

INTEGRATION OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES INTO THE PROCESS OF TEACHING A FOREIGN LANGUAGE AS A WAY TO FORMING HIGHER EDUCATION STUDENTS' INTERCULTURAL COMPETENCE

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ABSTRACT

The focus of modern methodological studies is the problem of introducing artificial intelligence technologies into the process of teaching foreign languages as a way to form intercultural competence of higher education students. AI makes it possible to create conditions that are as close as possible to the real needs of speakers through a personalized educational environment, simulation of authentic communicative scenarios and provision of instant feedback. The paper analyzes the idea of hybrid pedagogy, which involves the joint activity of a person and artificial intelligence, with AI being responsible for performing routine tasks, and the role of a facilitator within the integrated human-AI system is performed by the human brain. The concept of pedagogical scaffolding (cognitive scaffolding) as a means of supporting students at all stages of the ICC formation is substantiated. This strategy is effective in overcoming the algorithmic bias of large language models and in developing the student's ability to critically analyze recommendations and conclusions generated by artificial intelligence.

KEYWORDS

Artificial intelligence, foreign language, intercultural competence, critical thinking, large language models, hybrid pedagogy, scaffolding.

7.1 PEDAGOGICAL PREREQUISITES AND EDUCATIONAL OPPORTUNITIES FOR USING ARTIFICIAL INTELLIGENCE IN TEACHING A FOREIGN LANGUAGE TO FORM INTERCULTURAL COMPETENCE

The emergence and rapid introduction of artificial intelligence (AI) into the field of higher education has marked a new era in methodology. This is especially important in the field of teaching language disciplines, since the competence of the applicant depends on the availability of access to authentic materials, the professional resource of the teacher and the possibility of receiving adequate feedback. This range of requirements can be implemented under the conditions of transformation of education at the level of digitalization, when distance and blended learning takes place in a single digital environment.

Innovative processes require the emergence of new language units for nomination, which, on the one hand, is a guarantee of continuous intellectualization of speech, and on the other hand, creates obstacles to intercultural interaction. Rapid updating of the lexical dictionary, neologization of speech, the emergence of a large number of general and narrow-field terminology complicates mutual understanding between representatives of different cultural communities.

The solution to the problem lies in improving approaches to language education, when situations, outcomes and strategies are modeled as close as possible to the conditions of authentic realities. With the collaboration of human intelligence and the capabilities of neural networks, it is possible to avoid overgeneralization or, conversely, overspecification of concepts that complicate understanding in the global space.

AI, which encompasses systems capable of performing such cognitive tasks as natural language understanding, pattern recognition and adaptive learning, is integrated into the educational environment to provide a personalized approach and instant feedback. This allows students to achieve professional and academic goals faster [1].

The use of AI in the educational process promotes learning autonomy and is the key to a successful future for students, since almost every field of knowledge involves international interaction, such as: international research projects, scientific events, internships, advanced training, work in virtual teams. Autonomy in language learning, according to researchers, has become a leading educational concept when there has been a paradigm shift from traditional, teacher-centered learning to methods that are student-centered, where the student him/herself has the opportunity to influence the learning process. This system of self-directed learning emphasizes the ability of students to define their own goals, choose appropriate methods, and track progress [2].

Thus, within the framework of a scenario with the integration of intercultural contexts, students may be asked to participate in dialogues where they choose responses to the requests of a virtual interlocutor from another culture. Instant feedback allows you to assess how successful the chosen communication strategy is and does it meet the norms of intercultural etiquette. Adaptive exercises may include modeling business negotiations, academic discussions, or presentations, where students need to predict audience reactions, select appropriate lexical and grammatical constructions, and substantiate their statements with arguments.

In this way, the involvement of AI tools makes foreign language classes the key environment, in which the task of developing intercultural competence (ICC) skills is best implemented. It updates its functionality, ceasing to be just a safeguard against misunderstandings, but instead becomes an indicator of early detection of cultural "blind spots".

However, despite the widespread use and proven high effectiveness of AI in improving linguistic accuracy and overcoming psychological barriers, the integration of network technologies into higher education is still accompanied by a significant list of insufficiently researched and unresolved issues.

First, the very concept of ICC is ambiguous and cannot be unified, at least at the current stage of scientific development, since it is located in an interdisciplinary field – at the intersection of constantly changing socio-cultural, political and technological factors. Secondly, AI can currently only imitate, not create, personal experiences of impressions and feelings, which is an obstacle to empathy and tolerance, and therefore jeopardizes intercultural sensitivity.

Thirdly, when large language models (LLM agents) are used to simulate intercultural interaction, they can synchronously reproduce or reinforce cultural bias and stereotypes, learning from generalized data sets [3]. This disadvantage can be amplified when AI is unable to distinguish such artistic techniques as contextual irony and post-irony, sarcasm, grotesque, etc.

