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THE IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN EDUCATION

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Abstract
This article explores the integration of artificial intelligence (AI) technologies into the education system, highlighting their advantages, opportunities, and emerging challenges. The paper analyzes the role of AI in personalizing the learning process, enabling adaptive learning, and creating interactive and immersive educational environments. Particular attention is given to modern AI-based tools such as Magic School AI, Eduaide AI, Diffit.me, Curipod, Brisk Teaching, and Kialo Edu, which support lesson planning, assessment, feedback, and communication. The study also identifies key challenges in implementing AI in education, including digital inequality, data privacy, technological accessibility, and algorithmic bias. The importance of ethical principles, transparency, and accountability in the use of AI technologies is emphasized. The conclusion suggests that responsible and equitable application of AI can enhance quality, equity, and inclusivity in education.

Keywords: Artificial intelligence, education system, digital divide, ethical issues, transparency, adaptive learning, Magic School AI, Edu aide AI, interactive learning, data security.

Introduction

The rapid advancement of digital technologies has led to the extensive integration of artificial intelligence (AI) into contemporary education systems. AI-based solutions are increasingly employed in educational management, teacher professional development, and students' learning activities across a wide range of disciplines. As a result, AI is no longer perceived merely as a technological innovation but as a transformative factor influencing pedagogical practices, learning outcomes, and educational governance. This transformation is reflected in a growing number of normative and advisory documents aimed at regulating the

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use of AI in education. Developed at local, national, and international levels, these frameworks emphasize the need for the effective, responsible, and ethical application of AI technologies in educational contexts. Their primary objective is to ensure that AI supports human-centered learning, promotes equity and inclusion, and mitigates potential risks associated with algorithmic bias, data privacy, and the erosion of academic integrity. Notably, international policy documents issued by UNESCO—including "The Recommendation on the Ethics of Artificial Intelligence", "Guidelines for Generative AI in Education and Research", "AI in Education: A Guide for Education Policymakers", and "The AI Competency Framework for Teachers" —outline four key principles for the integration of AI into education. These principles provide a conceptual and ethical foundation for the design, implementation, and evaluation of AI-based educational solutions. These principles are as follows [1]:

1. The development and use of AI technologies should be aimed at enhancing human potential and supporting its comprehensive development;
2. The access of teachers and students to AI should be based on the principles of inclusion and equality;
3. AI models used in the educational process should be understandable, transparent and safe for users;
4. The use of AI should be human-controlled and accountable to humans.

In the context of AI-powered language learning, it is pertinent to delineate the following core artificial intelligence concepts proposed by Schmidt and Strasser [2]:

1. Natural Language Processing (NLP) is a field that integrates artificial intelligence and linguistics and focuses on the automated processing of human language. It encompasses both the generation and analysis of written and spoken language, although speech processing is often treated as a distinct subfield. NLP is commonly regarded as the applied branch of computational linguistics—an interdisciplinary area of research concerned with the formal analysis and modeling of language and its applications at the intersection of linguistics, computer science, and psychology.

2. Machine Learning (ML) is a subset of artificial intelligence that enables software applications to improve their predictive accuracy without being explicitly programmed. According to Alpaydin (2014), machine learning facilitates the

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development of solutions to a wide range of problems in areas such as computer vision, speech recognition, and robotics (p. 3). More broadly, ML can be defined as the process of programming computers and related applications to optimize performance criteria based on example data or prior experience (Alpaydin, 2014). In educational contexts, the data used for machine learning applications predominantly consist of personal and sensitive information, including individual achievement records, course grades, and assessment results. Consequently, such data require particularly high standards of data protection, privacy, and security.

3. Deep Learning (DL) is a subfield of artificial intelligence that employs artificial neural networks—computational systems inspired by the structure and functioning of the human brain—to learn patterns from large-scale datasets. While deep learning has been predominantly applied to vision-related tasks, such as image recognition and classification, it is increasingly being utilized for Natural Language Processing (NLP) applications, including text analysis, language modeling, and machine translation.

The integration of artificial intelligence (AI) technologies enables teachers to enrich learning experiences, enhance student achievement, optimize administrative processes, and design innovative and immersive educational environments. This section examines these opportunities in detail. One of the most significant advantages of incorporating AI into the educational process is its capacity to support personalized learning [3]. Traditional instructional approaches often fail to adequately accommodate individual differences in students' learning styles, abilities, and learning pace [4]. In contrast, AI-driven adaptive learning systems are capable of analyzing large volumes of data related to learners' characteristics, academic performance, and learning preferences [5]. Based on this analysis, such systems dynamically adjust instructional content, pacing, and task complexity in real time, while also providing targeted feedback and individualized support aligned with students' levels of preparedness. Consequently, personalized learning facilitated by AI contributes to increased student engagement, motivation, and learner autonomy [6].

AI technologies can further enhance student engagement and academic achievement by enabling interactive and immersive learning experiences. For instance, AI-powered virtual tutors and conversational agents facilitate meaningful learner–system interactions by responding to students' queries, providing

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immediate and individualized feedback, and partially simulating pedagogical interactions typically associated with human instructors [7]. These technologies contribute to more personalized learning support and foster learners' confidence, motivation, and persistence. Consequently, sustained engagement with AI-based instructional tools is associated with improved learning outcomes and overall academic performance.

