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Formation of Communicative-Ethnopedagogical Competence of Future Teachers in the Multiethnic Environment of a Modern University

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ABSTRACT: *This study aimed to investigate the impact of ethnopedagogical teaching methods on the development of intercultural competencies among students of pedagogical faculties. The sample consisted of 298 first- and second-year students from the pedagogical faculties of polyethnic universities in Kazakhstan. An ethnopedagogical method-based teaching program was conducted for the experimental group, while the control group followed traditional teaching methods. The results indicated that in the experimental group, the frequency of interaction with representatives of language minorities increased, confidence in communication rose, and the difficulty in understanding foreign speech decreased. Thus, the study confirmed the effectiveness of ethnopedagogical methods in enhancing ethnopedagogical skills. The findings can be used in the development of educational programs for training teachers to work in multicultural educational institutions. The implementation of ethnopedagogical approaches contributes to the formation of tolerance, flexibility, and readiness for intercultural interaction among future educators, which is especially relevant in contemporary multilingual education.*

Keywords: ethnopedagogical awareness, intercultural interaction, learning stress, multilingualism, representatives of language minorities

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INTRODUCTION

Contemporary societies are becoming increasingly diverse in cultural and linguistic terms, presenting new opportunities and significant challenges for educational systems. A key factor in improving the quality of education is enhancing specific pedagogical skills among teachers (Zhou, 2021). Teachers report that their classrooms are becoming more linguistically and culturally diverse due to a combination of transnational migration and growing government and parental attention to supporting proficiency in one or more foreign languages (Tang & Calafato, 2021).

Linguistic diversity in education offers both benefits and challenges. Multilingualism plays a crucial role in language education, yet most research has focused on English teaching in European contexts (Calafato, 2019). As a result, the teaching of other languages outside Europe and the role of multilingualism in these settings remain underexplored, revealing a significant gap in understanding how educators navigate linguistic diversity and enhance teaching effectiveness.

Multilingual proficiency enhances cognitive and intercultural skills, aiding global adaptation (Tang & Calafato, 2021). However, language barriers can hinder learning, especially when teachers lack multicultural experience. Teaching effectiveness depends significantly on teachers' attitudes toward multilingualism, their language skills, and their personal language-learning experiences (Wang, 2019). Monolingual teachers often struggle in multilingual settings, whereas bilingual and multilingual teachers use more adaptable strategies. Dutch research highlights that effective secondary education involves real-world tasks aligned with student interests, with teachers serving as facilitators (Schutte et al., 2025).

Teaching in a multicultural environment requires not only linguistic competence but also intercultural competence (Agrawal & McNair, 2021). Developing communicative and ethnopedagogical skills is essential in teacher education, involving cultural awareness, intercultural competence, and the use of pedagogical methods that reflect students' ethnocultural backgrounds. Research shows that these skills improve educational quality and support social cohesion in multiethnic societies (Temirgalinova et al., 2021). In post-Soviet contexts such as Kazakhstan—home to over 130 ethnic groups—multilingualism and cultural diversity require adaptations to teacher training programs (Okasova, 2021). It is important to deeply understand intercultural competence through the prism of past

experiences, current problems, and future needs, which will allow for more relevant educational approaches (Tavares, 2025).

Despite the implementation of ethnopedagogical methods, the level of intercultural preparation for future teachers remains insufficient. Kazakhstan is undergoing a linguistic shift as colonial legacies give way to globalization, thereby increasing the role of the English language in education and professional life (Jarlhøj & Valijärvi, 2024). Government policy supports trilingual education (Kazakh, Russian, English), but this leads to a diminishing role for native languages and poses risks to national linguistic identity. Therefore, studying the formation of communicative and ethnopedagogical skills among future educators is relevant both for Kazakhstan and in a global context. The theoretical novelty of the study lies in the scientific substantiation of the effectiveness of ethnopedagogical methods as a tool for the formation of key professional competencies of future teachers in a multicultural and multilingual educational environment. The international significance of the study goes beyond Kazakhstan, as it confirms the universality of ethnopedagogical approaches for training teachers to work in a globalized world. The findings can be used in countries with a high level of cultural and linguistic diversity to improve pedagogical education and ensure sustainable interethnic dialog in the education system. This will improve the quality of education and strengthen interethnic relations, contributing to the creation of an inclusive educational environment.

Literature Review

Globalization and migration are increasing the polyethnicity of societies, making intercultural communication and ethnopedagogy critical to higher education. In such conditions, future teachers need to develop specialized skills that combine traditional pedagogical approaches to interethnic interaction. In this context, it is important to apply Bayram's model of intercultural competence, which structurally encompasses the knowledge, skills, and attitudes necessary for effective communication in a multicultural environment (Khan et al., 2023).

