
AI in ESP Classes: Case Study on Education Students

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This paper explores the integration of Artificial Intelligence (AI) in English for Specific Purposes (ESP) classes, focusing on a case study involving first- and second-year students enrolled in the Preschool and Primary School Education programme at "Aurel Vlaicu" University of Arad. Grounded in a theoretical framework that intersects language acquisition, and educational technology, the study investigates how AI-driven tools can support the development of both English language proficiency and teaching competences. The research involves implementing AI applications to design and generate customized teaching materials, interactive tasks, and classroom activities tailored to the specific needs of future educators. Findings highlight the potential of AI to enhance learner engagement, foster autonomy, and promote a more dynamic approach to ESP instruction. The study also reflects on the pedagogical implications and practical challenges of incorporating AI in teacher education programs, offering insights and recommendations for educators and curriculum designers.

ESP; AI; digital platforms; digital tools; multimodal teaching.

1. Introduction

The rapid advancement of Artificial Intelligence (AI) has transformed the landscape of language learning and teaching. The same has happened in the field of English for Specific Purposes (ESP) where many applications are available for teaching, assessment and self-assessment. Unlike General English instruction, ESP focuses on equipping learners with language skills tailored to professional, academic, or occupational domains. This requires instructional approaches that are context-sensitive, adaptive, and capable of addressing specialized linguistic and communicative demands. AI technologies—ranging from natural language processing and adaptive learning platforms to intelligent tutoring systems and generative models—offer novel opportunities to enhance these processes.

In recent years, the integration of AI into ESP has been driven by several factors: the need for personalized learning pathways, the availability of large-scale domain-specific corpora, and the growing demand for flexible, technology-supported instruction in globalized professional environments. AI-based tools can analyse learner performance in real time, provide automated feedback, simulate authentic communicative scenarios, and generate domain-specific learning materials.

At the same time, the use of AI in ESP raises questions about pedagogical alignment, reliability, ethical considerations, and the evolving role of instructors. While AI can facilitate adaptive and data-driven instruction, its implementation requires careful examination of its effectiveness, accessibility, and implications for learner autonomy and professional identity. Thus, a systematic exploration of AI's role in ESP is necessary.

This article offers an insight into the literature on AI use in ESP and presents certain AI-driven activities conducted during ESP classes with students enrolled in Education studies at " Aurel Vlaicu" University of Arad, Romania.

2. Literature review

AI has significantly transformed education and English language teaching in the past years. Willing or not, teachers have to adapt because this generation of learners has been exposed to technology since their primary school and traditional teaching no longer functions. We are aware of the fact that learners use AI for projects, lesson planning, activities, portfolios etc and therefore a teacher-guided and controlled use of AI during ESP classes can become beneficial for teachers and students alike.

Studies have been written on the usefulness of using AI in ESP classes, thus seeking to highlight the pedagogical implications of AI integration in the ESP classroom. Shin (2018) advocates for the use of AI technology in blended classes, finding out that students who had been exposed to AI, had significantly developed their speaking, listening and reading skills. The study also highlights the fact that teachers who use AI in their classes are more creative, develop personalized teaching activities tailored on the students' real needs and are better at offering a personalized feedback. Liu et al (2021) reveal that AI tools helped students improve their writing skills through creative writing activities. Jiang (2022) has concluded that AI-powered tools have been successfully integrated into teaching English. Intelligent tutoring systems, chatbots, neural machine translation, and adaptive learning systems are among the most commonly used features of AI. These tools have been integrated in ESP classes as well. They have been adapted to specific activities such as grammar, vocabulary and tense practice (Kovačić, A., & Bubaš, G. (2023). Istrate (2018) even suggested the implementation of an artificially intelligent e-learning platform, tailored to the students' needs that would allow one-to-one interaction through a chatbot.

In this respect, ESP classes should be more technology-driven, more interactive and obviously more adapted to the features of this generation of learners. However, not only teaching materials and methods have and will change but also the teacher and teacher's role. Apart from being course designer, teacher, researcher, assessor, the new ESP teacher should be very well equipped with digital skills and constantly update them as technology is changing and evolving really fast. Bouguebs et al. (2023) state that teachers will have to fulfill the multiple roles attributed to them in the ESP classroom but will also have to meet

the students' needs in this digital age. ESP classes will be reshaped by the use of new modes of teaching and learning, including chatbots and other AI tools.

