https://doi.org/10.31489/2026Ped2/149-159
UDC 37.032
Received: 16.01.2026 | Accepted: 20.04.2026

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Collaborative AI-mediated projects in intercultural communication education: Student perceptions and predictors of learning satisfaction

This mixed-methods study examines the perceptions of translation students on collaborative projects utilizing artificial intelligence in the "Theory and Practice of Intercultural Communication" course and finds the elements affecting their learning satisfaction. The study utilizes a sample of 39 second-year undergraduate translation students from the "6B02301 — Translation Studies" program at the Buketov Karaganda National Research University. The course assignments included AI-based projects such as designing a "country of your dreams," talking avatars, podcasts, multilingual stories, and 3-2-1 summaries via WhatsApp, as well as using digital dictionaries and visual services such as Canva, Padlet, etc. The last survey, consisting of both scaled and open-ended questions, helped us figure out which topics and activity formats students think are most important for developing intercultural competence and collective intelligence; which teaching methods are linked to high ratings for the course and teacher; and how the experience of taking part in such projects can be used to create a divergent learning space. The results showed that most students were quite happy with the course and also asked for more innovative, AI-supported projects and a better mix between solo and group work.

Keywords: artificial intelligence; collective intelligence; intercultural communication; translation students; collaborative projects; divergent educational space; learning satisfaction; creative tasks; student perception.

Introduction

Artificial intelligence (AI) has been rapidly integrated into various spheres of higher education, including translator training, thereby challenging traditional pedagogical paradigms and demanding a rethinking of how educators design learning experiences that balance technological innovation with humanistic competencies [1-2]. It is not a secret that intercultural competence development and creative problem-solving are as necessary for future translators as linguistic proficiency due to machine translation systems' latest achievements in terms of unprecedented accuracy, which started questioning the role and value of human translators [3]. It became clear that future translators' competitiveness is possible by shifting from linguistic conversion toward cultural mediation through educational approaches that develop divergent thinking, intercultural awareness, and collaborative intelligence alongside technical skills [4-5].

"The "Digital Kazakhstan" program [6] and the Concept for the Development of Higher Education and Science (2023-2029) [7] justify the above-mentioned demand since they both call for a paradigm shift from convergent, standardized learning models toward divergent educational spaces that integrate artificial and collective intelligence to develop global competencies. However, despite policy-level recognition of AI's potential, empirical research on how students experience and engage with AI-mediated collaborative projects in language education remains limited in non-Western contexts, particularly situated within Kazakhstan's multilingualism, which highlights this study as highly timely and relevant.

To address this gap, we conducted an exploratory investigation of second-year translation students' experiences in an intercultural communication course that integrated multiple AI-enhanced collaborative projects—including talking avatars (Padlet), visual design platforms (Canva), podcasts, and group simulations (e.g., the "creating a dream country" project). The aim of the study is to examine (1) which collaborative AI-mediated projects students perceive as most engaging for developing intercultural competence, (2) what pedagogical factors predict high learning satisfaction, and (3) how findings can inform the design of divergent educational spaces in translator education.

Generative AI tools such as ChatGPT, virtual avatars, etc. have demonstrated the capacity to personalize learning, automate administrative tasks, and facilitate real-time feedback in educational settings [8-9]. Nevertheless, some substantive pedagogical concerns diminish this technological optimism. Overreliance on AI, which may erode critical thinking, diminish creative autonomy, and perpetuate algorithmic biases [10]. All of these are highly undesirable in translation education, where cultural nuance and contextual sensitivity are paramount. Furthermore, the "black-box" nature of many AI models raises transparency issues, complicating educators' ability to assess their pedagogical validity [11].

