

Relevance. The lack of studying the problem of scientific and language training specialists requires experimental search and pedagogical solutions based on the experience available in the education system, including the use of digital technologies. It is important to ensure the development of technological solutions based on digital reality, which can significantly improve scientific and language training within the framework of educational programs at a technical university. In this context, the development of a model of scientific and professional training through the introduction of automated software products for teaching scientific language becomes most relevant.

The objective of the project is to develop and to implement a model of intensifying scientific and professional language training of technical specialists in the context of the digital transformation of the education system to realize the scientific and creative potential of the human capital of the future specialist.

Expected and achieved results:

- Key linguistic features of the scientific style in the field of vocational-technical discourse have been identified. The main types of scientific and professional activities of specialists in technical fields have been determined.
- Linguistic tools for developing scientific and professional competence of future specialists have been defined. The main factors of digital transformation in language education have been identified. A classification of the characteristics of scientific discourse in communication for technical specialists has been developed.
- The educational process in a technical university has been evaluated through a multifactor SWOT analysis, and the primary strategy for scientific and professional language training of technical specialists has been established. An assessment of the linguistic educational environment in the technical university has been conducted in accordance with the scientific discourse of vocational-technical communication.
- Linguodidactic principles for scientific and professional language training of technical specialists have been defined. The research results have been analyzed, and measures for improving the scientific language training of specialists in technical fields have been developed.
- A model for scientific and professional language training of specialists in technical specialties has been developed. A digital training program for teaching the scientific-professional language has been created. Educational language content has been integrated into the program modules based on eight characteristics of scientific-technical discourse.
- The first stage of practical implementation of the model in the educational process for training technical specialists has been carried out. An algorithm for integrating the model into the educational process of technical universities has been developed. A diagnostic assessment of scientific language proficiency among students of the mining faculty has been conducted, along with an analysis of the preliminary test results.

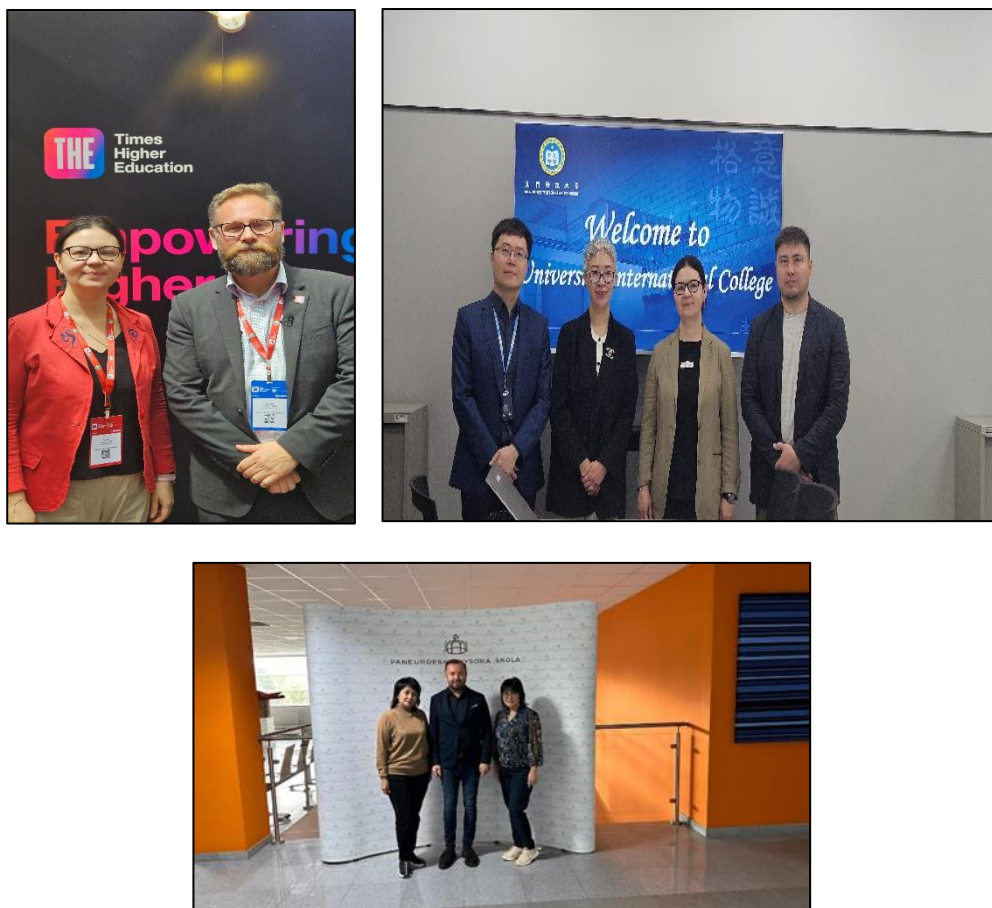


Figure 1 – Participation in events within the framework of the project

Research team:

1. **Project manager**, head of the FL Department, Cand. Ped. Sci., Associate Professor Jantassova D.D.