Among the most useful, user-friendly and efficient AI tools, we list the following:

- ❖ Language learning apps: Duolingo, Rosetta stone etc in their most recent versions have AI incorporated tools, gamification features, adaptive learning techniques. They can create an interactive, challenging and engaging experience, helping learners to retain content and have an enjoyable learning experience.
- ❖ Speaking Practice: Speeachace, Elsa Speak, Luvvoice are created to help learners improve their pronunciation, speaking skills and increase their confidence in oral interaction. They signal mispronunciations and offer remedial feedback to correct where and when necessary.
- ❖ Writing practice: Grammarly is among the most common apps for writing activities. It provides feedback, identifies grammar, spelling and lexical/word choice mistakes and helps in the error correction process.
- ❖ VR: provides an immersive learning environment. Personally, I did not have an encouraging and pleasant experience with a VR app for English learning but possibly, there are better solutions.
- ❖ Interactive practice and real-time support: Chatbots and virtual tutors help students and guide them through interaction, conversations, role plays. They provide immediate feedback on grammar, vocabulary, pronunciation issues. The advantage as compared to a human tutor is that it can be accessed outside the classroom and the interaction can take place anytime and anywhere.
- ❖ Educational content: AI helps teachers create educational content such as worksheets, quizzes, comprehension questions, thus reducing the teacher's preparation time. They also offer a variety of tasks, activities and games, encouraging students to get involved in the learning process. We shall mention Padlet, Wordwall or Quillionz here.

3. Methodology

In the academic year 2024-2025, we tried to integrate AI tools in the ESP course for undergraduate students enrolled in Preschool and Primary School education programme. Students study English applied in education for 2 hours/week during the first four semesters. We tested them at the beginning of their academic path and the results revealed that most of the students are at B1-B2 level with minor exceptions below B1. The activities referred to in this study were conducted during the second semester and at the end, we applied a questionnaire that was submitted to the students via Google forms. The answers were anonymous thus giving students more freedom to express their opinions. There are 120 students enrolled in this programme; however, most of them have completed the English course during another bachelor programme and the credits were transferred as part of the ECTS system. Given the situation, the attendees of the ESP course were around 60.

The sample consisted of female students, aged 18 to 60. As teaching procedure, we tried to integrate as many technologies as possible without overuse of ICT. During most classes students were made familiar with different apps such as: ChatGPT, Luvoice, Padlet, PowerPoint features, the AI features of Cambridge, turboscribe AI, Canva etc.

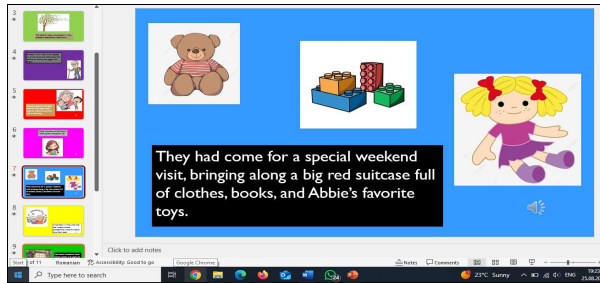
A particular activity that we would like to refer to and mention here is part of their final assessment portfolio. Students had to create a digital story with activities for primary school students using AI and other 2 apps, recorded either with Canva or with PPT. They could work individually, in pairs or in small groups, but preferably individually or in pairs. Usually, when working with undergraduate students enrolled in education programmes, we prefer group work to develop their language and communication skills during ESP classes because each student gets the change to make a valuable contribution to the group. Maybe not all are equipped with proficient language skills but can add value to the tasks with other skills like crafting, creativity, painting, drawing, imagination etc. All these qualities and skills are required for a successful preparation of any activity in primary school.