Collective intelligence is another notion, which is worth considering in light of future translators' preparation since it includes the capacity of groups to solve problems and generate knowledge through coordinated interaction [12]. In language learning contexts, collaborative projects enhance not only linguistic proficiency but also intercultural awareness, negotiation skills, and epistemic agency by enabling students to navigate cultural differences, co-construct meaning, and develop plurilingual competencies through authentic communication [13]. Nonetheless, there might occur some complexities. Recent studies report mixed experiences by students: while some of them appreciate AI's capacity to scaffold complex tasks and reduce cognitive load, others express concerns about equitable contribution, dependency on technology, and erosion of interpersonal communication [14]. For modern translator education, teamwork is one of the essential professional practices because one of the contemporary trends, for instance, localization, involves the AI-mediated collaboration of project managers, translators, and AI post-editors, so we need to understand how students perceive the necessity of working as a team [15].

The concept of a divergent educational space is also of utmost importance for translator education because such a profession itself demands adaptability across genres, domains, technologies, and cultural contexts. Contrasting sharply with convergent models that prioritize standardized outcomes and uniform instruction, divergent approaches emphasize knowledge creation over transmission and recognize learners as active co-constructors of their educational experiences [16]. However, it is more than curricular variety that is needed to design divergent spaces. Understanding student preferences, engagement patterns, and satisfaction drivers is what is necessary to undertake by applying predictive analytics with its statistical models to identify factors associated with learning outcomes, offering a data-driven approach to pedagogical optimization.

In all, despite the growing body of literature on AI in higher education, we managed to identify three critical gaps that laid the foundation for our study: (1) a lack of empirical studies on AI-mediated collaborative projects in translator education focusing on pedagogical processes instead of machine translation evaluation; (2) underrepresentation of studies on non-Western students' perceptions on organizing divergent educational spaces within one or another discipline; (3) scarcity of studies where predictive models are linked specifically to student satisfaction.

Methods and Materials

To investigate translation students' perceptions of collaborative AI-mediated projects in intercultural communication education and to identify predictors of learning satisfaction, we employed a mixed-methods exploratory design. For this, we combined quantitative survey analysis and qualitative content analysis of open-ended responses, as J. Long and J. Lin did when examining relationships between instructional design, technology use, and learner outcomes in 2022 [17].

The study itself was conducted at Buketov Karaganda National Research University in the Republic of Kazakhstan within the course "Theory and Practice of Intercultural Communication" for second-year Translation Studies majors as a core component of the bachelor's program, combining theoretical input on intercultural communication with a sequence of AI-mediated collaborative projects designed to foster intercultural competence, divergent thinking, and collective intelligence.

While completing the course in the 2024–2025 academic year throughout the 15‑week semester, the study participants, or 2nd-year translation students (n=39) from three academic groups (REI‑24‑1, REI‑24‑2, REIacc‑24‑1) (Table 1), worked in small groups on tasks that integrated AI and Web 2.0 platforms, including Padlet, Canva, podcasting tools, mobile messengers, and online dictionaries.

Table 1

Participant profile

Variable		Description	
Educational programme		BA in Translation Studies	
Year of study		2nd year	
Institution		Buketov KarNRU	
Number of groups		3	
N (total)	REI-24-1	39 Ss	13 Ss
	REI-24-2		12 Ss
	REIacc-24-1		14 Ss

Here, we need to mention that AI-mediated tasks were not entirely novel for the students who participated in the research due to the fact that these students already had prior experience with digital tools thanks to blended learning practices adopted under national digitalization initiatives. Table 2 contains key collaborative AI-mediated projects in the course.

Table 2

Key collaborative AI-mediated projects

Project type	Tools and format	Intercultural / collaborative focus
"Creating a country of your dream" simulation	Canva, Padlet, Suno.ai. and other AI-enhanced visual materials	A fictional multicultural state design
Talking avatar tasks	D-ID; Voki Avatar	Creating AI-supported avatars for intercultural scenarios' role-playing
A multilingual short story project	Online dictionaries (Google Translate, DeepL Translate, Context Reverso, etc.)	Group writing across languages (English, German, Spaning, and French)
3-2-1 summaries	WhatsApp group chats	A form of collective reflection and knowledge sharing
Podcast creation	Audio recording + AI-supported editing tools	Discussions of historical and cultural heritage of Central Kazakhstan
Quizlet and QR-linked video tasks	Vocabulary app, video platforms with QR access	Shared exploration of cultural concepts and terminology

