

MODERN APPROACHES TO TEACHING A FOREIGN LANGUAGE IN A TECHNICAL UNIVERSITY TO STUDENTS OF COMPUTER SCIENCE IN THE CONDITIONS OF BLENDED LEARNING

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Анотація

У цій статті досліджуються сучасні методики викладання іноземних мов студентам ІТ спеціальностей в технічному університеті, використовуючи підхід до змішаного навчання. Обговорюються такі методи, як гейміфікація, навчання на основі проєктів, «flipped classroom» модель, онлайн-обмін мовами, навчальні засоби на базі штучного інтелекту, вправи на перемикання кодів, мультимедійне навчання, мікронавчання та навчання peer-to-peer. Мета полягає в тому, щоб покращити засвоєння мови, залучення та практичне застосування, зробивши процес навчання більш інтерактивним, ефективним та актуальним для студентів, які вивчають комп'ютерні науки.

Ключові слова: змішане навчання, вивчення іноземної мови, навчання студентів ІТ спеціальностей, сучасні методики навчання, цифрові засоби навчання.

Abstract.

This paper explores modern methodologies for teaching foreign languages to computer science students in a technical university setting, leveraging a blended learning approach. Techniques such as gamification, project-based learning, the flipped classroom model, online language exchanges, AI-powered tools, code-switching exercises, multimedia learning, microlearning, and peer-to-peer learning are discussed. The aim is to enhance language acquisition, engagement, and practical application, making the learning process more interactive, efficient, and relevant for computer science students.

Key words: blended learning, foreign language acquisition, computer science education, modern teaching methodologies, digital learning tools.

The teaching of foreign languages in technical universities, particularly to computer science students, has been undergoing significant transformation. With the rise of digital technologies and pedagogical innovations, a blended learning approach has emerged as a promising solution. This approach combines traditional classroom methods with digital learning activities, providing a versatile and engaging learning environment. This paper explores various modern methodologies suited for this approach, including gamification, project-based learning, the flipped classroom model, online language exchanges, AI-powered tools, code-switching exercises, multimedia learning, microlearning, and peer-to-peer learning. The goal is to enhance language acquisition, engagement, and practical application, making the learning process more interactive, efficient, and relevant for computer science students.

Blended learning refers to a mix of traditional, in-person teaching and online learning. It has become increasingly popular in technical universities due to its flexibility and adaptability, especially for students of computer science. [1] Here are some modern approaches to teaching a foreign language in a technical university to students of computer science in the context of blended learning.

Gamification. The use of games and game-like elements can make learning a foreign language fun and engaging. This can involve both in-person games and online language-learning apps. Gamification can also incorporate aspects of competition and cooperation, such as leaderboards, badges, and team-based challenges.

Gamification is a powerful tool that leverages the innate human desire for competition, achievement, and status to make learning more engaging. It involves integrating game mechanics into the learning process, such as points, levels, achievements, leaderboards, and other elements typically found in video games. This approach can significantly increase student motivation, as they are not just learning for the sake of learning, but also to reach certain milestones or surpass their peers. [2] Gamified tasks in language learning could

include vocabulary challenges, grammar puzzles, or timed translation exercises, all of which can be done individually or in teams. The beauty of gamification is that it makes the learning process more interactive and fun, making students more willing to put in the effort required to learn a foreign language.

Project-Based Learning. This method involves students working on real-world projects that require the use of the foreign language. For computer science students, this could involve developing a software or a website in the target language. This provides a context for language use and helps students see the practical applications of their learning. [3]

Project-Based Learning (PBL) is an instructional methodology that encourages learners to gain knowledge and skills through an extended process of inquiry in response to a complex question, problem, or challenge. For foreign language learning, this could involve projects like translating a website or creating a software application in the target language. PBL is incredibly beneficial as it promotes critical thinking, problem-solving, and collaboration, while also providing an authentic context for language use. Additionally, it helps students see the practical applications of their language skills, reinforcing the relevance and importance of their learning. In the end, the students not only gain a deeper understanding of the language but also of the culture and the practical nuances that traditional classroom learning often misses.

Flipped Classroom. In this model, students first learn about new topics at home, often through online modules. Then, they come to class to apply their new knowledge, with the teacher acting as a guide rather than a lecturer. This allows for more personalized instruction and can make better use of class time. [4]

The flipped classroom model reverses traditional teaching methods, delivering instructional content outside of the classroom, often online, and using class time for exercises, projects, and discussions. This model transforms classrooms into active learning environments where students can practice and apply what they've learned at home and address any difficulties they encounter. For teaching foreign languages, this could involve students learning grammar rules and vocabulary at home through online modules and then practicing their speaking and listening skills in class through conversation exercises. The flipped classroom allows for more personalized instruction, as the teacher can spend more time addressing individual students' needs instead of delivering one-size-fits-all lectures. Furthermore, this approach gives students more control over their learning, fostering a sense of responsibility and independence.

Online Language Exchanges. This involves pairing up students with native speakers of the foreign language. They can chat and practice speaking the language online. This provides authentic language practice and cultural exchange.