The work procedure for the preparation of a digital story consisted of the following steps:

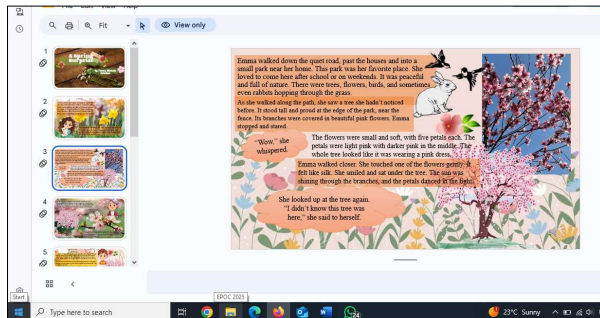
1. They had to think about a title or a topic for their story.
2. Then, with the help of Padlet, they had to prepare a key picture as the cover of their digital book. Padlet requires certain keywords to prepare the picture, therefore students had to submit this short list of words.
3. Based on the picture and title, students had to ask ChatGPT to create a longer list of words suitable for primary school students (about 10-15 words).
4. Based on this list, picture and title, students had to prepare two pre-reading activities, one with pen and paper and a digital one using Wordwall.
5. Next step was to create the story. Students had to introduce the title, the list of words and the characters of the story in the chat and create the story within a limited or preset number of words.
6. As a digital audio book requires clear and correct pronunciation, students used Luvoice to prepare their audio version. For those who are unfamiliar with the app, one can add a text in the app, select the language or the dialect, the gender of the reader and the app offers a correct reading in the selected language. It is a good app to train and practice students' pronunciation either in the classroom or outside.
7. After training their correct pronunciation, students had to prepare the pictures to be inserted in the story in Canva or any other app (Padlet, for instance).
8. When the text, the pictures and the pronunciation were ready for the final stage, students had to turn the material into an audiobook. We advised them to use PPT (older version for recordings or newer one for recording with video), Canva or any other app that contains presentation features.

9. In the end, they had to prepare 2 after reading activities, one paper and pen and a digital one.
10. When the product was ready, students presented it in front of their classmates and were assessed for their work.

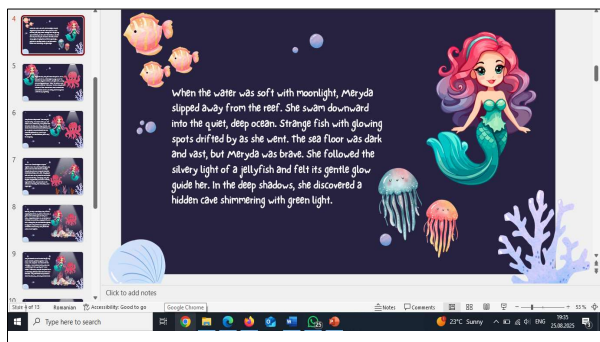
Below, we shall present some of the students' digital audiobooks.



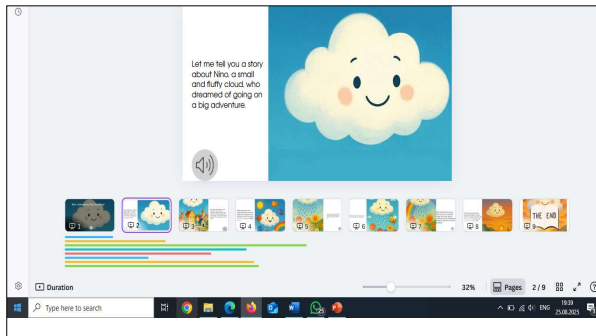
Source: personal archive (digital story 1st sample)



Source: personal archive (digital story 2nd sample)



Source: personal archive (digital story 3rd sample)



Source: personal archive (digital story 4th sample)

To conclude with this part of the paper, we encourage the use of technologies in ESP classes as they turn them into a challenging, creative and skill-developing environment. From our experience, we can state that students feel more encouraged to take part in activities, to create materials, present them in front of their peers. They even tend to forget their public speaking fears in English, they are willing to interact with other classmates, share ideas, learn vocabulary and develop their skills.

Among the most important benefits, we shall mention the development of:

- ✓ Vocabulary for specific purposes;
- ✓ Communication skills;
- ✓ Pronunciation skills;
- ✓ Writing skills;
- ✓ Presentation skills;
- ✓ Critical thinking skills;
- ✓ Digital skills
- ✓ Team work abilities

4. Results and discussions

As mentioned, we conducted a study on a sample of 1st year education students. Out of 60 students that were qualified to answer the questionnaire, we collected 46 responses. 48.8% are aged 18-30, 39%, 31-45 and 12.2% are aged 46-60.

Surprising or not, given the age distribution, 95.7% believe that technologies are useful in education whereas 4.3% answered "maybe". We hadn't recorded any negative answers. Although not all respondents belong to Generation Z which is used to gadgets and devices, all respondents acknowledged that technology plays a crucial role in contemporary education.

