

# Using AI Tools for Personalising Learning in the English Language Classroom: Computer Science Undergraduate Students' Perceptions

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**Abstract**—Up-to-date higher education in general and foreign language training, in particular, require skilled university teachers and the possibility to use the latest scientific and technical achievements. Due to this, higher education institutions and their faculty are constantly searching for brand-new technologies, methods, and tools to train their students. English teachers are always at the forefront of utilising innovative information technologies since these technologies can effectively provide multimodal learning inside and outside the English language classroom. Artificial Intelligence is quickly becoming one of those advances whose appearance can profoundly change the teaching experience and make learning more personal. But until it proves its reliability in providing the appropriate education quality and developing students' subject matter and key competencies for lifelong learning, scientific interest will continue to grow, and heated debates will rage on. The problem of using AI tools for personalising learning in the English Language classroom must be approached comprehensively, taking into account the views of researchers, stakeholders, policymakers, as well as university teachers and students. Thus, this research aims to determine computer science undergraduate students' perceptions of using AI tools for personalising learning in the English Language classroom. To reach the aim, researchers developed a paper-based questionnaire that contained close-ended questions and statements for a rating on a 5-point Likert scale (5 – “strongly agree,” 4 – “agree,” 3 – “neither agree nor disagree,” 2 – “disagree,” 1 – “strongly disagree”). To select participants, the researchers used a purposive sampling method. As a result, the research population comprised 136 computer science undergraduate students from Kyiv National University of Technologies and Design (Kyiv, Ukraine) and Kyiv National Economic University named after Vadym Hetman (Kyiv, Ukraine). The survey was carried out in September-October 2024. The obtained data were analysed using frequency and mean percentage to interpret respondents' responses. The results showed that computer

science undergraduate students unanimously believe that AI tools are highly effective at helping personalise learning in the English language classroom.

**Keywords**—Artificial Intelligence, AI tools, Computer Science Undergraduate Students, English classroom, Higher Education Institutions, Personalised Learning, Teaching and Learning English.

## I. INTRODUCTION

The advent of new technologies and their implementing in different spheres of human life always raise some concerns. And as history shows it takes a long time to ease these concerns which at first do not seem to be easy explainable. The emergence of Artificial Intelligence (hereinafter referred to as AI) and its accessibility to general public has the same fate. What we are witnessing now is a certain distrust of AI by researchers and practitioners and a rise of heated debates concerning their usage in educating students of different ages in our digital society today. And we do believe that these debates will continue until AI proves its reliability in developing students' subject matter and key competencies for lifelong learning and becomes a familiar part of our life.

Literature analysis shows that many scientists still believe that more research has to be done to better understand the full potential of AI and how it can affect the quality of education for present-day and future students, despite the fact that integrating AI tools into the educational process of higher education institutions is becoming more and more widespread. What we see is that different ideas have their strong supporters and strong opponents. And while there is still a debate over the decision to incorporate or not to incorporate AI into classroom teaching, both

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teachers and students learn actively to take advantage of the benefits AI provides.

Bates et al. believe that although higher education institutions can use AI for conducting various administrative tasks, it is too early to state that it can effectively improve learning outcomes [1].

On the contrary, Zhou, Zhang & Chan consider that education institutions should be aimed at adopting a more open approach to integrating and managing AI tools in educational process [2]. This approach is of paramount importance to both students and university teachers as it enables to enhance their AI literacy. The researchers also claim that the use of AI tools supports students' personal learning needs, enhances the principles of self-directed learning and positively influences students' productivity. On the other hand, the researchers admit the fact of ambivalent attitude of university lecturers to the use of AI tools in the education process. Thus, while some university lecturers openly and anticipatorily promote the use of AI in their classrooms, others try to impede this process and view it as a kind of academic misconduct.

The study conducted by Mallillin shows that the ability of AI to provide all the necessary information that students need in the learning process, to guide students' learning activities and to personalise learning helps improve their motivation towards study habits, attitude towards learning and boosts their academic performance [3]. The researcher is convinced that using AI in the learning process teaches students to express their ideas freely and to exercises their critical thinking.

Iqbal is confident that the application of AI tools in training students enables to meet their individual differences and creates favourable conditions for abandoning the one-size-fits-all approach [4].

Chan & Hu claim that present-day students believe that AI tools are effective in personalising learning support, assisting in writing and brainstorming, and conducting research and analysis [5]. However, they emphasise that implementing generative AI into the educational process can help address present-day students' needs and concerns only if educators and policymakers understand students' perceptions. The researchers explain that the insight into how students perceive AI enables policymakers to create guidelines and strategies for their responsible and effective implementation.