Online language exchanges offer a platform where learners can interact with native speakers of their target language, providing an excellent opportunity for immersive language practice. These exchanges typically involve video or text chats, where each participant practices the other's language. For example, a student learning Spanish might converse with a Spanish-speaking person learning English, each helping the other improve. This not only gives students a chance to practice their language skills in real-world scenarios but also exposes them to cultural nuances and colloquial expressions that aren't typically taught in classrooms. Furthermore, these exchanges can foster international friendships, broadening students' perspectives and understanding of different cultures. By practicing with a native speaker, students can also gain confidence in their language abilities, which can greatly enhance their learning experience.

AI-Powered Learning Tools. AI can provide personalized feedback, identify areas where the student is struggling, and adapt learning materials to the student's level. There are numerous apps and websites that use AI for language learning. [5]

AI-powered learning tools leverage artificial intelligence to offer personalized learning experiences tailored to each student's needs. These tools use machine learning algorithms to analyse a student's performance, identify areas of struggle, and adapt the content accordingly. For instance, if a student is having trouble with certain grammar rules in a foreign language, the AI tool can provide more exercises and explanations focused on that particular area. These AI platforms often feature interactive exercises, immediate feedback, and progress tracking, creating an engaging and responsive learning environment. Some AI language learning tools even have speech recognition technology that can help students improve their pronunciation. Furthermore, these tools can be accessed anytime and anywhere, making learning more flexible and convenient. With their ability to offer personalized, adaptive, and accessible learning, AI-powered tools are revolutionizing language education in technical universities and beyond.

Code-Switching Exercises. Code-switching, or using more than one language in conversation, is a common practice among multilingual people. In the context of computer science, students can practice switching between their native language, the foreign language, and the "language" of code. This can help them develop the flexibility and adaptability needed to use multiple languages. [6]

Code-switching exercises in the context of foreign language learning for computer science students involve shifting between their native language, the target foreign language, and coding languages. This practice mirrors real-world multilingual environments where people switch languages depending on the context, audience, or subject matter. For instance, a student might write a program in Python, comment on the code in English, and then explain the code's function orally in a foreign language. These exercises not only promote language flexibility but also reinforce the connection between coding and linguistic skills. Students learn to think more broadly about language as a tool for conveying ideas and solving problems, whether that language is spoken or coded. Furthermore, code-switching exercises can make language learning more relevant and engaging for computer science students, as they directly tie into their area of study.

Multimedia Learning. This involves using a variety of media – such as videos, podcasts, and interactive websites – to teach the foreign language. This can be more engaging than traditional textbooks and can provide a more realistic context for language use.

Multimedia learning is an educational approach that incorporates various forms of content such as text, audio, video, graphics, and interactive elements. This approach to foreign language learning can make lessons more engaging and memorable, appealing to different learning styles and preferences. For instance, students can watch videos in the target language, listen to podcasts or songs, read online articles, or use interactive apps. These resources can provide authentic examples of the language in use, helping students understand context, pronunciation, and cultural nuances. Interactive multimedia elements, like online quizzes or interactive diagrams, can further enhance comprehension and recall. Moreover, multimedia content can be accessed anytime, anywhere, adding a level of convenience and flexibility that's particularly well-suited to blended learning environments. Ultimately, multimedia learning can make foreign language acquisition more exciting, practical, and effective.

Microlearning. This approach involves breaking down the learning into small, manageable chunks. This is especially suited to online learning, as students can complete short lessons or exercises whenever they have a few spare minutes.

Microlearning is an educational strategy that breaks down information into bite-sized units, making it easier for students to absorb and retain knowledge. This approach is especially effective for language learning as it aligns with the way our brains naturally process information. For instance, students can learn a few new vocabulary words each day, or practice one grammar concept at a time. Microlearning modules can be quickly completed, making them perfect for students with busy schedules or short attention spans. Moreover, this approach allows for continuous learning, as students can consistently practice and reinforce their language skills throughout the day, leading to more effective long-term retention.

Peer-to-Peer Learning. Students can learn a lot from each other. This can involve online discussion forums, peer review of work, or collaborative projects.

Peer-to-peer learning is an educational approach where students learn from and with each other. It's a collaborative learning strategy that involves sharing knowledge, discussing ideas, and working together on tasks or projects. In the context of learning a foreign language, students can practice speaking with each other, correct each other's grammar, or collaborate on translation projects. [7] This provides opportunities for real-life communication practice and can help students gain confidence in using the language. Peer-to-peer learning also fosters a sense of community, as students can support and motivate each other in their learning journey. Moreover, explaining concepts or correcting mistakes can reinforce the students' own understanding of the language. Peer-to-peer learning, thus, not only enhances language skills but also develops soft skills like teamwork, communication, and problem-solving.

The key to successful blended learning is flexibility. Teachers need to be willing to adapt their methods based on what works best for their students. They also need to keep up-to-date with the latest technologies and learning theories in order to provide the best possible education.

In conclusion, the blended learning approach in a technical university setting offers a multifaceted and effective strategy for teaching foreign languages to computer science students. Leveraging modern

methodologies like gamification, project-based learning, the flipped classroom model, online language exchanges, AI-powered tools, code-switching exercises, multimedia learning, microlearning, and peer-to-peer learning can significantly enhance language acquisition and engagement. These methods not only make the learning process more interactive and efficient but also ensure it is relevant to the students' field of study. Furthermore, the integration of digital learning tools and peer interaction fosters a supportive and engaging learning environment. As technology and pedagogical strategies continue to evolve, it's crucial to adapt and incorporate these innovative practices into the curriculum to effectively equip students with the necessary language skills for the global, technologically advanced landscape.

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