<https://orcid.org/0000-0003-2595-3249> Researcher ID: P-7271-2017;

Scopus Author ID: 57189027014.

The research team composition:

2. Azimbayeva Zhanat Amantayevna, responsible researcher, head of the Russian Language and Culture Department of A. Saginov KTU

ORCID ID: 0000-0002-9247-1138

Scopus Author ID: 55990394300

3. Tentekbayeva Zhuldyz Mukhamedgalievna, researcher, Master of Pedagogy, senior lecturer of the Foreign Languages Department of A. Saginov KTU

Researcher ID: GYD-4656-2022

ORCID ID: 0000-0002-9286-0352

Scopus Author ID: 56027539800

4. Aitbayeva Saltanat Khamzakzy, researcher, Master of Pedagogy, senior lecturer of the Foreign Languages Department of A. Saginov KTU

ORCID ID: 0000-0002-7511-952X

5. Kaliaskarov Nurbol Baltabayevich, researcher, PhD, head of the TSS Department of A. Saginov KTU

ORCID ID 0000-0003-3684-14205

Scopus Author ID: 57201113007

Researcher ID Web of Science: ABC-2155-2020

Researcher ID in Publons: ABC-2155-2020

6. Damiyev Daniel Temirgaliyevich, researcher, Master of Engineering, Senior Laboratory Assistant of the Department of Foreign Languages of A. Saginov KTU

ORCID ID 0000-0002-4245-6810

7. Kishenova Ainur Yussupovna, researcher, senior lecturer of the Russian Language and Culture Department of A. Saginov KTU

ORCID ID 0000-0002-1494-6388

Researcher ID Web of Science: 23774690

8. Yurchenko Vassily Viktorovich, researcher, PhD, head of the TEMES Department of A. Saginov KTU

ORCHID 0000-0002-6543-1632

Scopus Author ID 57213756780

List of publications:

- 1) Azimbayeva Zh., Jantassova D., Kishenova A. Concept of academic discourse writing in the process of scientific training of technical specialists // Collection of scientific papers “The Interdisciplinary Current Challenges in Research, Education and Media”. Pan-European University, 2023. – p.4-6. ISBN 978-80-8275-011-2.
- 2) Джантасова Д.Д., Азимбаева Ж.А., Айтбаева С.Х. Анализ влияния факторов цифровой трансформации на языковое образование // Проблемы современного педагогического образования, 2024.- №82(4). С.109-112.
- 3) Джантасова Д.Д., Азимбаева Ж.А., Stanislav Benčić Analysis of technical specialists’ scientific training: the role of written academic discourse // Труды университета, 2024. – Караганда: КарТУ, №1(94). С.335-342. DOI 10.52209/1609-1825_2024_1_335
- 4) Джантасова Д.Д., Азимбаева Ж.А., Бритвина В.В. Анализ ключевых аспектов цифровой трансформации системы высшего образования // Вестник Карагандинского университета. Серия Педагогика – Караганда: КарУ, 2024. – №2(114). С.74-83. DOI: <https://doi.org/10.31489/2024ped2/74-83>
- 5) Джантасова Д.Д., Азимбаева Ж.А., Тентекбаева Ж.М. The role of scientific and technical discourse in the implementation of scientific language training of engineers // Высшая школа Казахстана, 2024. – Астана.– №3(47). С.61-69. DOI:10.59787/2413-5488-2024-47-3-61-69 <https://highedujournal.kz/index.php/1/article/view/278/73>
- 6) Джантасова Д.Д., Азимбаева Ж.А. Интенсификация научно-языковой подготовки инженеров (аспект лингводидактических положений) // Наукосфера, 2024. – Смоленск. – №9 (1). С. 137-142. DOI 10.5281/zenodo.13790141
- 7) Джантасова Д.Д., Rab Nawaz Lodhi, Калиаскаров Н.Б. Process analysis of scientific training for technical students // Труды университета, 2024. – Караганда: КарТУ. – №4(97).С.281-290
- 8) Джантасова Д.Д., Айтбаева С.Х. Scientific discourse characteristics of professional technical communication // Материалы XX Международной Конференции KAZTEA и ARELTA «Трансформационное обучение в контексте Казахстанского образования», Кокшетау, 2024. С. 83-86. <https://kaz-tea.kz/en/publications/article-collections/kaztea-proceeding-2024>
- 9) Джантасова Д.Д. Обучение научно-техническому дискурсу специалистов инженерного профиля в условиях цифровой трансформации // Материалы I международной научно-практической конференции «Татары Казахстана: история, культура, язык, литература», Кокшетау, 2024. - С. 59-67.
- 10) Damira Jantassova , Daniel Churchill , Zhuldyz Tentekbayeva and Saltanat Aitbayeva. STEM Language Literacy Learning in Engineering Education in Kazakhstan. Educ. Sci. 2024, 14(12), 1352. (CiteScore 2023 = 4.8, процентиль = 81, область науки: Education). <https://www.mdpi.com/2227-7102/14/12/1352>
- 11) Damira Jantassova , Andrew David Hockley , Nurbol Kaliaskarov Zhanat Azimbayeva. Research Proficiency of Engineers: Analysis of the Mass Survey. TEM Journal. 2025.- Volume 14, Issue 2, pages 1303-1312, ISSN 2217-8309, DOI: 10.18421/TEM142-31, https://www.temjournal.com/content/142/TEMJournalMay2025_1303_1312.html
- 12) Damira Jantassova, Daniyel Damiyev. Design of the framework for stem language training in engineering education. Foreign Languages Department, Abylkas Saginov Karaganda Technical University // Higher education in Kazakhstan, 2025. -№ 2(50) <https://highedujournal.kz/index.php/1/article/view/447/112>
- 13) Джантасова Д.Д., Азимбаева Ж.А. Научный дискурс в профессионально-технической коммуникации : монография / Д. Д. Джантасова, Ж. А. Азимбаева. – Алматы : Карагандинский технический университет имени Абылкаса Сагинова, 2025. – 229 с. – ISBN 978-601-1234-56-7.