The research carried out by Shin also shows the application of Artificial Intelligence in the English language classroom using Flipped Learning has a positive impact on students' self-efficacy and helps improve students' listening and speaking skills [6]. In researcher's opinion, AI provides many advantages to university teachers since AI tools offer great opportunities for developing a wide range of classroom activities and contribute to their professional development.

Zhang, Sun, & Deng express a similar idea and state that introducing innovative digital technologies including

AI and smart classroom technologies into the English language teaching and learning contributes to the motivation for learning and cognitive activity and to the development of students' English language proficiency [7]. Applying a wide range of artificial intelligence and smart classroom technologies in the English language classroom helps university teachers personalise learning and create a more engaging learning environment for their students.

A similar idea can be found in Hartono et al. [8]. Researchers who investigate teachers' and students' perceptions and experiences on the application of AI tools in English language teaching come to the conclusion that present-day English teachers have a large arsenal of AI tools which have to be used in the English language classrooms, namely, intelligent tutoring systems, speech recognition and pronunciation practice tools, language learning apps and platforms, language assessment and evaluation tools, NPL-based chatbots etc. Their systematic use in the English language classrooms effectively improves students' language skills and helps provide personalised instruction.

Crompton et al. suggest that AI is distinguished by great possibilities in English language teaching and learning in general and in improving students' speaking, writing, and reading skills in particular [9]. The study conducted by researchers enables them to state that since the rapid development of AI, there is an urgent need to prepare such English language teachers who know what AI is, what benefits it has, and how English language teachers should use AI benefits in their classrooms to help students master English successfully.

Thus, the literature analysis clearly demonstrates that many present-day researchers share similar ideas concerning the effectiveness of AI tools for personalising instruction in the English language classroom. The use of AI tools for developing assignments makes it possible to address students' needs, interests and, and what is more important, to activate their cognitive and intellectual activity. In the context of our research, we believe that personalised learning is "a teaching and learning approach focused on creating favourable learning conditions in the classroom with the aim to expand students' knowledge and develop soft skills necessary for achieving success in the personal and professional lives" [10, p. 425].

And taking into account the fact that higher education is always at the forefront of utilising innovative information technologies the current research is intended to throw some light on computer science undergraduate students' perceptions towards using AI tools for personalising learning in the English language classroom.

## II. MATERIALS AND METHODS

Since the researchers were interested in finding out computer science undergraduate students' perceptions towards using AI tools for personalising learning in the English language classroom, the researchers used a purposive sampling method to select participants. Given the specific focus on computer science undergraduate

students who learn English at university and who crave to master their English language proficiency, the purposive sampling method allowed the researchers to select respondents who met the criteria for the study. We explain the choice of computer science students because they have a high level of technical proficiency compared with students of other specialties, have an active interest in learning with AI technologies, and are open to incorporating AI tools into their educational practices.

To reach the aim researchers developed a paper-based questionnaire on the basis of the analysis of the scientific literature. The developed paper-based questionnaire contained five close-ended questions and 10 statements for rating on a 5-point Likert scale (5 – “strongly agree,” 4 – “agree,” 3 – “neither agree nor disagree,” 2 – “disagree,” 1 – “strongly disagree”).

The close-ended questions were therefore:

*Do you agree that when learning English in today’s classroom, teachers should consider using AI tools and AI-based tasks?*

*Do you believe that the use of AI tools and AI-based tasks makes your English lessons more personalised?*

*Do you believe that the use of AI tools and AI-based tasks in the English language classroom helps you improve your English language proficiency?*

*Does the use of AI tools in the English language classroom helps improve your AI literacy?*

*Does the teachers’ responsible use of AI tools for creating and sharing educational content and AI-based tasks set a strong example of academic integrity for their students?*

The measurement of computer science undergraduate students’ agreement ratings of the statements about the usefulness of integrating AI tools in the English Language Classroom is based on the 5-Likert scale intervals presented in Table 1.

TABLE 1 INTERVAL LEVEL OF 5-LIKERT SCALE

Mean Interval	Perspective
1.00–1.80	<i>Strongly disagree</i>
1.81–2.60	<i>Disagree</i>
2.61–3.40	<i>Neither Agree nor Disagree</i>
3.41–4.20	<i>Agree</i>
4.21–5.00	<i>Strongly agree</i>

Before the survey was launched, the researchers informed participants that participation in the survey was voluntary and anonymous and the questionnaire did not contain questions regarding personal information. But the participants answered questions concerning demographic information.

136 Ukrainian computer science undergraduate students from Kyiv National University of Technologies and Design (Kyiv, Ukraine) and Kyiv National Economic University named after Vadym Hetman (Kyiv, Ukraine) expressed a desire to take part in the survey. After giving a

consent, all participants were given paper-based questionnaires with statements for rating. The survey was conducted in September-October 2024.