Students' behavioral characteristics in multilingual education depend on their cultural and linguistic experiences. A study in the United States demonstrated that different ethnic groups (Latinos, African Americans, Asians, etc.) in middle and high school perceive their schools as culturally sensitive environments, which is directly linked to their academic motivation and to stronger relationships between students and teachers (Boat et al., 2025). Authors from China argue that teacher preparation should include developing communicative and ethnopedagogical competencies that support effective intercultural interaction and the use of ethnocultural characteristics in the educational process (Yuan & Tian, 2022). The use of Vygotsky's sociocultural theory allows us to interpret these processes through the prism of the role of social interaction and cultural context in the formation of knowledge and skills (Alkhudiry, 2022).

Teachers with ethnopedagogical competencies are able to integrate elements of different cultures into the educational process, which helps strengthen students' identities and enrich their educational experience. However, school leadership

requires clear guidelines for implementing systems that support the development of sociocultural competence, as concluded by authors from Central America (Feinauer et al., 2025). In this context, the concept of culturally relevant pedagogy is appropriate, which aims to take into account the cultural background of students to increase their motivation and academic performance (Howard, 2021).

One of the main gaps in research remains the limited sample size when studying teachers' views on multilingualism. In Norway, research has focused on English and includes a small number of participants (Calafato, 2019). In Nigeria, students choose English due to the influence of parents/peers/teachers, religion, and personal factors, noting the low significance of their native language and better career prospects with English (Uwen & Okafor, 2025). Kazakhstan's linguistic landscape is complex: during the Soviet era, Russia dominated, and after independence, the promotion of Kazakh faced political, educational, and cultural obstacles (Jarlhøj & Valijärvi, 2024). Teacher overload and a lack of individualized approaches negatively impact the education of 5th graders, highlighting the need for online resources and support (Hajar & Manan, 2022). Consequently, challenges in intercultural interaction and multilingual education persist, including methodological barriers, a gap between theory and practice, and the necessity to adapt teacher training.

Multilingual Awareness and Learning Strategies

Multilingual awareness is crucial for intercultural competence, as it helps to better understand the relationship between language and culture (Eren, 2022). However, its implementation faces local barriers. In Italy, migrants experience difficulties in perceiving time and hospitality (Harney, 2020). Additionally, national integration policies often diverge from real-world practices.

Metacognitive strategies assist students in consciously developing learning approaches, such as through language diaries and performance journals (Branigan & Donaldson, 2019). Autonomous study of materials enhances learning effectiveness (Borg & Alshumaimeri, 2019). In China and the United States, a high level of self-regulation improves academic performance (Guo et al., 2018; Hromalik & Koszalka, 2018), while low levels reduce motivation, as argued by an author from Norway (Calafato, 2020). In the UAE, interest in the Arabic language is declining compared to English (Calafato & Tang, 2019).

Metalinguistic awareness contributes to literacy, particularly through interlinguistic strategies (Eviatar et al., 2018; Rutgers & Evans, 2017). Mastery of these strategies requires teacher training, including the study of morphosyntactic foundations (Tang & Calafato, 2021). In western China, 12 surveyed teachers acknowledge the benefits of using minority languages in teaching yet maintain a deficit mindset regarding their role in teaching Chinese (Liu, 2025). This once again confirms the importance of using a sociocultural approach to the formation of pedagogical competence, with a focus on the cultural context.

Methods Used in the Educational Process in a Polyethnic Environment

In a multiethnic educational environment, methods of student adaptation and integration are applied, including game-based and language approaches. Nigerian authors have developed a vocabulary game adapted to local languages, which improved the acquisition of native and second indigenous languages in colleges and schools (Okon, 2023). In Indonesia, cultural and ethical gamification has proven to be more effective than traditional teaching in developing tolerance among multiethnic students (Fawaid et al., 2024). The use of such methods is consistent with culturally relevant pedagogy, which promotes an inclusive environment by taking into account the cultural background of students.

Experimental programs include the study of the most commonly spoken languages at universities, helping students feel more comfortable in a multilingual environment (Godwin-Jones, 2021; Rashov, 2024). The integration of languages into everyday activities, academic groups, and student initiatives facilitates their natural acquisition. For example, in Virginia, USA, music in classes reduces anxiety and facilitates language learning, while songs reduce academic pressure and stimulate cognitive perception (Godwin-Jones, 2021). In Uzbekistan, language integration through cultural festivals, artistic events, and discussion clubs preserves knowledge and develops skills in informal settings (Rashov, 2024). Thus, the use of intercultural models of competence allows us to systematically analyze these approaches and more effectively form pedagogical tools in a multicultural environment.

Problem Statement

The contemporary polyethnic educational environment imposes specific requirements on the training of educators capable of effectively interacting with students from various cultural and linguistic groups. Therefore, there is a need to test new methodologies aimed at integrating ethnocultural and linguistic factors into the educational process. This study aims to develop and justify a methodological approach that facilitates the formation of communicative-ethnopedagogical competence in future educators within the context of a polyethnic university.