Based on this, the neural network can cause a reverse effect on the speaker, further distancing him/her from intercultural awareness. This necessitates an adjustment of the goal of modern methodology – to focus on the speaker's ICC formation in close connection with the specified reverse effect neutralization.

7.2 THEORETICAL AND PRACTICAL ASPECTS OF INTEGRATING AI INTO THE DEVELOPMENT OF INTERCULTURAL COMPETENCE: A REVIEW AND ANALYSIS OF SCIENTIFIC DISCOURSE

As the theoretical and methodological basis of our investigation, we chose the scientific achievements of 2015–2025, which indicate that researchers in the last decade are interested in the topics of the content evolution of ICC, personalization of learning, hybrid (blended) pedagogy, the introduction of editing systems and automated assessment of speakers' skills and abilities, scaffolding as a cognitive framework, the issue of anxiety and the risk of dependence on AI, overcoming algorithmic bias and the formation of critical interaction competence (CIC). Such problems are determined by the formation goals of ICC – the ability to plan, produce, critically evaluate and correct interaction in a multicultural environment.

Intercultural competence in the context of globalization is both a goal and a tool of modern learning. From a historical perspective, scientific thought interprets the ICC model as one that includes knowledge, skills of interpretation and interaction, as well as critical cultural awareness [4]. It just laid the theoretical foundation for determining the features of the approach to the ICC development in the process of teaching foreign languages at the end of the last century.

Decades later, the role of foreign language education reaches a new level, growing to the concept of "intercultural citizenship". Such a role reflects the speaker's significant progress: from communication skills (when the focus of attention is fixed on how to convey one's opinion and adequately understand the answer) to intercultural competence (when the speaker is able to understand the cultural context, and therefore, the reasons for a certain behavior of the interlocutor), and then directly to cultural citizenship (when the speaker takes responsibility for the causes and consequences of his/her own linguistic behavior and is able to influence the result) [5].

The definition and systematization of the components led to the next stage of the dynamics of knowledge about ICC – the need to understand the process and pyramidal model of the ICC development and the systematization of the criteria for evaluating the results. Researchers have proposed the following interpretation of the process model and the "pyramid" of ICC: initial attitudes → knowledge and skills → internal results (for example, a change in the coordinate system) → external results (adequate and effective behavioral manifestations) [6, 7]. By a change in the coordinate system we mean a change in value orientations, when a person moves away from a stable understanding of objects and phenomena beyond their own cultural awareness and develops the ability to perceive the universe from the standpoint of different cultural logics. The result of this is the formation of cognitive flexibility skills.

The further task of the methodology was to create an educational environment open to dialogue, where participants gain experience in intercultural interaction. The emergence of AI technologies has provided almost limitless opportunities for modeling such interactions, which has significantly changed approaches to

language teaching. AI-based education offers the possibility of learning that is more personalized, flexible, inclusive, and engaging; it can provide teachers and students with tools that allow them to respond not only to what is being learned, but also to how it is being learned and how the student feels about it [8].

It is important to note that in this study, we rely on the definition of AI proposed by Luckin, where AI is characterized as computer systems that have been designed to interact with the world using abilities (e.g., visual perception and speech recognition) and intellectual behaviors (e.g., evaluating available information and then using the most appropriate actions to achieve a given goal) that have traditionally been considered purely human [8].

This approach, deeply rooted in the concept of Intelligent Computer-Assistant Language Learning (ICALL) and based on the ability of AI to imitate human cognitive processes, makes it possible to create adaptive learning environments. Therefore, the neural network becomes a full participant in the educational process, taking its rightful place in the human-AI system, where the teacher and artificial intelligence function as logically connected subjects of pedagogical support.

Campbell-Hovis notes that this is possible thanks to big data processing and machine learning algorithms that adapt in real time to the behavior of the learner, calculating his/her strengths and weaknesses and creating a fully personalized set of learning materials for each lesson (which gives rise to new ethical implications). Moreover, and no less importantly, the algorithm learns from both individual and collective behavior of the learners, which makes its predictive ability even stronger [9].

Other expected benefits of ICALL include: individualized learning pace; instant feedback as a strong motivational factor; individualized repetition of topics and emphasis on tasks, in which the speaker showed weak results; rapid and objective assessment of his/her progress; better understanding of learning preferences and strategies; prediction of future results with high probability; rapid and objective evaluation of learning tools [10].

Thanks to the collaboration between AI and the teacher in a single human-AI system, the level of stereotyping, generalization and excessive cognitive load of the speaker is reduced, which allows avoiding the danger of demotivation. Such a hybrid approach, combining classroom and online learning formats, is currently considered by researchers to be the most relevant and productive [11–14].