To collect the data, we designed an end-of-course survey, whose overall structure (Likert-scale items on teaching practices and learning experience, global 50–100 ratings of the course and teacher, plus open-ended questions) is standard for capturing both quantitative trends and nuanced perceptions [18]. First, a 5-point Likert scale was employed to assess agreement with statements about instructional support, perceived usefulness of AI-mediated activities, and opportunities for deeper learning. Second, the content of the questionnaire was informed by three sources: (1) items on teaching presence (stimulating interest, encouraging discussion, being accessible, reminding about deadlines); (2) items on AI-mediated activities and learning opportunities (e.g., whether WhatsApp summaries, individual feedback, and creative AI-supported projects helped); and (3) open-ended prompts asking students to name the most and least engaging activities, suggest improvements, and address the teacher directly. Such a strategy was motivated by evidence that free-text feedback can provide richer, actionable insights than Likert data alone, especially in studies of intelligent learning environments [18].

The questionnaire comprised six sections: (1) topic preferences (most and least interesting course themes, such as Identity, Culture and Communication, Intercultural Communication and Business, Intercultural Transitions); (2) activity preferences (open-ended naming of most and least enjoyable activities, including AI-mediated collaborative projects like avatars, podcasts, Canva tasks, and group simulations); (3) perceptions of pedagogical practices (Likert-scale items on the extent to which the teacher stimulated interest, encouraged discussion, was accessible outside class, reminded about deadlines, and provided difficult or creative tasks); (4) perceived learning opportunities (items on whether specific practices—WhatsApp summaries, individual feedback, AI-enhanced tasks—helped explore ideas in depth, connect topics, and apply learning); (5) self-assessment and satisfaction (50–100 ratings of own work, the course, and the teacher, and perceived relevance of the course for future life and work); and (6) open-ended comments (addressing the teacher, suggesting improvements, and describing preferred communication channels). In all, the survey supported a mixed-methods analytical strategy and was administered immediately after course completion, maximizing ecological validity and reducing recall bias [19].

Pearson correlation coefficients were computed between such pedagogical variables as perceived stimulation of interest, encouragement of discussion, provision of creative tasks, usefulness of specific AI-mediated activities, and outcome indicators such as self-assessment, course rating, teacher rating, perceived future relevance, to identify significant associations, following similar approaches in studies of satisfaction in technology-enhanced learning [20].

In parallel, open-ended responses were analyzed thematically by two researchers, who independently coded comments related to benefits and challenges of AI-mediated collaboration, preferences for task types, and suggestions for improvement; codes were then refined into broader themes (e.g., desire for more creative tasks, tensions in group work, appreciation of AI tools, importance of teacher support) through discussion until consensus was reached. The qualitative themes were used to interpret and enrich the quantitative findings and to derive design principles for constructing a divergent educational space that meaningfully integrates artificial and collective intelligence in intercultural communication education [8; 25–26].

The study complied with institutional and national ethical standards for educational research. Students were informed about the aims of the study, the voluntary nature of participation, and the anonymity of responses, and gave informed consent before completing the survey. No personally identifying information beyond optional group codes was collected, and all digital data were stored on password-protected devices accessible only to the research team. This ethical framework is consistent with current recommendations for responsible use of student data in AI- and analytics-enhanced higher education [8; 26].

Results and Discussion

In terms of student perceptions of topics and AI-mediated projects, we present Table 3, which summarizes students' preferences regarding the thematic blocks of the course.