Research objectives:

1. To identify differences in the level of ethnopedagogical competencies among students in Kazakhstan, their confidence in intercultural communication, and their adaptation to a multilingual educational environment.
2. To analyze the impact of ethnopedagogical approaches on reducing stress levels in Kazakh students when interacting with representatives of other cultures and linguistic minorities.
3. To determine the most effective teaching methods in a multicultural environment.
4. To identify the main difficulties in intercultural communication.

METHODS AND MATERIALS

The study used a quasi-experimental approach, combining student surveys and observations. This method suited the research goals, which focused on developing communicative and ethnopedagogical skills in future teachers within a polyethnic educational setting. Surveys collected both quantitative and qualitative data on students’ perceptions of the educational process, learning-related stress, and future teachers’ understanding of ethnocultural characteristics.

Participants

The study involved 298 first- and second-year students from the pedagogical faculties of Atyrau University and Western Kazakhstan University. Participants, future teachers of Russian, Kazakh, and foreign languages (including English and German), came from diverse ethnocultural backgrounds, creating a multicultural environment. The average age was 21, with 160 women and 138 men. Details are provided in Table 1.

Table 1: Information about Study Participants

University	No. of Participants	Course	Majors	Men	Women	Average Age	Percentage of Men	Percentage of Women
Kh. Dosmukhamedov Atyrau University	74	1st year	Russian Language and Literature, Foreign Languages	17	19	20.4	47%	53%
	75	2nd year	Kazakh Language and Literature	16	22	21.2	42%	58%
M. Utemisov West Kazakhstan University	74	1st year	Foreign Languages	18	20	20.3	47%	53%
	75	2nd year	Russian Language and Literature, Kazakh Language and Literature	15	21	21.1	42%	58%
Total Number	298	1, 2	-	66	82	-	45%	55%

Source: developed by the author

Participants were divided into two equal groups: an experimental group trained with a methodology focused on communicative and ethnopedagogical skills and a control group trained using traditional methods without ethnocultural considerations. Students were selected because these skills are relevant to their future careers. Recruitment was conducted through newsletters, university announcements, invitations from professors, and an informational seminar. The inclusion criteria were 1st- and 2nd-year pedagogical students; senior students or those lacking experience in a polyethnic environment were excluded.

Research Instruments

The study employed a questionnaire to assess students' levels of communicative and ethnopedagogical competence. The questionnaire consisted of three sections:

Section 1: Included 10 closed-ended questions utilizing a Likert scale administered to students in both groups to evaluate the impact of ethnopedagogical skills on communication with linguistic minorities.

Section 2 comprised seven questions measuring the influence of ethnopedagogical skills on stress levels and the ability to overcome language barriers.

Section 3: Six open-ended questions were designed to collect more detailed responses from students in the experimental group and to examine the program's impact on the development of ethnopedagogical skills.

The questionnaire is provided in Appendix A. It demonstrated excellent internal consistency, with Cronbach's alpha values of 0.89 for Section 1, 0.82 for Section 2, and 0.85 for Section 3. Furthermore, the questionnaire exhibited strong convergent validity, as evidenced by high correlations between individual items and the overall questionnaire scores ($r = 0.87\text{--}0.88$).

Procedure

An initial questionnaire survey was conducted to assess the baseline level of ethnopedagogical and communicative skills among students in both groups. The testing procedure was standardized: all participants completed the questionnaire in person at the same time in designated classrooms, ensuring equal conditions and eliminating external influences. The process was supervised by instructors, who explained the purpose of the assessment and ensured that all students completed the questionnaire independently. The completion time for the questionnaire was approximately 20–25 minutes.

The final assessment was administered three months after the beginning of the training, following the completion of all theoretical and practical courses. The final test was identical to the initial test, except that an additional third section was included in the questionnaire for the experimental group. The same instructors who conducted the initial assessment supervised the final examination to maintain consistency in the research process.

The experiment lasted four months, with three months allocated to training and one month dedicated to data collection and analysis. The training approaches differed between the control and experimental groups.

Control Group: Students followed the standard curriculum, which did not incorporate ethnopedagogical methods. The training did not include the use of multimedia applications or specialized instruction in developing ethnopedagogical skills. **Experimental Group:** Students participated in a program designed to enhance ethnopedagogical and communicative skills in a multicultural and multilingual educational environment. This program included theoretical lectures, case study analysis, cross-cultural training, and practical exercises. Training in the experimental group was integrated into existing disciplines and supplemented with additional sessions. Students attended extra lectures and practical classes, totaling four academic hours per week.

During the training process, students acquired methods for overcoming language barriers, improving intercultural communication, and applying ethnopedagogical approaches in their future teaching practice. The training programs for both groups are detailed in Appendix B.