Our personal experience of teaching a foreign language in higher education institutions allows us to conclude that demotivation mostly occurs at the intermediate and higher levels of foreign language competence, when the speaker feels the effect of the so-called plateau and is not ready to continue learning further. This often occurs as a natural phenomenon and mostly concerns responsible students who have achieved significant success in the target language at previous stages.

At this level, learners usually do not ask themselves what to say when they find themselves in real communication situations. Instead, the question "How to say it correctly and as close as possible to natural language?" poses an almost impossible task for them, since comparing themselves with native speakers has the opposite effect, which students are often unaware of. Therefore, support is especially important, and the very concept of cognitive framework (or scaffolding) is the object of lively interest of methodologists [15–18].

Modern digital tools, including platforms for editing texts, automatic evaluation and simulation of communicative scenarios, will provide systemic support at this stage and help reduce psychological barriers,

since the speaker will focus not on his/her own fears and experiences, but on tasks of a substantive and pragmatic nature, on the analysis of the interlocutor's communicative strategies and on the development of the ability to respond adequately in different cultural contexts. Such a focus allows the student to gradually switch attention from his/her own anxiety to effective interaction, which contributes to the formation of intercultural competence.

In such conditions, there is a foundation for the organic development of the speaker's autonomy, when he/she not only adequately responds to his/her own flaws and imperfections in speech, but can also be a participant-mentor, helping others navigate the educational material, correct mistakes and form their own communicative initiatives. Our experience shows that, provided a comfortable environment of mutual assistance and trust is created, students generally respond positively to such mentoring and are willing to show initiative.

7.3 APPLICATION OF HYBRID LEARNING METHODOLOGY AS PEDAGOGICAL SCAFFOLDING WITH THE INVOLVEMENT OF ARTIFICIAL INTELLIGENCE TOOLS

The justification of research goals and hypotheses regarding the integration of artificial intelligence into foreign language teaching for the formation of ICC is determined by the fact that in modern language education there is an urgent need for interdisciplinary integration. The combination of intellectualized meanings, as conveyed by language units to denote cultural, scientific, historical, philosophical, historiographical concepts, creates qualitative conditions for acquiring intercultural communication skills.

This provision defines the purpose of this scientific investigation – to theoretically substantiate and describe the features of the integration of artificial intelligence technologies into the process of teaching foreign languages. To this end, we plan to consider such issues as: the concept of hybrid learning – as a pedagogical model of AI-oriented learning, scaffolding strategies – as implementation tools, the impact of AI on the emotional-value sphere – as a psychological basis, the role of AI in combining theoretical knowledge with practical skills – as the implementation of a cognitive-practical mechanism, the development of critical interaction competence (CIC) – as a strategy.

Hybrid (blended) learning integrates classroom interaction between the teacher and students with distance work formats in an online environment, which is a logical response to the challenges facing the educational community in the era of learning digitalization. The popularity of this approach is evidenced by the increasingly frequent appearance of relevant research in foreign and domestic science [11–13].

Given the specifics of a personalized approach to learning, AI selects the complexity of tasks based on the student's level of experience, focusing on the fact that stimulating the competence growth includes a clear focus on surpassing previously achieved results. As a result, the hybrid learning method does not simply use technology, but creates a new pedagogical paradigm, where AI acts as a teacher's assistant, which takes the connection between theory and practice to a qualitatively different level and contributes to the development of intercultural skills.

Under the conditions of hybrid learning, classroom lessons give students the opportunity to receive support from the teacher as a facilitator. This support is important at different levels and stages, is associated

with the psychological characteristics of the individual and directly depends on the degree of his/her trust in the teacher. Moreover, it is aimed not to contradict the student's own autonomy, but on the contrary, to give/her him the opportunity to flexibly adapt to new conditions and support his/her motivation.

In turn, artificial intelligence tools, the effectiveness of which has been proven through theoretical and empirical research, provide systematic and personalized support in the online environment. Scientific discourse emphasizes the importance of asynchronous scenarios, when digital platforms cease to be only auxiliary tools and are able to perform the function of scaffolding (cognitive framework) [16].

Researchers describe scaffolding strategies as temporary auxiliary components that will help students develop new ideas, new concepts and new abilities [17]. Based on the scaffolding model developed by A. Walqui [18], we offer a list of cognitive scaffolding in teaching a foreign language that will reduce anxiety and increase student motivation. Within the framework of our topic, we also define the nature of ICC skills that are key for each of the stages:

1. Modeling. The teacher involves AI functionality in the educational material, which provides samples of authentic speech, and speech behavior (oral and written) in accordance with the topic (ChatGPT, Claude, Google Gemini). Depending on the level of the target audience, such samples are guidelines for imitation at different levels of language, such as: phonetic, lexical, grammatical, syntactic and discursive. At this stage, the effectiveness of AI tools contributes to the formation and consolidation of language norms, reduces the anxiety of speakers, and determines the directions of the sociocultural awareness formation.