14) Джантасова Д.Д., Азимбаева Ж.А., Юрченко В.В. Разработка мер по научно-языковой подготовке stem специалистов.// Информационно-коммуникационные технологии в педагогическом образовании, 2025. № 4 (97). С. 48-53.
<https://elibrary.ru/item.asp?id=82453828>

"Certificates of State Registration of Copyright":

1) Джантасова Д.Д., Азимбаева Ж.А., Калиаскаров Н.Б. Оценка системы научной подготовки инженерно-технических кадров: материалы комплексного исследования потребностей преподавателей. Свидетельство о внесении сведений в государственный реестр прав на объекты, охраняемые авторским правом (№40183 от 03 ноября 2023).

2) Джантасова Д.Д., Тентекбаева Ж.М., Айтбаева С.Х. Оценка потребностей технического вуза в научно-языковой составляющей подготовки специалистов технического профиля. Свидетельство о внесении сведений в государственный реестр прав на объекты, охраняемые авторским правом (№49358 от 2 сентября 2024).

3) Джантасова Д.Д., Азимбаева Ж.А., Тентекбаева Ж.М., Айтбаева С.Х. Определение языковых средств в формировании научной компетенции будущего специалиста. Свидетельство о внесении сведений в государственный реестр прав на объекты, охраняемые авторским правом (№49529 от 10 сентября 2024).

4) Джантасова Д.Д., Тентекбаева Ж.М., Дамиев Д.Т. Цифровая программа обучения научному языку в профессиональной подготовке STEM специалистов. Свидетельство о внесении сведений в государственный реестр прав на объекты, охраняемые авторским правом (№59883 от 17 июня 2025).

5) Джантасова Д.Д., Тентекбаева Ж.М., Айтбаева С.Х. Модель научно-профессиональной языковой подготовки специалистов технических специальностей. Свидетельство о внесении сведений в государственный реестр прав на объекты, охраняемые авторским правом (№59599 от 11 июня 2025).

Information for potential consumers

The results of the study will be commercialized in the form of a ready-made digital program for teaching scientific and professional language in technical fields and offered to a wide range of listeners who need the development of scientific knowledge. The digital program can be of great interest not only to the category of future specialists associated with technical industries, production but also to current production engineers who need advanced training, as well as to any category of those wishing to participate in informal education programs.

Scope: the results of the project can be used in such areas of science as higher education pedagogy, linguistics, psychology, and can also be of interest for conducting various types of language examinations.

Date of information update: 01.07.2025