In addition to enhancing the quality of learning experiences, artificial intelligence can substantially reduce teachers' administrative workload. By automating routine tasks, AI enables educators to allocate more time and cognitive resources to core pedagogical activities, such as instruction, student guidance, and academic mentoring. AI-driven systems are capable of supporting or fully automating various administrative functions, including assessment, lesson planning, and scheduling. Consequently, teachers are better positioned to design interactive and engaging learning activities, provide individualized support to learners, and engage in effective professional collaboration. The following section presents examples of AI-based tools that support lesson planning:

1. Magic School ai - A set of tools for teachers and educational institutions, a platform aimed at simplifying lesson planning, assessment, student support, communication and many other administrative and educational processes. It includes 80+ different tools for teachers (creating lesson plans, preparing tests and assessments, rubric generator, giving feedback on written work, etc.). Students are provided with opportunities such as self-assessment, receiving feedback on writing, language learning, questions on videos, and support for learning through chatbots.

2. Eduaide.AI is an artificial intelligence–based educational tool designed to support teachers in lesson planning, assessment, student feedback, and the development of instructional materials. The platform is applicable across a wide range of disciplines, including languages, literature, history, natural sciences, and computer science. Eduaide.AI enables teachers to automatically generate structured lesson plans based on selected topics, grade levels, and curriculum or learning standards (e.g., DTS). Through its Assessment Builder functionality, educators can create various forms of assessment, such as test items, quizzes, and open-ended tasks. Additionally, the Feedback Bot feature facilitates the provision

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of timely and constructive feedback on students' written work by identifying errors and offering targeted suggestions for improvement, thereby supporting formative assessment practices.

3. Diffit.me is an artificial intelligence–based educational tool designed to support the differentiation of learning materials by adapting content to learners with varying proficiency levels. When a text, article, PDF, video, or web link is provided, Diffit.me automatically restructures the material to align with different levels of learner readiness. In addition to content adaptation, the platform generates supplementary instructional resources, including leveled texts, vocabulary lists and conversational glossaries, comprehension questions, open-ended tasks, and concise summaries. These features enable teachers to address learner diversity more effectively and to implement differentiated instruction within inclusive learning environments.

4. Curipod.com is an AI-powered educational platform designed to support the creation of interactive and engaging digital lessons. The tool enables teachers to generate instructional content by specifying the lesson topic, learning objectives, and grade level, after which the system produces AI-generated slides integrated with interactive learning activities such as polls, word clouds, drawing tasks, and open-ended questions. In addition, Curipod offers the "Curify My Slides" feature, which allows educators to upload existing presentation materials and transform them into interactive lessons. Students can access the lesson through their personal devices, where each slide includes embedded interactive elements that promote active participation and real-time engagement. As a result, Curipod facilitates student-centered instruction and enhances classroom interactivity through AI-supported lesson design.

5. Brisk Teaching is an AI-powered educational platform designed to support teachers in lesson planning, instructional resource creation, formative assessment, student feedback, and the differentiation of learning materials. The platform comprises several integrated components that address different aspects of the teaching and learning process. The Brisk Extension seamlessly integrates with commonly used digital tools such as Google Docs, PDF files, and online learning resources, enabling teachers to receive AI-supported assistance directly within their existing workflows. The Brisk Boost component focuses on student engagement by offering AI-driven learning activities, including guided writing tasks, automated

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feedback, and support for improving written assignments, thereby adapting instruction to individual learner needs. Finally, Brisk Next serves as a centralized hub for educators, supporting lesson planning and instructional strategy development through tools for content generation, organization, assessment, and instructional decision-making.

6. Kialo Edu (kialo-edu.com) is an online educational platform designed to promote scientific debate, critical thinking, and the development of argumentative skills in formal learning environments. The platform enables students to formulate a central thesis and systematically construct supporting and opposing arguments ("pros" and "cons"). Each argument can be further expanded with additional layers of counterarguments, resulting in a hierarchical, tree-structured argument map that visually represents complex lines of reasoning. Kialo Edu is freely accessible to both teachers and students and places strong emphasis on data confidentiality and the protection of user rights. The platform also supports integration with widely used learning management systems (LMS), including Moodle, Canvas, and Google Classroom, allowing discussions created in Kialo Edu to be seamlessly incorporated into existing course structures.

Besides that, in order to effectively implement artificial intelligence in language learning, a set of appropriate tools and regulatory frameworks must be established. The primary goal of English language teaching is the development of communicative competence, which involves the effective use of linguistic structures and vocabulary to build the four core language skills: listening, speaking, reading, and writing. Communicative competence also encompasses the ability to produce coherent texts and to comprehend written discourse. Accordingly, the integration of artificial intelligence (AI) applications—such as simulation and communication programs—has become increasingly important for recreating real-life communicative situations in English, supporting practical language skill training, and facilitating language-based educational games. AI-powered communication tools enable the design of interactive learning scenarios that support the accurate pronunciation of sounds and words through auditory drills and visual media. These tools provide learners with opportunities to describe and interpret images and everyday contexts, engage in listening activities, and practice guided pronunciation. Moreover, AI-based systems allow learners to practice language skills autonomously while receiving immediate, personalized feedback

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for instructional guidance. Some applications incorporate structured language drills that promote communicative competence by integrating multiple language skills, thereby supporting learners in achieving higher levels of proficiency.

In conclusion, artificial intelligence holds substantial promise for enhancing the quality, accessibility, and effectiveness of English language education. When integrated thoughtfully and ethically, AI technologies can support learner-centered, inclusive, and competency-based language learning environments while reinforcing the central role of teachers as facilitators, mentors, and decision-makers. Future research should focus on the long-term pedagogical impact of AI-assisted language learning, the professional development of teachers in AI competence, and the establishment of evidence-based best practices for the sustainable integration of AI in language education.

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