The development of ICC skills at this stage involves the stimulation of basic intercultural sensitivity and attentiveness to verbal signals and sociocultural norms. Students gain experience in recognizing differences in the speech of speakers of another culture and acquire the skills to interpret authentic language samples.

They gain their first experience of empathic feelings, which helps to avoid cultural conflicts, become more attentive to the context of communication and the stylistic aspects that native speakers use to communicate the meanings of certain concepts. They also have an increased tendency to correctly and critically analyze linguistic material in light of the relevant socio-cultural context.

2. Bridging (relying on previously acquired knowledge and skills). At this stage, the AI functionality helps the teacher to connect new material with previous knowledge, establishing a logical sequence between the structural components of knowledge that must be mastered. We believe that at this stage, the resources of both languages - the source and the target - can be involved, if this makes it possible to reduce the speaker's tension and anxiety. Models, such as ChatGPT and DeepL are ideal for this.

So, DeepL is one of the most advanced neural machine translation services, and it is valuable for speakers in that it establishes interlingual parallels when processing foreign-language texts, allowing them to see the connection between familiar and new speech units. Also, when working with texts presented in parallel in both languages on the same screen, the user has the opportunity to expand knowledge about the stylistic and connotative aspects of the target language.

The development of ICC skills at this stage occurs due to the ability to compare their own cultural experience with new knowledge. Students activate the ability to establish intercultural correspondences and contradictions. In the process of working with language material, applicants learn to form critical thinking about their own stereotypes and prejudices, adapt previously acquired knowledge to formulate conclusions

or justify statements in a new communication situation. They identify signs (symbols) of culture in texts or oral speech.

3. Contextualization. The ability of a neural network to create an authentic environment is critically important at this stage, because the teacher's task is to present new material through the prism of a socio-cultural context, the bearer of which he/she is not. However, in the age of high technology, what will become a difficulty for a person will be another ordinary task for artificial intelligence.

It is about the connotative load of linguistic units, stylistic figures, metaphor and phraseology, with the help of which such pragmatic content is created. Firstly, this task involves the use of high-quality audio-visual content. Secondly, for the implementation of this goal, platforms that do not simply provide lists of words, compounds and sentences, but are able to offer real communicative scenarios are effective.

In contextual support, teachers can use a large number of AI tools, so that students gain knowledge not only about the form, but also about the meaning and function of language, such as: platforms for cultural context and realities (National Geographic Learning, BBC Learning English); audio and video functionality, when the interesting content of the proposed materials is enhanced by the availability of video subtitles in different languages, which is extremely important for the formation of ICC (YouTube, TED-Ed, FluentU, Ed-puzzle); multimodal dictionaries and corpora (Oxford Learner's Dictionary, Cambridge Dictionary, Longman Dictionary, Sketch Engine); multilingual generative platforms for creating visualizations (Canva, DALLE, MidJourney).

The development of ICC skills at this stage is aimed at activating the ability to interpret cultural meanings and social expectations of the interlocutor. Students develop the ability to adapt their own speech to the cultural norms and contexts of a different mentality.

Cognitive empathy and the ability to predict the interlocutor's reactions are developed; skills for analyzing the goals and intentions of the interlocutor in intercultural interaction in different genres of speech appear. The level of contextuality is emphasized, which increases communicative flexibility and readiness for adaptation. Students learn to evaluate the effectiveness of their own strategies in certain situations.

4. Building linguistic and cognitive schemes. At this stage, AI assists the teacher in creating content that helps simplify the perception of information and structure educational material in the form of tables, diagrams, schemes, interactive boards (Canva, Miro, Whimsical, MindMeister).

The development of ICC skills at this stage includes the systematization of cultural and linguistic information. Applicants acquire skills in building cultural patterns; skills in highlighting key elements of culture are formed; the ability to predict communication scenarios and adjust their own behavior is developed. In addition, intercultural conflict resolution skills are practiced.

5. Text representation. The teacher's task at this stage of scaffolding is to form the genre and style awareness of applicants, as an important ICC component. Thus, one content is presented with the help of AI tools in different genre colors, in different speech styles, which is especially effective for students of technical specialties, since they can see the features in the use of academic and professional contexts. We consider the best resources for this to be QuillBot, DeepL Write, Jasper AI.

The development of ICC skills at this stage involves the activation of ICC skills related to the ability to adapt their speech in accordance with the conditions of a certain cultural or professional situation.

Students gain experience in using the style and register of speech in accordance with the characteristics of the addressee and at the same time learn to evaluate their own texts from the point of view of cultural acceptability and genre compliance.