Table 2 presents the demographic information about respondents.

TABLE 2 DEMOGRAPHIC INFORMATION ABOUT RESPONDENTS

Variable		Number (N)	Percentage (%)
Gender	Male	97	71.3
	Female	39	28.7
Year of Study	First Year	41	30.1
	Second Year	44	32.4
	Third Year	29	21.3
	Fourth Year	22	16.2

Source: own study (N=136)

To interpret respondents’ responses the obtained data were analysed using frequency and mean percentage.

### III. RESULTS AND DISCUSSION

The aim of the first question is to find out if respondents agree that when learning English in today’s classroom, teachers should consider using AI tools and AI-based tasks. The results show that 136 respondents (100%) have a unanimous answer on this question.

The second question of interest to researchers is “*Do you believe that the use of AI tools and AI-based tasks makes your English lessons more personalised?*” The results obtained clearly demonstrate that 86 respondents (63.2%) believe that the use of AI tools and AI-based tasks makes their English lessons more personalised. The responses given by 20 respondents (14.7%) are negative and 30 respondents (22.1%) find it difficult to answer this question. Fig. 1 visualises the results on question 2.

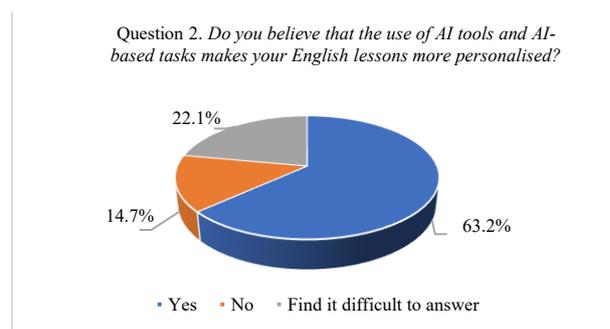


Fig. 1. Respondents’ responses concerning the second open-ended question.

The third question was aimed at finding out if respondents believe that the use of AI tools and AI-based tasks in the English language classroom helps them improve their English language proficiency. The responses given by 92 respondents (67.6%) are positive. 16 respondents (11.8%) have an opposite opinion and 28 respondents (20.6%) find it difficult to answer the question. Fig. 2 demonstrates the results obtained on question 3.

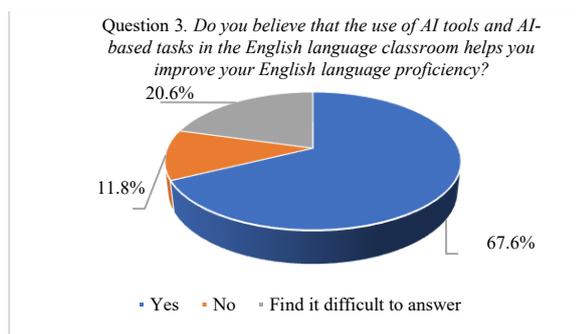


Fig. 2. Respondents' responses to question 3.

The fourth question aimed to find out if the use of AI tools in the English language classroom helped respondents improve their AI literacy. Thus, 84 computer science undergraduate students (61.8%) responded positively, and 33 computer science undergraduate students (24.3%) gave a negative answer. According to the obtained results 19 computer science undergraduate students (13.9%) found it difficult to answer this question. The aggregate results for question 4 are given in Fig. 3.

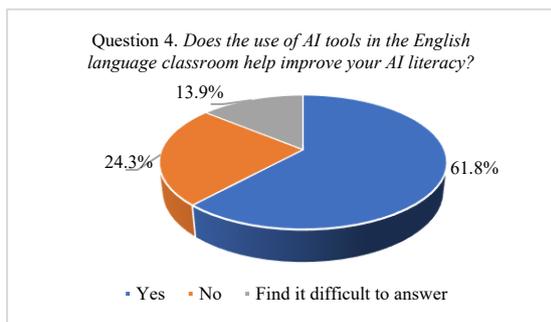


Fig. 3. Respondents' responses to question 4.

The purpose of question 5 was to determine whether the teachers' responsible use of AI tools for creating and sharing educational content and AI-based tasks set a strong example of academic integrity for the respondents. While 81 computer science undergraduate students (59.6%) gave a positive answer, 23 computer science undergraduate students (16.9%) responded negatively. 32 computer science undergraduate students (23.5%) found it difficult to answer the question. Fig. 4 presents the results obtained from question 5.

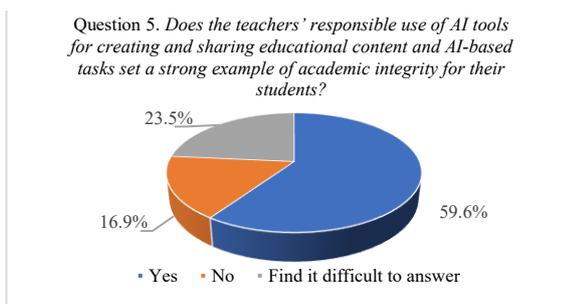


Fig. 4. Respondents' responses to question 5.