3. Do you think that technologies are useful in teaching?
46 responses

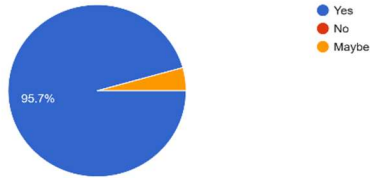


Chart no 1 *Do you think that technologies are useful in teaching?*
Source: personal archive

Even if Romanian education still suffers from traditionalism or as stated, professors tend to deliver lectures in a more traditional manner with less reliance on technology, 100% of the respondents stated that their teachers used technology. It is a sign that education is a vivid organism that adapts to the changes in the society and to the features of traits of this generation of learners.

4. Do your teachers use technologies in teaching?
46 responses

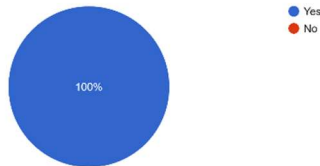


Chart no 2 *Do your teachers use technology?*
Source: personal archive

Another question that we would like to discuss here refers to the frequency of technology use. 56,5% of the respondents state that teachers use technology quite often, whereas 23,9% consider that technology is used during every lecture and 19,6% state that they are sometimes exposed to technology.

5. How often do your teachers use technologies in teaching?
46 responses

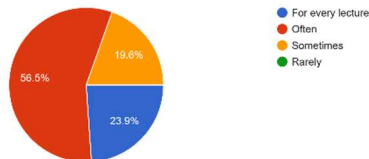


Chart no 3 *How often do your teachers use technology?*
Source: personal archive

We have further analysed the specific situation of ESP classes. 95,7% of the students mention that they are exposed to technology during their English classes and 4.3% consider that they are not. Though small, the percentage is quite strange as all students benefit from the same activities and ICT exposure. Probably, the question was not well understood by those 4.4%.

6. During the English for Education class (ESP) does your teacher use apps or other technologies?
46 responses

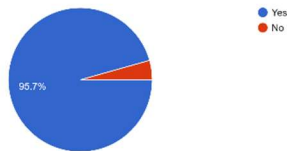


Chart no 4 *During the English for Education class (ESP) does your teacher use apps or other technologies?*

Source: personal archive

91,1% believe that such activities are useful and only 8.9% would prefer more traditional activities.

One question investigated the students' familiarity with certain apps. The list is quite substantial but the apps that are mention the most are: ChatGPT, Canva, Duolingo, Luvoice, Powerpoint, Adservio, Youtube etc.

We have also analysed the students' opinion about AI use in ESP classes. 58,7% consider that it is useful and 26,1% believe it is a challenging task. An interesting finding is that none (0,00%) of the respondents considers that use of AI as a non-ethical activity.

9. What is your opinion about AI in English for Education?
46 responses

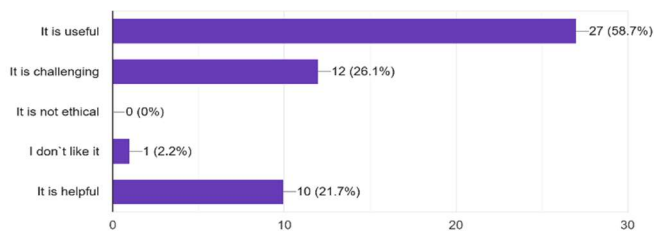


Chart no 5 *What is your opinion about AI in English for education?*

Source: personal archive

In terms of usefulness during classroom activities, students believe that AI could help them in finding information (73,9%), preparing presentations (67,4%), story writing (60,9%), or translation (58,7%). Other findings can be seen in the chart below.

11. Tick the activities that you believe AI can be helpful for
46 responses

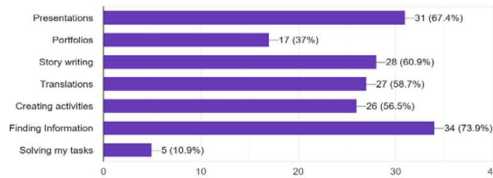


Chart no 6 *Activities with AI*

Source: personal archive

An interesting finding is revealed by the chart below. Only 23,9% would trust AI in assisting teachers during assessment activities. 39,1% are not yet decided and almost the same percentage state they wouldn't (37%).