6. Development of metacognition. This stage is strategic for the formation of student autonomy and critical interaction competence skills. For this task, it is advisable to use AI chatbots with feedback and AWE systems. The student can independently choose the pace of mastering the material in hybrid learning conditions, independently check their knowledge, see progress, receive instant feedback using Grammarly, Perplexity, Edmodo, Kahoot!, Quizlet, Mem AI.

The development of ICC skills at this stage is already associated with the status of autonomy and CIC. Students understand how to analyze their own communicative actions and make informed decisions in an intercultural dimension. They develop skills of self-analysis and self-control, can form skills of mentoring and supporting other speakers, integrate their knowledge and skills into experience in order to be maximally effective when interacting with interlocutors. They can critically evaluate information and digital resources, analyze biases and adapt strategies.

Since a large number of world and Ukrainian educational institutions offer the study of specialized disciplines in foreign languages (English, etc.), there is a need for widespread use of scaffolding in technical HEIs, since the pedagogical idea underlying this concept involves temporary support for students in overcoming difficulties in completing assigned tasks. This is important, because these difficulties are associated with the simultaneous study of professional and language material, when a foreign language becomes a tool for acquiring knowledge [15].

In addition, the simulation of communicative scenarios and the implementation of project tasks is a trigger mechanism for activating soft skills that are in demand at this stage of society's development, such as: stress resistance, critical and analytical thinking, teamwork, risk management and time management.

7.4 THE AI IMPACT ON THE AFFECTIVE SPHERE: FROM REDUCING ANXIETY TO AUTONOMY

Affective factors are the litmus test that determines an individual's psychological readiness for interlingual interaction and the limits of his/her personal barriers in dialogue with representatives of another culture. Due to the fact that in the conditions of ICC an individual deals with manifestations of a different mentality, he/she sometimes feels awkward when it is necessary to politely interrupt the interlocutor, take the initiative in communication, change the direction of the discussion, encourage the partner to discuss certain topics.

In this case, it is effective to involve two teachers as facilitators of the educational process, one of whom is a native speaker of the culture of the country whose language is being studied. Such assistance will help students immerse themselves in authentic content without losing focus on the learning objectives.

Sociocultural competence is formed at the stage when the speaker is ready to overcome certain psychological barriers and perceive another system of values as equal. To this end, creating a safe learning environment plays a key role, and assisting AI systems instead of a living person in performing certain tasks will only improve the result, as it will avoid direct evaluation by another person.

Affective factors play a significant role in learning a foreign language, as they demonstrate the interaction between the speaker's feelings, thinking and actions, so there is no separation of reason and emotions; emotions, thinking and learning are interconnected [19].

First, from a neurobiological point of view, it is believed that the human brain has difficulty remembering things that do not have an emotional connection, since without emotions there will be no interest, awareness and attention, which are critical components in the learning process. In addition, to attract the student's attention to the necessary information, the brain must associate it with meaningful experiences to facilitate memorization, and here affective factors come to the rescue, which make each learning experience meaningful and prevent low self-esteem [19].

The use of automated writing evaluation systems (AWE) and editing tools allows you to make learning as comfortable as possible for learners. Systems, such as Grammarly, Write & Improve (Cambridge), Criterion (ETS), in foreign language learning are a tool for formative assessment and pedagogical scaffolding (cognitive framework), which is effective in a human-AI system, provided that it is combined with the expert role of the teacher.

Monitoring the process and learning outcomes of students of higher educational institutions who used Grammarly on an ongoing basis to identify various types of errors and analyze texts for coherence, logic of presentation, structure and genre compliance, proves an increase in the level of motivation and reflection of speakers. Such an empirical study by Dizon and Gold demonstrated a significant reduction in language anxiety and an increase in autonomy among the respondents. It was concluded that AWE allows students to spend less working memory on lower-level tasks (e.g., spelling, grammar, punctuation, translation) and thus more time on higher-level tasks, such as writing and organizing a text [20].

The authors' analysis of student surveys showed that 70% of the participants believed that Grammarly helped them identify errors in foreign language texts and flag them for further correction. About 40% of the respondents said that they liked using the AWE tool, and about 30% found it easy to use. The last identified benefit was increased confidence, which was mentioned by five participants [20].

The results obtained in this investigation are consistent with the results of other studies on the role of AWE systems in foreign language teaching, which empirically prove the ability of digital tools to reduce anxiety and, conversely, increase autonomy in working with educational material [21].

AI systems also help prevent plateauing in second language learning. The student receives immediate feedback and becomes more confident in correcting his/her mistakes, which allows him/her to avoid feelings of failure and uncertainty about his/her choice. Speakers can track their own progress over time by leveraging AI analytics, such as personalized performance dashboards, learning progress visualizations, and automated error and achievement reports. Combined with the ability to receive recommendations for further tasks, this reduces the cognitive load on students and increases their readiness for ICC.