Table 2 presents the obtained results concerning computer science undergraduate students' agreement ratings with statements about the usefulness of integrating AI tools in the English Language classroom. For convenience, we use the abbreviation for response options in Table 2: SD (1) – strongly disagree, D (2) – disagree, N (3) – neither agree nor disagree, A (4) – agree, SA (5) – strongly agree.

TABLE 2 RESPONDENTS' PERCEPTIONS TOWARDS INTEGRATING AI TOOLS IN THE ENGLISH LANGUAGE CLASSROOM

Activities	Variables				
	SD (1)	D (2)	N (3)	A (4)	SA (5)
The use of AI tools helps personalise instruction according to students' English language proficiency	0	0	0	60	76
The use of AI tools helps personalise instruction inside the English language classroom according to students' interests	0	0	14	57	65
The combination of AI tools and traditional English language teaching methods helps personalise instruction in the English language classroom	0	0	11	52	73
The ability to use AI tools inside and outside the English language classroom makes the process of learning English more accessible and flexible	0	0	0	57	79
The use of AI translation tools helps me quickly find translations of unknown words, idioms or phrases	0	0	0	37	99
The use of AI translation tools for translating texts on various topics while doing homework assignments in English enables me to make sure that I understand their essence correctly	0	0	9	35	92
The use of AI tools helps me quickly find information I need to do my English homework assignments	0	0	17	58	61
The use of AI tools helps correct and improve my English pronunciation	0	0	19	51	66
The use of AI tools helps me check and correct my mistakes in writing essays	0	0	0	41	95
The use of AI-based tasks in the English language classroom makes lessons more interactive, enjoyable and up-to-date	0	0	0	52	84

Source: own study (N=136)

The obtained results show that the computer science undergraduates demonstrate strong agreement with the following statements, namely, the use of AI tools helps university teachers personalise instruction according to their English language proficiency ( $\bar{x}=4.56$ ), the use of AI tools helps university teachers personalise instruction in the

English language classroom according to their interests ( $\bar{x}=4.38$ ), the combination of AI tools and traditional English language teaching methods helps personalise instruction in the English language classroom ( $\bar{x}=4.46$ ), the use of AI tools inside and outside the English language classroom makes the process of learning English more accessible and flexible ( $\bar{x}=4.58$ ), the use of AI translation tools helps me quickly find translations of unknown words, idioms or phrases ( $\bar{x}=4.73$ ), the use of AI translation tools for translating texts on various topics while doing homework assignments in English enables me to make sure that I understand their essence correctly ( $\bar{x}=4.61$ ), the use of AI tools helps me quickly find information I need to do my English homework assignments ( $\bar{x}=4.32$ ), the use of AI tools helps correct and improve my English pronunciation ( $\bar{x}=4.35$ ), the use of AI tools helps me check and correct my mistakes in writing essays ( $\bar{x}=4.69$ ), the use of AI-based tasks in the English language classroom makes lessons more interactive, enjoyable and up-to-date ( $\bar{x}=4.62$ ).

#### IV. CONCLUSIONS

The current research was intended to throw some light on computer science undergraduate students' perceptions towards using AI tools for personalising learning in the English language classroom. The results demonstrated that the respondents perceived AI tools used in their English language classrooms as effective in improving their English language proficiency (reading, writing, speaking, listening skills, and pronunciation). Moreover, their usage allows them to consider their learning styles, needs, and interests. These respondents also believe that implementing AI-based tasks in the English language classroom can make lessons more interactive, enjoyable, and up-to-date, and they can get valuable hands-on experience working with various AI tools. In this context, we may assume that the purposeful use of AI tools and AI-based tasks can help university teachers personalise learning. For those respondents who expressed an opposite idea or found it difficult to answer the close-ended questions, we may assume that it might be connected with the fear of losing the possibility to freely communicate with groupmates or doing activities that require effort and thorough knowledge of the course material. The results also show that respondents agree that AI tools are efficient in checking and correcting mistakes in writing essays, improving their pronunciation, and helping them find information for doing homework. For those interested in mastering their English, AI tools help respond to their personal needs. According to the results obtained, most respondents believe that using AI tools in the English language classroom helps improve their AI literacy, and the teachers' responsible use of AI tools for creating and sharing educational content and AI-based tasks sets a strong example of academic integrity for them. To sum up, we can state that most respondents recognise the potential of AI tools in personalising learning in the

English language classroom and in helping them understand what they have to improve in primary English.

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