requirements: Everyone has not the opportunity to access reliable internet access, compatible hardware, and software which are essential for effective online learning. Bridging the digital divide is important to give all learners equal opportunity.

Teacher Student Interaction: Establishing rapport and maintaining student engagement is only easy with physical presence. Educators must generate instructional strategies to establish a supportive, engaging and motivating virtual learning environment.

Self-Discipline and Time Management: Online learning requires self-motivation , discipline, and effective time management skills. Students must actively participate, complete assignments, and seek help when needed.

Technical support and Infrastructure: Online language instruction mainly depends on technology, and technical issues can emerge anytime. Learners may face challenges related to internet connectivity, hardware compatibility, or software glitches which they may not able to handle. Adequate technical support and infrastructure are crucial for a seamless learning experience and to minimize disruption.

Digital Literacy Skills: Basic digital literacy skills from learners are needed to navigate online platforms, access resources, and effectively engage in virtual classrooms. Some learners particularly those from undeserved communities or older age groups, may struggle with adapting to the digital learning environment. Providing support and resources to enhance digital literacy can help bridge this gap.

Student Engagement and Motivation: Maintaining high levels of student engagement and motivation can be more challenging in an online setting compared to a physical classroom. Distractions, lack

of face-to-face interaction, and potential feelings of isolation can impact learner motivation. Educators must employ interactive teaching strategies, and varied learning activities, and foster a sense of community to keep learners engaged and motivated throughout their online language learning.

Cultural and Linguistic Diversity: Online language teaching brings together learners from diverse cultural and linguistic backgrounds. This diversity may help create a global community but it also presents challenges in terms of diverse perspectives, cultural norms, varying proficiency levels, and communication styles. Educators should be careful of these differences and encourage an inclusive and supportive learning environment that celebrates cultural diversity and encourages effective cross-cultural communication.

Insufficient human Interaction: Though AI language tools are very efficient, a significant limitation is the lack of direct human interaction. Regardless that some tools offer opportunities for live conversations with native speakers or tutors, the majority of the learning experience is self-guided, which may not be suitable for learners seeking a more personalized and interactive procedure.

Limitations in handling creative language: As effective as AI is, it may struggle with comprehending creative or original language such as poetry or fiction. They may also be challenged with tasks involving ambiguous grammar or vocabulary and tasks requiring advanced language proficiency.

Limited error recognition capabilities: Due to the lack of human interaction, learners can develop incorrect habits or continually make errors, without proper intervention because AI language learning tools don't have the same level of accuracy as human teachers or tutors.

Conclusion: AI significantly improves the quality of language learning by adapting to the individual features and expectations of each student. Online language learning is of the utmost value under abnormal circumstances such as the COVID-19 outbreak. There is a necessity for future research about AI in language learning. AI technology not only makes language learning more accessible and achievable but also designs it to suit individual needs, making the process more personalized and effective. As AI continues to advance, we can expect even more innovative solutions that will further enhance language education and empower learners to thrive in our diverse and interconnected world.

It is clear that AI could play an important role in language teaching in the future and the different technologies used in language learning. No doubt AI based language learning tools enhance the language skills in future.

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