However, it is important for speakers to learn to critically evaluate the feedback they receive, taking responsibility for which results to accept and which need to be adjusted with the facilitator. Moreover, while AWE tools provide unbiased and timely feedback, passive acceptance of results can lead to overreliance on AI.

Therefore, the key skill in the collaboration of human intelligence with artificial intelligence is not just the ability to react quickly and correct errors, choosing from the proposed options, but also understanding

why the editing system marked certain points as incorrect and suggested correction, and which errors should be given targeted attention as systemic. This human ability turns automatic correction into a conscious learning process, which is important for forming the ability to draw conclusions about the effectiveness of communicative decisions in an intercultural context

7.5 AI FOR THE FORMATION OF THE COGNITIVE–PRACTICAL COMPONENT OF INTERCULTURAL COMPETENCE: FROM KNOWLEDGE TO PRACTICE

Determining indicators of the state of the ICC formation should take into account cognitive (knowledge) and practical (activity) criteria. The content of the first criterion is the concept of the level of knowledge acquisition, its determination through various indicators that reflect the volume, depth and systematic understanding of sociocultural and intercultural categories.

The second criterion reflects the state of implementation of acquired skills and abilities, the degree of autonomy, when speakers feel confident, operating with strategies of speech behavior, are able to select them in accordance with the stylistic and genre nature of communication, and also skillfully correct them if necessary. It is the practical criterion that determines the state of the intercultural competence formation.

In the context of digital learning, the formation of ICC cognitive and practical components is ensured by the ability of AI to provide appropriate authentic content, adapt the learning environment to the personal needs of the speaker, and simulate professionally oriented communication. AI platforms allow students to move from theoretical language acquisition to its functional use in intercultural situations without cognitive overload.

AI tools provide the opportunity to work with authentic texts of almost any level of complexity for higher education students. This is especially important for future specialists in technical industries, because the latest information in the field of science is initially published in the languages of international communication.

The status of English as a globally recognized lingua franca puts it in first place among the languages, by which the most valuable knowledge of humanity is transmitted to the next generations. That is why the functionality of almost every digital platform has the ability to choose English as the main language of the interface and educational content.

AI can provide competent support even in setting goals and predicting learning outcomes. Such opportunities are realized thanks to adaptive learning systems – AI platforms that analyze individual progress, offer personalized recommendations, and help optimize the educational process based on data on the actions and achievements of each student, such as: monitoring progress, forming individual goals, reporting on achieved results, and predicting the complexity of subsequent tasks [22].

For this, users will find Quizlet, Praktika – AI Language Tutor, Duolingo, Babbel useful. They allow you to track your progress in learning – both in the short and long term, taking into account the monitoring of success at certain stages of the course. If a student does not cope with a certain part of the task, he/she can return to it over time, because the results obtained earlier are stored and taken into account.

To determine the criteria for selecting AI platforms for learning a foreign language, we asked the applicants a question about the critical advantage of each of them, which determines the priority of its use. The

survey was attended by 12 first and second year students of the Faculty of Mechanical Engineering aged 17 to 19, who, according to them, are familiar with each of the proposed platforms and systematically use their resource for learning a foreign language or translating and editing texts.

It turned out that most often students chose two of them – Duolingo (75%) and Quizlet (25%). Among the advantages chosen by Quizlet supporters, it was indicated that it allows you to create the necessary content as quickly as possible and store it for a long time, use sets of cards compiled by other users, upload them to the library, edit as needed, change the direction of translation, etc. In contrast, among the answer options of Duolingo supporters, it was interesting that the ability to learn a certain foreign language by choosing another foreign language as the source was identified as a critical selection criterion, namely: students chose German as the target language, and English as the source language.

In the survey of platforms for editing and composing texts of various genres of general and professional interest (except for ChatGPT and Gemini, which were not taken into account in this study as undisputed favorites based on the results of previous surveys), DeepL (66%), Grammarly (8.3%) and Quillbot (8.3%) were in the lead. We repeat that all students who participated in the survey reported that they systematically turned to these digital tools precisely to get help in working with foreign language content.

According to the respondents, the popularity of DeepL is associated, firstly, with its contextual, genre and style sensitivity, and secondly, with the ability to quickly go to the application website through a pop-up window at the bottom of the screen if necessary to edit the text. The results obtained are consistent with research conducted by teachers of the Faculty of Applied Linguistics in the Czech Republic.

Thus, 94% of the students reported that using DeepL helped them improve their language skills, 63% noticed a significant increase in vocabulary as a result of using DeepL Translator, 100% of the participants admitted that they would use DeepL in the future [23].