14. Would you be comfortable with AI technology assisting teachers in grading assignments and exams?
46 responses

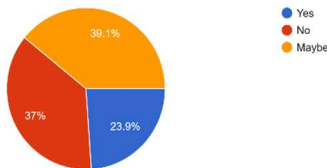


Chart no 7 *Would you be comfortable with AI assisting teachers in grading?*

Source: personal archive

The apps that students have used or prefer are listed in the chart below. We can see that they are familiar with ChatGPT (91,3%), Duolingo and Google Translate (80,4%), Kahoot (56,5%).

19. Tick the technologies that you have already used
46 responses

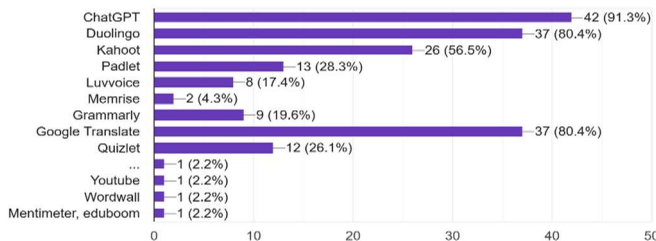


Chart no 8 *Used technologies*

Source: personal archive

In terms of digital tool used for education purposes, most students use laptops (95,7%) PPTs (84,8%), smartphones (82,6%) or emails (78,3%). Other findings are presented in the chart below.

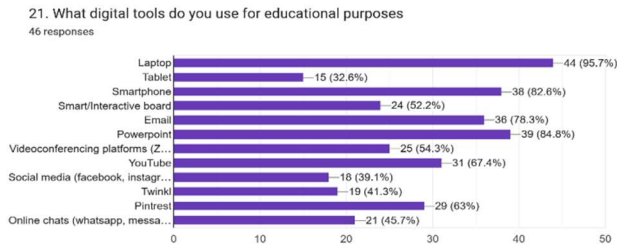


Chart no 9 *Digital tools for educational purposes*

Source: personal archive

The last aspect that we want to present refers to the activities that students used AI for. Many students search for information though we have warned them about potential false information. They also use AI for translations, to create stories, presentations, worksheets or lesson projects.

We have selected the most relevant answers from the questionnaire. The research reveals that students are familiar with technologies, use them and enjoy working with them. In terms of ESP relevance, most of them consider that skills can be developed using AI and technologies (34,8%) and the same percentage believe that AI has to be integrated properly to enhance and improve students' language skills. Only 10,9% disagree with the statement.

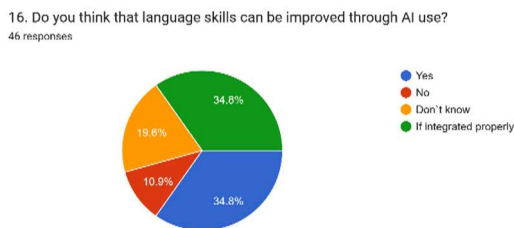


Chart no 10 *Skill development*

Source: personal archive

5. Conclusions

Needless to say, that technologies and AI can be of great support in ESP teaching and assessment if used carefully, appropriately and responsibly. Results have shown that students appreciate digital activities when familiar with the app. They are also eager to discover new apps that would later on introduce in their lessons during pre-service stages

and as teachers. Technologies and AI make the lessons more adapted to the learners' needs, by offering tailored materials, vocabulary, and simulations relevant to their specific field. Another benefit is that digital platforms and AI-driven resources provide learners with authentic materials—such as simulations, worksheets or role-plays—that replicate real life and workplace communication. Multimedia tools, interactive platforms, and AI chatbots encourage learner participation, making ESP lessons more dynamic and motivating compared to traditional methods. They also support independent work and practice, favouring learning outside the classroom.

For teachers, technologies and AI help in preparing context-specific content, assessing progress, and providing instant feedback, freeing up time for more interactive and communicative activities.

Despite the benefits, teachers must address challenges such as digital literacy gaps, over-reliance on AI, and the need for critical evaluation of AI-generated content. On the other hand, ethical issues should also be taken into account. Creating texts and materials should be carefully considered not to be considered plagiarism. Such materials can be used as classroom support, mentioning that they were AI generated and not used for publication purposes without mentioning the source.

All in all, AI and technologies are a good and efficient tool in ESP classes, making them more use-friendly, challenging and creative.

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