Table 3

Summary of student perceptions of topics and AI-mediated projects

Topic	Most interesting		Least interesting		Trend
	n	%	n	%	
Identity	13	33.3 %	6	15.4 %	Frequently mentioned
Culture and Communication	10	25.6 %	2	5.1 %	Occasionally mentioned
Verbal Issues	5	12.8 %	4	10.3 %	Sometimes mentioned
Studying Intercultural Communication	4	10.3 %	2	5.1 %	Sometimes mentioned
Nonverbal Issues	3	7.7 %	3	7.7 %	Sometimes mentioned
Intercultural Communication and Business	3	7.7 %	11	28.2 %	Sometimes mentioned
Intercultural Communication and Education	1	2.6 %	5	12.8 %	Rarely mentioned
Intercultural Transitions	1	2.6 %	6	15.4 %	Rarely mentioned

As we can see from Table 3, *Identity* and *Culture and Communication* emerged as the most engaging topics, together accounting for more than half of all "most interesting" choices, whereas more specialized or applied themes (e.g., business, education, transitions) were more often selected as least interesting. The students' strong interest in the issues of Identity and *Culture and Communication* suggests that they see the course as a place to think about their own and other cultures, not only as a way to get a job in a certain field such as business, teaching, etc., thereby being in line with how translation is taught today, where the translator is seen as a cultural mediator whose knowledge of their own and others' identities is an important skill [3].

At the level of specific activities, students clearly pointed out creative and AI-based initiatives, where the most often cited of whcih, based on how often they came up in open-ended responses, are gathered in Table 4.

Table 4

Most frequently mentioned activities in students' open-ended responses

Activity type	Examples from survey form	n; %	Rate
"Creating a country of your dream" simulation	Group design of a fictional multicultural state	n=20; 51.3 %	Highly popular
Co-cultural communication individual Canva activity	Visual representations of Orbe's co-cultural theory	n=15; 38.5 %	Popular
Talking avatars	Making a talking avatar from personal images on Padlet	n=13; 33.3 %	Moderately popular
3-2-1 WhatsApp summaries	Reflection and consolidation in group chat	n=12; 30.8 %	Moderately popular
Key words on Quizlet	Learning active vocabulary on Quizlet	n=12; 30.8 %	Moderately popular
Case study work	Case study analyzing / development	n=8; 20.5 %	Somewhat popuar
Podcasts	Creating podcasts as creative output	n=7; 17.9 %	Somewhat popuar
QR-based videos watching	Watching additional videos by scanning	n=5; 12.8 %	Less popular

In terms of the second research question on which pedagogical factors predict high learning satisfaction of AI-enhanced intercultural communication course participants, we initially considered students' global rating of their work, the course, and the teacher's assistance and instructions. Overall, the cohort reported very high satisfaction levels (Table 5).

Table 5

Overall satisfaction (50–100 scales)

Measure	Mean score
Students' self-assessment of their performance	87.9 / 100
Course rating	95.2 / 100
Teacher rating	97.5 / 100

As we can see from Table 5, the students were happy enough with both the course and the teacher's work and attitude. Mean ratings from the Table 5 are broadly consistent with recent studies, whose findings demonstrated high satisfaction scores for well-scaffolded AI-supported environments [21].

After that, we related this to their perceptions of specific teaching practices and AI-mediated activities (Table 6).

Table 6

Mean ratings of pedagogical practices (1–5 scale)

"The teacher should…" items	Mean
Encourage discussions and respond to questions	3.81
Stimulate interest in the subject	3.76
Give difficult and / or creative tasks	3.54
Remind about deadlines	3.28
Be accessible outside of class	3.22

Here, Likert-scale items on teaching presence revealed a more nuanced picture: students particularly appreciated the teacher's role in stimulating interest and encouraging discussion, while being slightly more critical about accessibility outside class and deadline reminders, which echoes findings that satisfaction in technology-rich settings depends not only on the presence of digital tools but also on how actively the teacher orchestrates interaction and supports students in managing workload [22].

Regarding the third research question on how student perceptions can and predictive patterns inform the design of a divergent educational space, we identified and grouped some indicators that reflected: (1) student's attitude toward creative and AI-based tasks; (2) perception of collective tasks; (3) experiencing opportunities for deep learning and knowledge application; (4) perception of the teacher's support; (5) assessment of the course's future usefulness. These indicators are gathered in Table 7.