In the study, we share the opinion of domestic educators who propose dividing task types by functional purpose into the following groups:

- 1) for better vocabulary acquisition (YouGlish, Google Images, etc.);
- 2) for developing academic reading, analytical thinking, and oral speaking skills (QuillBot, etc.);
- 3) for expanding vocabulary (Gemini, ChatGPT);
- 4) for developing English professional writing skills (Grammarly, etc.);
- 5) for improving public speaking, communication, and creative thinking skills (Google Slides, Prezi, etc.);
- 6) to practice communication skills in answering technical questions and discussing career goals (Interview Warmup by Google, etc.);
- 7) to systematize vocabulary (ChatGPT, QuillBot, etc.);
- 8) to consolidate and systematize knowledge (Quizlet, etc.);
- 9) to practice correct pronunciation (GetPronounce)[1].

In our opinion, such a classification of tasks can significantly contribute to the development of ICC, since it takes into account its three main components, namely: cognitive, practical and reflective. It is based on a functional approach to communicative activity.

First, tasks that emphasize work with vocabulary provide a stable cognitive basis for ICC – the ability to perceive socioculturally marked and terminological units, rules and norms that regulate the use of language

in an authentic environment. They help to avoid literal translation and allow for a more subtle understanding of the meaning of words (reflected in positions 1, 3, 7, 8).

Secondly, tasks aimed at academic reading, critical thinking, oral and written speech imitate authentic written and oral situations, contributing to understanding the mechanisms of transmitting ideas and meanings, taking into account genre-style scenarios and understanding the pragmatic conditionality of communicative choice (reflected in positions 2, 4).

Thirdly, tasks on public speaking, communication and creative writing imitate authentic intercultural communication situations and require taking into account the social roles of the interlocutors. Such tasks form the ability to understand both the real goal of the interlocutor and his/her hidden intentions and desire to influence the listener (reflected in positions 5, 6).

Fourthly, tasks for the development of correct pronunciation help create a positive image of the speaker, and therefore, minimize psychological and communicative barriers. Correct pronunciation reduces the risk of misunderstandings and cultural conflicts (reflected in position 9).

The presence of a high level of orthoepic competence also provides a communicative function, because it stimulates the speaker to use words belonging to the layer of internationalisms, since such language units, as a rule, have similarities in form, but differences in phonetic composition. This also applies to words that are usually in the passive vocabulary due to their excessive graphic complexity or low frequency of use in the texts that the speaker has dealt with.

The complexity of the globalized multicultural environment, in which different systems of values, norms and ideas coexist, sometimes polar opposite to each other, requires complex forms for obtaining knowledge and forming competencies. Therefore, in harmony with the hybrid approach to learning, a hybrid approach to the use of artificial intelligence tools should be formed. Since platforms have different functionalities, their integrated use seems to be effective for building competence in the target language. This approach enables a balanced use of technologies, where the advantages of one tool compensate for the disadvantages of another.

7.6 DEVELOPING CRITICAL INTERACTIONAL COMPETENCE (CIC) AND OVERCOMING ALGORITHMIC BIAS

A fundamental problem with large language models (LLMs) is their susceptibility to algorithmic bias. LLMs, when trained on vast amounts of data from the Internet, can inadvertently reinforce or reproduce stereotypical views of cultures, which undermines empathy and intercultural tolerance. Moreover, users of systems based on large language models are highly prone to getting stuck in interactive actions with culturally essentialized narratives [3].

Blindly accepting such data "on faith" does not necessarily depend on the development level of the individual's intelligence. Due to the possibility of instantly obtaining the necessary information or answering a question that requires a significant expenditure of time for the human brain, a person gradually gets used to unconditionally trusting the results offered by neural networks. It begins to perceive AI as a more advanced source of information and data processing compared to the capabilities of human intelligence, since AI is built on the basis of encyclopedic possession of information.

The problem of bias arises not when speakers encounter its manifestations and adequately respond to them, but when there is an ignoring of the danger of consolidating harmful stereotypes. Then there is a routinization of ideas that were initially formed in the human mind as assumptions. The teacher's help is mandatory at this stage, because he/she can direct the applicant to a critical assessment of the results obtained with the help of AI.

The need to develop intercultural sensitivity is associated with the natural tendency of carriers of a certain culture to stereotyping and an essentialist worldview. From a philosophical point of view, such a worldview is based on the idea that things have eternal and unchanging meanings. It is formed through the received interactions with the universe and is deeply rooted in cognitive structures, which causes a certain insensitivity and sometimes intolerance to ideas that are at odds with the acquired experience. In this way, each representative of a cultural community has his/her own "repertoire" of behavior in communicative scenarios.