During the training, the experimental group used various applications and multimedia tools to enhance understanding and develop communicative skills. These included:

1. Language learning apps such as Duolingo, Memrise, and Babbel improve conversational skills and basic multilingual communication.
2. Case study analysis through platforms such as Google Classroom, allowing collaborative problem-solving of linguistic and cultural challenges.
3. Interactive lessons and video lectures from YouTube and TED Talks to demonstrate key intercultural communication theories with real-life examples.
4. Group discussions and role playing via Zoom to build communicative competence and teamwork in multicultural settings.

Data Collection

The data collection involved several stages, mainly pretest and posttest assessments. The pretest aimed to evaluate the sample's homogeneity regarding students' prior knowledge of ethnopedagogical and communicative skills and their initial academic performance in a multilingual environment. A questionnaire (Appendix A, Blocks 1-2), prepared and approved by the research team, was used for this purpose. After testing, the questionnaires were collected and analyzed to determine the baseline level of students' ethnopedagogical competence.

The posttest was conducted three months after the program began, following the completion of all educational activities. It was similar to the pretest, allowing for an objective evaluation of skill changes. The final questionnaire contained the same questions as the initial questionnaire, with an additional Block 3 for the experimental group. The posttest was also conducted under similar conditions to

the pretest. After the data collection was completed, questionnaires were administered to assess the educational program's effectiveness and test the hypothesis regarding the improvement of communicative and ethnopedagogical skills in the experimental group compared to the control group.

Open-ended questionnaire responses were collected during class sessions, giving participants sufficient time for detailed answers. These questions aimed to gather qualitative insights into students' experiences and perceptions of interactions with diverse ethnic and linguistic groups, as well as their views on key ethnopedagogical competencies. After collection, all responses were compiled electronically and analyzed using content analysis to identify main themes and trends.

Data Analysis

Data were analyzed using IBM SPSS Statistics (version 28), chosen for its efficiency and usability. Descriptive statistics and independent samples t tests were applied to Likert-scale questionnaire responses to identify initial differences between the experimental and control groups. A paired-sample t test was then used to measure changes in ethnopedagogical competence within each group after the intervention, enabling an objective evaluation of the program's effectiveness in developing communicative skills in a multiethnic context.

Responses to open-ended questions from the experimental group were compiled, standardized, and analyzed thematically. Coding focused on recurring themes: effective teaching methods, communication challenges with other cultures, the role of intercultural communication in professional growth, improvements needed in multicultural education, and essential ethnopedagogical competencies. Thematic analysis identified common phrases and ideas, enabling a qualitative summary of students' perspectives. The analysis highlighted key challenges, teaching preferences, and the competencies needed for effective work in multicultural classrooms, offering insight into how future educators perceive and experience ethnopedagogical training.

Ethical Issues

Participants were informed about the study's purpose, procedures, and potential impacts and gave informed consent, with the option to withdraw at any time without affecting their education. Confidentiality was strictly maintained: personal data were not published and were used only in aggregated statistical form. The results were presented anonymously, and data were kept secure with access limited to the research team. The study respected participants' cultural, religious, and social characteristics throughout.

Research Limitations

The study's sample was limited to pedagogical students from polyethnic universities in Kazakhstan, restricting the generalizability of the findings to other

student populations and countries. Variations in language complexity may affect the development of communicative and ethnopedagogical skills differently, limiting the universality of the conclusions. The study also did not fully consider students' psychological traits, diverse educational backgrounds, or varying multilingual experiences. Conducted over a short period, the research could not assess the long-term effects of ethnopedagogical methods. Additionally, relying solely on surveys limited the exploration of all factors influencing the development of ethnopedagogical competence.

RESULTS

The results of the survey conducted before and after the training in both the control and experimental groups revealed significant differences in students' levels of ethnopedagogical competence. In the control group, there were virtually no changes on most questions, indicating the stability of students' knowledge and skills without the use of an ethnopedagogical program. Significant improvements were observed in the experimental group, where ethnopedagogical methods were applied (Table 2).

The frequency of interactions with representatives of language minorities remained virtually unchanged in the control group after training ($t = 1.22$, $p = 0.23$), while the experimental group showed a significant increase in the frequency of these interactions ($t = 2.83$, $p < 0.01$). Confidence in communication with representatives of other cultures also significantly increased in the experimental group ($t = 3.14$, $p < 0.01$), while only a slight change was observed in the control group ($t = 1.45$, $p = 0.15$). Difficulties in understanding students who speak different languages decreased in the experimental group ($t = 2.99$, $p < 0.01$), reflecting improvements in communication skills and overcoming language barriers. No changes were observed in the control group ($t = 0.92$, $p = 0.37$). In the experimental group, a significant reduction in communication difficulties with colleagues from other ethnic groups was also observed ($t = 3.40$, $p < 0.01$), whereas in the control group, changes were minimal ($t = 0.85$, $p = 0.39$).

