

## **USING AI IN TEACHING ENGLISH FOR SPECIFIC PURPOSES**

The integration of Artificial Intelligence (AI) into education has revolutionized teaching and learning across disciplines. One area that has greatly benefited from AI advancements is English for Specific Purposes (ESP), a field of English language teaching (ELT) designed to meet the specific needs of learners in professional or academic contexts. ESP is focused on helping learners acquire the language skills required for particular fields such as business, law, medicine, tourism, or engineering [1, p. 172]. The introduction of AI tools into this domain can significantly enhance learning experiences by personalizing lessons, providing immediate feedback, and offering contextual learning materials. This article explores the ways AI is transforming ESP, examining its applications, benefits, challenges, and future implications.

AI, through machine learning algorithms and natural language processing (NLP), has opened up new possibilities for teaching English for Specific Purposes. Traditional ESP methods often involved textbooks, face-to-face instruction, and static resources, but AI introduces a dynamic, data-driven approach that can adapt to individual learner needs and provide real-time, personalized instruction.

AI's ability to analyze large amounts of learner data allows for highly personalized learning experiences. Tools powered by AI, such as adaptive learning platforms, can track student progress and adjust lessons in real-time based on a learner's strengths and weaknesses. For example, if a student struggles with legal vocabulary or medical jargon, AI-powered platforms can present targeted exercises and resources to address these specific challenges. This tailored approach leads to more efficient and effective learning, as students receive content that aligns directly with their needs.

One of the key components of ESP is the contextualization of language. AI systems can provide learners with simulations of real-world scenarios that reflect the specific contexts in which they will use English. For instance, AI-powered virtual environments can simulate a business meeting, a hospital setting, or a legal negotiation, where students interact with AI-driven characters or even other students. These immersive experiences help learners

acquire practical language skills and cultural knowledge, bridging the gap between classroom learning and real-world application.

Speech recognition technology, a subset of AI, plays a critical role in helping ESP students improve their speaking and pronunciation. Tools like Google's Speech-to-Text and other voice assistants use AI algorithms to analyze spoken language and provide real-time feedback on pronunciation, intonation, and fluency. In specialized fields like aviation English or medical English, accurate pronunciation is vital for clear communication. AI can identify specific pronunciation errors and guide learners on how to correct them, offering targeted exercises that match their individual needs.

The use of AI in ESP brings several significant benefits to both students and instructors. AI tools can provide learners with instant feedback, allowing for a more efficient learning process. Traditional methods often require significant time and resources from instructors to assess individual student progress. AI can scale instruction to accommodate large numbers of students, making ESP courses more accessible to a broader audience. This is particularly valuable in corporate training programs, where large groups of employees need to acquire English skills specific to their field in a short period.

AI-powered tools, such as chatbots and virtual assistants, can engage learners in interactive conversations. These tools simulate real-life conversations in specific professional contexts, encouraging students to practice their language skills in realistic situations. For example, a chatbot designed for business English can hold simulated meetings with learners, providing opportunities to practice formal language, negotiations, and business communication. These engaging and interactive experiences can increase learner motivation and foster deeper learning.

AI can provide learners with access to authentic, up-to-date materials specific to their professional or academic needs [2, p. 5635]. By using AI to analyze vast amounts of content from professional journals, news outlets, and industry reports, learners can access current and relevant texts. AI systems can filter and highlight material that is most pertinent to the learner's field, ensuring they are exposed to the most relevant language and terminology.

While the potential of AI in ESP is significant, there are several challenges and limitations to consider. AI platforms rely on collecting large amounts of data to personalize learning experiences. This raises concerns about the privacy and security of sensitive student information. In many ESP contexts, learners may be from professional sectors where confidentiality is

crucial. Educators and developers must ensure that AI tools comply with data protection regulations, such as GDPR, to safeguard learners' privacy.

Although AI can provide personalized instruction and feedback, it cannot replace the human element of teaching. Language acquisition is a social process, and the emotional support and mentorship that human instructors provide cannot be replicated by AI. Teachers also play a crucial role in motivating students, offering emotional support, and facilitating discussions that foster deeper learning. Therefore, AI should be viewed as a complement to, rather than a replacement for, human instructors in ESP teaching.

The future of AI in ESP holds exciting possibilities, including further advancements in immersive learning environments, such as virtual reality (VR) and augmented reality (AR). As AI technology continues to evolve, ESP programs could become even more personalized and interactive. Moreover, AI could support the development of more sophisticated learning materials, where content can adapt in real-time based on ongoing learner progress and contextual needs.

Furthermore, as AI continues to evolve, we can expect deeper integration of AI with Big Data, allowing for more accurate assessments of learner performance, and offering insights into areas where traditional assessments may fall short. Teachers could use AI to gain a more comprehensive understanding of each learner's journey, leading to more informed instructional decisions.

The use of AI in teaching English for Specific Purposes represents a promising development in the evolution of language education. By leveraging AI's capabilities to personalize learning, provide real-time feedback, and simulate real-world contexts, ESP programs can better prepare learners for success in their professional and academic careers. While there are challenges to overcome, including data privacy concerns and ensuring equitable access to technology, the potential of AI to transform ESP education is undeniable. As AI continues to develop, its role in ESP is likely to expand, offering new opportunities to enhance language learning experiences for all.

#### **References:**

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## **АКТУАЛЬНІ ТЕХНОЛОГІЇ ВИКОРИСТАННЯ ДРОНІВ У НАВЧАННІ МАТЕМАТИКИ**

В освітньому контексті дрони є інноваційними інструментами, які можуть підтримувати активне та інтерактивне вивчення математичних понять [1]. Впровадження їх у викладання математики вимагає інтеграції кількох взаємодоповнюючих технологій для підтримки як викладання, так і процесу навчання. У зв'язку з цим актуальними технологіями використання дронів в освіті є:

### *1. Системи управління та програмування дронів.*

Дрони, які використовуються в освіті, як правило, оснащені спеціальним програмним забезпеченням, яке дозволяє їх програмувати та контролювати. У математиці програмування дронів може бути цінним інструментом для вивчення алгоритмів, послідовностей, координат і геометрії. Приклади технологій, які полегшують програмування дронів:

- Scratch для дронів: Scratch – це платформа для візуального програмування для дітей, яку можна використовувати для вивчення базових концепцій програмування. Деякі навчальні дрони сумісні зі Scratch, і студенти можуть запрограмувати дрони, щоб слідувати геометричним шляхам або виконувати точні рухи на основі математичних координат.

- Tynker і Blockly: ці платформи візуального програмування схожі на Scratch і дозволяють студентам створювати програми для дронів. Використовуючи їх, студенти можуть вивчати такі математичні поняття, як послідовність, цикли та геометричні перетворення (обертання, перенесення, масштабування).

- Просунуті мови програмування (Python, C++): для учнів середнього або просунутого рівня дрони можна програмувати за