The solution is not to abandon LLMs, but to transform their bias into a didactic trigger. We consider the debriefing method to be effective in solving this problem. This approach has been described in scientific research as one that allows reducing students' indecisiveness during the production of monological and dialogical speech, while overcoming the difficulties of teachers in using appropriate questions to actualize the acquired knowledge [24, 25].

Researchers identify six benefits of debriefing as a method of cognitive scaffolding:

- 1) debriefing serves as a universal tool for foreign language learning from one's own experience;
- 2) it helps to develop a student's development trajectory to achieve short-term and long-term learning goals;
- 3) debriefing promotes team consolidation;
- 4) this technique is valuable for the professional competence development;
- 5) in the process of debriefing, students develop important skills in providing constructive feedback;
- 6) debriefing creates a space of emotional support [24].

In our opinion, the most important factor in implementing this strategy in the learning process is debriefing as an opportunity to create a space of emotional support.

After LLM simulations (for example, a simulation of an interview for an international position, during which there is a risk of algorithmic bias), the teacher conducts a mandatory debriefing, which is central to the development of critical interactional competence. The purpose of the debriefing is to stimulate students to engage higher cognitive functions and critically analyze the results obtained with the help of AI.

For example, they should establish:

- what cultural assumptions or stereotypes, explicit or implicit, were noticed during the communication;
- whether the reaction to the relevant cultural triggers was adequate or rather essentialist;
- how and to what extent the proposed interaction scenario differed from the expected;
- how, in their opinion, the communicative strategy needs to be adapted to overcome algorithmic biases.

This reflection process teaches students to recognize problematic aspects, critically evaluate AI as a source of information, take responsibility and consciously choose an adequate language strategy in intercultural communication.

7.7 DISCUSSION OF THE RESULTS OF SECTION 7

The functionality of modern AI systems creates unprecedented potential for learning foreign languages and forming students' intercultural competence. What was an innovation ten or twenty years ago has become systematic due to the speed of society's transition to intelligent technologies.

Artificial intelligence tools allow us to bring the educational process to a qualitatively new level, when a safe adaptive environment is created using digital platforms, in which the speaker him/herself chooses a comfortable learning mode. Creating simulation scenarios allows the learner to immerse him/herself in an authentic context and use the acquired knowledge in practice.

However, there is a threat of excessive dependence of speakers on recommendations and conclusions obtained thanks to algorithmically controlled systems. This disadvantage of AI must be corrected through pedagogical support by a teacher who performs the function of a facilitator in the educational process. AI is able to provide instant feedback, but it is characterized by algorithmic bias. Instead, the teacher chooses digital tools that can support the speaker in his/her autonomy of learning, reduce anxiety and develop critical interaction competence.

The ability to be critical of the information received in the asynchronous digital environment is formed as a response to the teacher's efforts to establish an open dialogue with the learner in order to prevent the entrenchment of misconceptions. If this is ignored, then the routinization of assumptions and stereotyping of ideas may occur.

The idea of hybrid pedagogy, when the collaboration of AI and human intelligence within the framework of classroom and online learning is considered as a complementary and logically motivated process, is a conceptually sound and methodologically appropriate response to the challenges of education digital transformation. Moreover, the hybrid approach is also recommended to be used when performing various, including professional, communicative tasks, involving the potential of several AIs in accordance with the tasks and goals of the lesson, if necessary.

This is confirmed by numerous surveys and questionnaires of higher education students who take advantage of digital platforms to improve their results in learning foreign languages. Thus, the students note the opportunity to learn a third foreign language using a second foreign language as a source (for example, English – a globally recognized lingua franca) as a critical advantage of Duolingo, and DeepL's contextual, genre and stylistic sensitivity as a functionality that ensures the most adequate reproduction of meanings, terminological accuracy and semantic capacity as a guarantee of successful intercultural communication.

Pedagogical scaffolding as a model of cognitive framework, involving such techniques of practical support for the speaker as: modeling, bridging, contextualization, construction of linguistic and cognitive schemes, text representation and development of metacognition, is focused on helping the student in the gradual transition from guided activity to autonomous, conscious and self-regulated learning.

The idea of debriefing after LLM simulations – as a technique for overcoming the consequences of stereotyping and essentialist narratives – allows you to form the affective-reflexive components critical for ICC – intercultural sensitivity and tolerance. Such an environment creates psychological support for

speakers, allows you to establish cause-and-effect relationships in the behavior of speakers of another culture, and learn to perceive their value system as equal to your own.

In conclusion, we note that the integration of artificial intelligence technologies into foreign language teaching is not only a technological innovation, but also a necessity for the effective formation of higher education students' intercultural competence. In the future, further, more detailed research into the impact of the debriefing method on real changes in the cultural interaction of speakers, the degree of their tolerance and intercultural sensitivity is possible.

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