The importance of using various languages in the educational process was more clearly recognized in the experimental group ($t = 2.58$, $p < 0.01$), and willingness to work in a multinational team significantly increased ($t = 3.05$, $p < 0.01$). No such improvement was observed in the control group, and t values for these indicators were not statistically significant ($p > 0.05$). The frequency of misunderstandings due to language differences also significantly decreased in the experimental group ($t = 3.25$, $p < 0.01$), and the awareness of the importance of developing ethnopedagogical skills for future teachers significantly increased ($t = 2.35$, $p < 0.05$). No such changes occurred in the control group ($t = 1.12$, $p = 0.27$). The impact of ethnopedagogical skills on the academic success of students from language minorities was also rated significantly more positively in the experimental group ($t = 2.71$, $p < 0.01$).

Table 2: Pre- and Posttraining Results for Both Groups (Block 1 of the Survey)

Question	Control group				Experimental group			
	Pretraining	Posttraining	t-value	p value	Pretraining	Posttraining	t value	p value
Frequency of interaction with representatives of language minorities	3.1	3.3	t = 1.22	p = 0.23	4.2	4.8	t = 2.83	< 0.01
Confidence in communication with representatives of other cultures	2.8	3.0	t = 1.45	p = 0.15	4.3	4.9	t = 3.14	< 0.01
Difficulty in understanding students who speak a different language	4.0	3.8	t = 0.92	p = 0.37	2.9	2.1	t = 2.99	< 0.01
Frequency of difficulties in communication with colleagues from other ethnic groups	3.7	3.5	t = 0.85	p = 0.39	2.8	2.0	t = 3.40	< 0.01
Importance of using various languages in the educational process	3.4	3.6	t = 1.08	p = 0.28	4.6	4.9	t = 2.58	< 0.01
Willingness to work in a multinational team	3.2	3.4	t = 1.06	p = 0.30	4.5	4.9	t = 3.05	< 0.01
Frequency of misunderstandings due to language differences in the learning environment	3.8	3.6	t = 0.91	p = 0.37	2.7	2.0	t = 3.25	< 0.01
Development of ethnopedagogical competencies for future teachers	3.5	3.7	t = 1.25	p = 0.21	4.7	4.9	t = 2.35	< 0.05)
Impact of ethnopedagogical competencies on the academic success of students from language minorities	3.6	3.8	t = 1.12	p = 0.27	4.5	4.8	t = 2.71	< 0.01
Adaptation to teaching methods for working with language minorities	3.1	3.3	t = 1.08	p = 0.29	4.3	4.8	t = 3.45	< 0.01

Source: developed by the author

The adaptation of teaching methods for working with language minorities also significantly improved in the experimental group ($t = 3.45, p < 0.01$), while no significant changes were observed in the control group ($t = 1.08, p = 0.29$). Thus, the results demonstrated that the introduction of ethnopedagogical approaches into the educational process positively affected the development of **students’** skills in a multilingual and multicultural educational environment.

Stress levels decreased in both groups, but the reduction was more significant in the experimental group (Table 3). This improvement is attributed to the use of ethnopedagogical methods in a multilingual educational setting. All changes were statistically significant ($p < 0.05$), confirming the program’s effectiveness in lowering stress. The difference in outcomes between the groups highlights the importance of integrating ethnopedagogy into teacher training to enhance intercultural communication and reduce stress in diverse classrooms.

Table 3: Stress Level Before and After Training for the Control and Experimental Groups (Block 2 of Survey)

Group	Before Training	After Training	t value	p-level of significance
CG	3.9	3.2	2.56	0.01
EG	2.5	1.6	5.29	0.001

Source: developed by the author

Responses to questions 5–7 of the second survey block varied depending on the students' experience in intercultural environments. These data are presented in Figure 1. The most significant source of stress for 38% of students when communicating with representatives of other cultures was the lack of language skills, which hindered understanding. For 31%, the primary stress factor was differences in mentality, particularly in situations of active interaction. Lack of communication experience was noted by 18% of respondents, while 22% expressed fear of making mistakes, which may indicate a gradual acclimatization to intercultural interaction.

The strategies for overcoming language barriers varied notably between groups. In the control group (CG), 50% of students relied on translators and dictionaries, favoring traditional but less effective communication methods. In contrast, 72% of the experimental group (EG) used media resources, demonstrating more flexible and adaptive communication strategies. Additionally, 38% of CG students used visual aids, while 16% of EG students employed simplified linguistic constructions, indicating the development of intuitive communication techniques. Most EG students (78%) reported that intercultural training and ethnopedagogical methods helped reduce stress, while 11% saw no effect, and another 11% experienced increased stress.