Table 7

Target indicators related to divergent educational space and satisfaction

Indicator group	Paraphrased excerpt from Survey	Observed pattern
Creative AI-based tasks	"I really enjoy creative assignments (Country-of-my-dream design / avatars / Canva slides / podcasts)"	A lot of open responses mention it; it's more common among students who give the course a rating of 95 or higher.
Learning depth and application perception	"Tasks helped me put what I learned into practice and put it all together."	Students who had high overall course grades were more likely to agree (4–5).
Collaboration with peers experience	"I enjoyed working with other students and felt included in the class community." / "It is interesting and hard to work with others." / "I think it is not necessary, if you dont want to communicate."	A mix of good significance ratings and comments concerning too much work or uneven involvement.
Teacher's support and facilitation	"The teacher stimulated interest / encouraged discussions / provided feedback."	The total rating of the course and the teacher goes up as the scores on these points go up.
Future relevance and professional usefulness of the course	"This course will help me in my future life and work."	Students who chose 4–5 are more likely to give the course and teacher a score of 95–100.

The summary of the study findings from Table 7 indicates the positive correlation between the elevated evaluations for factors such as sparking interest, fostering conversations, and viewing creative work as de-

velopmental and higher overall course and teacher ratings, which is in line with some recent studies proven that, but the combination of well-thought-out assignment design and pedagogical support is exactly what give students a sense of purpose and fulfillment [22]. At the same time, our findings are in tune with research that shows students have mixed feelings about working together in digital settings [13]: on the one hand, our students said that the most popular activity, "creating a country of your dreams", was the most important part of the course, whereas, on the other hand, open responses often talked about problems with uneven contributions within groups, the difficulty of organizing group work outside of the schedule, and fatigue from the many different group formats. Also, the fact that students are generally happy with the course even though they only got average (but not perfect) grades on creative assignments and the teacher availability shows that there is room for growth: to make the course space more diverse without losing the necessary convergent core (clear requirements, assessment, and standards), identity-oriented and AI-supported creative projects should be made stronger, along with clear communication about deadlines and roles.

Conclusions

Our study allowed us to conclude that translation students perceive AI-assisted collaborative projects in intercultural communication not as a peripheral add-on but as a meaningful part of their professional preparation by demonstrating strong interest in identity- and culture-oriented topics, combined with their clear preference for creative, digitally supported tasks, thereby indicating that they expect the course to be a space for exploring who they are as future intercultural mediators rather than merely a source of instrumental skills.

At the same time, our findings provide a more balanced perspective on the use of AI in higher education by highlighting how our students valued digital tools for their potential in projects like country simulations, avatar-based role plays, visual mapping, and podcasts, rather than merely for automating language-related tasks. Satisfaction predictors' analysis underscores that technology alone does not explain high student satisfaction, but the interplay of creative variety, perceived relevance, and facilitative teaching appears to underpin positive experiences in the AI-rich intercultural communication course.

Regarding the concept of a divergent educational space, our study proves that divergence emerges not only through an expanded thematic spectrum but also through differentiated task formats and participation modes, allowing students to move between individual and collective pathways while working with AI and digital tools.

Finally, the study contributes to the still limited body of empirical work on AI-mediated collaborative learning in non-Western translator education contexts and, hopefully, brings in student voices from a multilingual Kazakhstani setting to complement existing research dominated by Western and East Asian cases by demonstrating that global discussions on AI, collective intelligence, and divergent pedagogy can and should be informed by diverse educational realities. Future work could build on these findings by implementing experimental or longitudinal designs to trace how participation in AI-mediated projects shapes intercultural competence and professional identity over time, as well as by comparing different institutional and cultural settings to refine the design principles of divergent educational spaces in translator education.

Acknowledgements

The study was carried out under the auspices of the international initiative titled: "Realization of Immersive Foreign-language Educational Environment in the Conditions of Digital Transformation of Higher Education Institution: Analysis of availability, Design, Application".