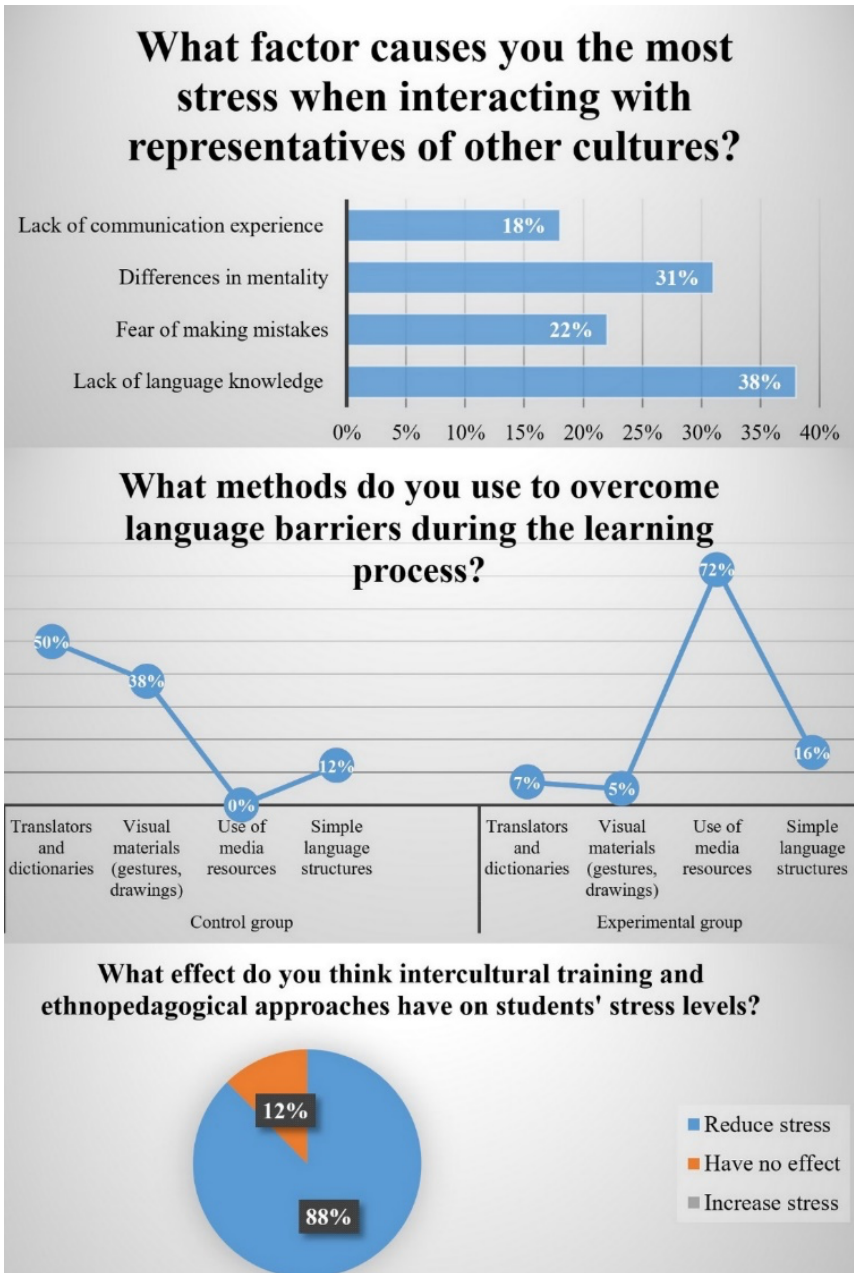


Figure 1: Response to Question 5-7 of the Second Survey Block

Source: Author's development

These findings suggest that ethnopedagogical training generally contributes to reduced stress and improved intercultural communication, as EG participants displayed greater confidence and more effective strategies for navigating multilingual environments.

The analysis of the open-ended questions (Block 3) revealed that students consider interactive lectures, role-playing games, and case study methods to be the most useful teaching strategies in a multicultural environment. One participant noted, "Discussing real situations helps to understand cultural differences and establish communication." Another emphasized the importance of visual aids: "Diagrams, illustrations, and videos make learning easier, even when there are language barriers." Among the communication challenges, students most frequently cited language barriers and differences in communication styles. One respondent noted, "Sometimes it is difficult to understand intonation and gestures, as they mean different things in different cultures." Another shared, "I am afraid of making mistakes in speech, so I avoid communicating with native speakers of other languages."

Most students noted that experience with different cultures is important for a teacher. One respondent stated, "The more experience one has working with different cultures, the easier it is to adapt to any audience." Among suggestions for improving education, students highlighted additional classes and workshops. One commented, "It is useful to practice more communication with native speakers of other languages, for example, in partnership projects."

Key ethnopedagogical skills identified by students include adapting to the educational process, empathy, and tolerance. One participant emphasized, "A teacher must establish contact with students regardless of their culture." Students suggested international programs, language clubs, and cultural events to enhance intercultural communication. One noted: "Collaborative projects with international students will help us better understand each other." Another added: "Joint activities allow us to perceive cultural differences as normal rather than as obstacles." The analysis of responses confirmed that the students in the experimental group recognize the importance of ethnopedagogy and are ready to apply intercultural skills in their future work. They acknowledge the effectiveness of ethnopedagogical methods and view them as valuable for their future profession.

DISCUSSION

The study confirmed that using an ethnopedagogical approach significantly improved students' intercultural competence, mirroring findings from previous research. In the experimental group, students reported more frequent interactions with speakers of other languages ($t = 2.83$, $p < 0.01$), greater confidence in intercultural communication ($t = 3.14$, $p < 0.01$), and fewer difficulties understanding others ($t = 2.99$, $p < 0.01$). These results are consistent with Syasmita et al. (2019), who also found that ethnopedagogical methods improved learning outcomes compared to traditional approaches ($F = 21.164$, $p < 0.05$).

Both studies highlight the effectiveness of ethnopedagogy in enhancing students' intercultural skills and support its integration into teacher education.

Our findings also support the conclusions of Indonesian researchers Nursima et al., who noted the positive influence of ethnopedagogy on thematic learning outcomes and the deeper connection of primary school students with their cultural environment (Nursima et al., 2024). In our study, students in the experimental group demonstrated improved adaptation of teaching methods for working with language minorities ($t = 3.45$, $p < 0.01$), which confirms the enhanced effectiveness of ethnopedagogical approaches in multilingual educational environments.

Research by Russian scholars in Tatarstan developed an effective model for forming future teachers' ethnocultural competence (Salpykova et al., 2024). Similar findings in Karelia highlighted the importance of ethnopedagogical competence amid current sociocultural conditions (Sukhov, 2021). Our study also showed positive results, with increased student readiness to work in multinational teams after implementing an ethnopedagogical competence program ($t = 3.05$, $p < 0.01$).

In the study by Uzatosun from Turkey, it was established that self-regulated motivation significantly impacts the development of foreign language speaking competence (Uzatosun, 2021), which is also observed in our study through the increased confidence of students in intercultural interaction. In the experimental group, there was a rise in confidence in communication with representatives of other cultures ($t = 3.14$, $p < 0.01$), indicating a significant influence of motivational factors that facilitate successful intercultural communication.

This study's results align with research on language barriers and overcoming strategies. In the control group, 50% of students relied on traditional tools such as translators and dictionaries, while 72% in the experimental group used media resources, showing greater adaptability in intercultural communication. These findings are consistent with Indonesian studies, which show that modern ethnopedagogical methods enhance communication in multilingual settings and improve students' resilience in higher education (Rahayu et al., 2025).

In the discussion of the results of this study, it is important to highlight key ethnopedagogical competencies that proved to be the most effective in a multilingual environment. One of the most effective competencies identified during the experiment is the ability to overcome language barriers. In the experimental group, students significantly improved their skills in overcoming language difficulties, as evidenced by a reduction in the frequency of misunderstandings due to language differences in the educational environment. This is also consistent with the findings of the Russian study by Kunovski and Pomortseva (2021), which emphasizes the importance of adapting the language of instruction as an integrating factor for effective interethnic interaction. Furthermore, the readiness to work in a multinational team emerged as a key aspect that improved in the experimental group. This is also confirmed by research from Indonesian authors (Syasmita et al., 2019), who demonstrated that the ethnopedagogical approach significantly enhances educational outcomes and fosters the development of skills for effective intercultural interaction. Thus, these

competencies contribute not only to improving intercultural communication but also to the overall reduction of stress, increasing students' confidence in the educational process, and preparing them for professional activities in multilingual and multicultural environments.

CONCLUSIONS

The study results confirmed that ethnopedagogical methods positively impact the development of students' ethnopedagogical skills. The experimental group showed significant improvements in confidence in intercultural communication ($t = 3.14, p < 0.01$), frequency of interactions with language minorities ($t = 2.83, p < 0.01$), and adaptation to pedagogical methods for multilingual audiences ($t = 3.45, p < 0.01$). The control group showed no significant changes ($p > 0.05$), confirming the effectiveness of ethnopedagogy integration. Stress levels in the experimental group decreased significantly (from 2.5 to 1.6, $t = 5.29, p = 0.001$), while the control group showed a smaller reduction (from 3.9 to 3.2, $t = 2.56, p = 0.01$), highlighting the role of ethnopedagogical methods in creating a comfortable learning environment.

The study identifies key factors that contribute to the development of ethnopedagogical skills in future teachers and demonstrates the need to integrate ethnopedagogy into professional training in multicultural societies. The findings can inform the design of educational programs and teacher training courses in culturally and linguistically diverse settings, benefiting institutions aiming to foster inclusive environments. Future research should explore the impact of ethnopedagogy on academic outcomes, develop new adaptation methods for multicultural education, investigate intercultural competence development in various teacher specialties, and conduct international comparative studies on ethnopedagogical effectiveness.

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Data availability. All data generated or analyzed during this study are included in this published article.

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Consent to participate. Informed consent was signed by participants.