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Мәдениетаралық білім берудегі ЖИ негізіндегі бірлескен жобалар: студенттердің қабылдауы және оқуға қанағаттануға әсер ететін факторлар

Мақалада аудармашы студенттердің «Мәдениетаралық қарым-қатынастың теориясы мен практикасы» курсында жасанды интеллекті қолдана отырып, бірлескен жобаларды қабылдауы талданды және оқуға қанағаттануына әсер ететін факторлар анықталды. Зерттеуді жүзеге асыру үшін академик Е.А. Бөкетов атындағы Қарағанды ұлттық зерттеу университетінің 6В02301 «Аударма ісі» білім беру бағдарламасы бойынша бакалавриаттың екінші курсынан 39 аудармашы студенттердің сұрыптау үлгісінде аралас дизайн әдісі таңдалды. Курс «Арман елін» модельдеу, сөйлейтін аватарлар, подкасттар, көп тілді әңгімелер жасау, сондай-ақ WhatsApp-та 3-2-1 саммари жасау, сандық сөздіктермен және визуалды сервистермен жұмыс істеу сияқты ЖИ-делдалдық тапсырмаларды біріктірді. Соңғы сауалнама шкалалық пен ашық сұрақтарды қамтыды және студенттердің мәдениетаралық құзыреттілікті дамыту үшін қандай тақырыптар мен форматтарды ең маңызды деп санайтынын, қандай педагогикалық тәжірибелер курс пен оқытушының жоғары бағаларымен байланысты екенін және мұндай жобаларға қатысу тәжірибесін дивергентті білім беру кеңістігін жобалау үшін қалай пайдалануға болатынын анықтауға мүмкіндік берді. Нәтижелер шығармашылық, жасанды интеллект қолдайтын тапсырмалар спектрін одан әрі кеңейтуге, жеке және топтық жұмыстың икемді тепе-теңдігіне сұрау сала отырып, курсқа жоғары жалпы қанағаттанушылықты көрсетті.

Кілт сөздер: жасанды интеллект (ЖИ), ұжымдық интеллект, мәдениетаралық қарым-қатынас, аудармашы студенттер, бірлескен жобалар, дивергентті білім беру ортасы, оқуға қанағаттану, шығармашылық тапсырмалар, студенттердің қабылдауы.

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Совместные проекты на основе ИИ в области межкультурного образования: восприятие студентов и факторы, влияющие на удовлетворенность обучением

В данной статье анализируется восприятие студентами-переводчиками совместных проектов с использованием искусственного интеллекта в курсе «Теория и практика межкультурной коммуникации» и выявляются факторы, влияющие на удовлетворённость обучением. Для реализации исследования был выбран формат смешанного дизайна на выборке из 39 студентов-переводчиков второго курса бакалавриата по образовательной программе «6В02301 — Переводческое дело» Карагандинского национального исследовательского университета имени академика Е. А. Букетова. В рамках курса были интегрированы такие ИИ-опосредованные задания, как симуляция «страны мечты», создание говорящих аватаров, подкастов, мультиязычных историй, а также 3‑2‑1‑саммари в WhatsApp и работа с цифровыми словарями и визуальными сервисами. Конечный опрос включал шкальные и открытые вопросы и позволил выявить, какие темы и форматы деятельности студенты считают наиболее значимыми для развития межкультурной компетентности, какие педагогические практики связаны с высокими оценками курса и преподавателя и как опыт участия в таких проектах может быть использован для проектирования дивергентного образовательного пространства. Результаты показали высокую общую удовлетворённость курсом при одновременном запросе на дальнейшее расширение спектра творческих заданий на основе ИИ и более гибкий баланс индивидуальной и групповой работы.

Ключевые слова: искусственный интеллект (ИИ); коллективный интеллект; межкультурная коммуникация; студенты-переводчики; совместные проекты; дивергентное образовательное пространство; удовлетворённость обучением; креативные задания; студенческое восприятие.

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