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Author bio

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APPENDIX A SURVEY

Response options using a 5-point Likert scale:

Strongly disagree
Somewhat disagree
Neutral
Somewhat agree
Strongly agree

Block 1. Evaluation of the impact of ethnopedagogical competencies on communication with language minorities

1. How often do you interact with representatives of language minorities during the learning process?
2. How confident do you feel when communicating with representatives of another culture?
3. How difficult is it for you to understand students who speak a language different from your native language?
4. How often do you experience difficulties communicating with colleagues from other ethnic groups?
5. How important is it for you to use different languages in the educational process?
6. How would you assess your readiness to work in a multinational team?
7. How often do you encounter misunderstandings due to language differences in the learning environment?
8. How important, in your opinion, is it to develop ethnopedagogical competencies for future educators?
9. In your opinion, what impact do ethnopedagogical competencies have on the academic success of students from language minorities?
10. How easily do you adapt to teaching methods aimed at working with language minorities?

Block 2. The Impact of Ethnological Competencies on Stress Levels and Overcoming Language Barriers

11. How often do you experience stress due to language or cultural differences in the educational environment?
Very often, Often, Rarely, Never
12. Do you experience more stress when interacting with representatives of language minorities compared to interacting with native speakers of your language?
Yes, significantly more
Yes, slightly more
No difference
I experience less stress
13. How would you rate your confidence in overcoming language barriers in the educational environment?

- Not confident at all
 - Rather not confident
 - Neutral
 - Rather confident
 - Very confident
14. Do you think the university should pay more attention to ethnopedagogical competencies in the educational program?
- Yes, more
 - Yes, slightly more
 - Sufficient attention
 - No need
15. Which factor causes you the most stress when interacting with representatives of other cultures?
- Lack of language knowledge
 - Difference in mentality
 - Fear of making mistakes
 - Lack of communication experience
16. Which methods do you use to overcome language barriers during the learning process?
- Translators and dictionaries
 - Simple language structures
 - Visual materials (gestures, drawings)
 - Use of media resources
17. In your opinion, what effect do intercultural training and ethnopedagogical approaches have on students' stress levels?
- Reduced stress
 - Have no effect
 - Increased stress

Block 3. Open-ended survey questions for the experimental group (EG)

18. In your opinion, which teaching methods are most effective for students from different ethnocultural and linguistic backgrounds?
19. What difficulties do you experience when communicating with speakers of other languages and cultures in the educational environment?
20. How important do you believe experience in communication with people from other cultures is for a teacher's professional growth?
21. What do you think could be improved in the educational process to facilitate interaction between students from different ethnic and linguistic groups?
22. Which ethnopedagogical competencies do you believe are most important for future educators in a polyethnic educational environment?
23. In your opinion, which methods are most effective for improving intercultural communication in universities?

APPENDIX B

Training Program for Control and Experimental Groups

No	Training Topics	Control Group	Experimental Group
1	Basics of Ethnopedagogy and Intercultural Communication	Students studied basic pedagogical approaches without considering ethnocultural aspects. They discussed general issues in pedagogy and psychology of learning.	Students studied the basics of ethnopedagogy, analyzing real case studies of interaction in polyethnic groups. They worked with examples of successful integration of ethnopedagogical approaches. They completed group tasks on adapting educational methods for a multilingual environment.
2	Methods for Overcoming Language Barriers	The training followed standard methods, with students managing potential language difficulties on their own, without special tools or techniques.	Students learned techniques for simplified speech, working with translators, and nonverbal communication (gestures, facial expressions). Practical tasks were carried out, including role-playing games in which students simulated communication in an unfamiliar language and searched for ways to understand each other.
3	Cross-Cultural Training	Training sessions and intercultural games were not conducted. Communication took place in a natural mode.	Students participated in special training sessions aimed at developing tolerance and understanding cultural differences. They practiced role-playing games, analyzed cultural stereotypes and their influence on communication, and participated in discussions on perception barriers between different cultures.
4	Ethnopedagogical Approaches in Education and Upbringing	Students used standard educational methods focused on traditional pedagogical practices.	Students studied various ethnopedagogical methods (e.g., using folk tales, proverbs, and examples from different cultures in the educational process). They developed their own mini-lessons adapted for a multilingual audience.
5	Integration of Cultural and Linguistic Knowledge into the Educational Process	The training followed widely accepted programs, without adaptation to a polyethnic environment.	Students developed educational projects that included elements from different cultures. They used multimedia resources that combined language learning with cultural aspects. Thematic discussions were held where students shared traditions from their cultures.
6	Psychological Aspects of Learning in a Multilingual Environment	The training did not include special sessions aimed at reducing stress or adapting to a multilingual environment.	Students worked with psychological exercises aimed at reducing anxiety in communication in a nonnative language. They underwent stress level testing, learned how to manage their emotions in difficult communication situations, analyzed their own reactions in stressful language situations, and explored ways to overcome them.