Brief information about the project

Name of the project	AP19577160 "Development of a technological platform for virtual learning based on artificial intelligence approaches"
Relevance	A distinctive feature of the project is the creation of software tools and the implementation of a "Technological platform for virtual learning at the university." The development of an intelligent learning system (ITS), artificial intelligence elements on the existing platform allows you to get a competitive product on the domestic market, which will include online learning software, learning environments, and new generation training courses in order to improve the quality of training for students and teachers. This project is aimed at developing a technological platform for virtual learning at the university within the framework of E-Learning as an educational environment based on artificial intelligence, creating an information and educational space (E-learning systems: creating a technological platform for a specialized portal, an electronic scientific and methodological laboratory and digital libraries, Online courses and their repositories, etc.), creating a human-machine interaction interface. The created information and educational space using artificial intelligence (Web education and E-learning systems, intelligent learning systems, creation of a specialized portal, website, electronic scientific and methodological laboratory and digital libraries, Online courses and their repository, etc.) can be used for the purpose of scientific, theoretical and methodological support of the system higher and secondary education. The applicability of scientific results effectively affects the improvement of the quality of education and the formation of human resources that meet modern international standards for the development of the ICT sector of the Republic of Kazakhstan, the development of the competencies of IT specialists.
Purpose	The goal of the project is to study algorithms and implement a technological platform for a virtual distance learning system using artificial intelligence (AI), create a flexible online platform for computerized adaptive-blended learning based on the VLTPU (Virtual learning technology platform at the university) portal, expand opportunities developed virtual assistants, the development of an interface for intelligent control of gestures of human-computer interaction.
Objectives	1. Expanding the technical capabilities of the platform of a virtual-distance learning system, as the basis for creating a competitive software product and a means

	of providing a distance and virtual educational environment within the framework of e-Learning 2. Study of a flexible online platform for computerized adaptive learning based on artificial intelligence 3. Development of programs of virtual assistants, technologies of virtual and augmented reality, mobile applications 4. Development of an interface for intelligent control of human-computer interaction in training 5. Implementation of a technological platform of a virtual distance educational environment within the framework of E-Learning 6. Analysis and monitoring of the implementation of this project
Expected and achieved results	The main results of the work on this project were the following: the technical capabilities of the virtual distance learning system platform were expanded, as the basis for creating a competitive software product and a means of providing a distance and virtual educational environment within the framework of e-Learning; a study of a flexible online platform for computerized adaptive learning based on artificial intelligence was conducted; a program of virtual assistants, virtual and augmented reality technologies, and mobile applications has been developed; an interface for intelligent control of human-computer interaction in training has been developed; the technological platform of the virtual educational environment was introduced into the educational process within the framework of E-Learning with the receipt of an Act of implementation. The platform offers a personalized approach to learning, adapting content and teaching methods to the needs of each student. This contributes to a more effective assimilation of knowledge and abilities, helps to increase motivation and educational achievements, and also creates favorable conditions for unlocking the potential of each student. The technology platform, based on artificial intelligence approaches, demonstrates effectiveness in providing flexibility and accessibility to education, as well as improving interaction between teachers and students.
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List of publications with links to them	**2021** 1. Kerimbayev, N., Garvanov, I., Tkach, G., Akramova, A., & Balmash, D. Trends in the development of mobile learning technology in different countries //Вестник КазНУ Серия «Педагогические науки»– 2021. – Т. 69. – №. 4. С. 44-51. https://doi.org/10.26577/JES.2021.v69.i4.04 (**КОКСОН**) 2. Kerimbaev N., Garvanov I., Tkach G. Role of mobile applications in the formation of information competence of students// Вестник ToU «Педагогическая серия»– 2021. – №. 3. С. 33-43 https://doi.org/10.48081/XVJH4288 (**КОКСОН**) 3. Ткач Г., Керимбаев, Н. Н., Нурым, Н. Н., & Акрамова, А. С. Мобильные технологии в виртуальных средах обучения //Вестник КазНПУ «Физико-математические науки» – 2021. – Т. 75. – №. 3. – С. 197-204. https://doi.org/10.51889/2021-3.1728-7901.24 (**КОКСОН**) 4. Jotsov, V., Akramova, A., Tkach, G., Kerimbayev, N., Madyarova, G., Beisov, N., & Bolyskhanova, M. Development of a Virtual Conference Online Platform for Adaptive Learning //2021 International Conference Automatics and Informatics (ICAI). – IEEE, 2021. – С. 106-110. https://doi.org/10.1109/ICAI52893.2021.9639723 (**Scopus**) 5. Madyarova, G., Bolyskhanova, M., Tkach, G., Kuanyshbayev, M., Adamova, K., Aubakirov, T., & Parimbek, Z. Mobile and cloud technologies in the virtual learning system //EDULEARN21 Proceedings. – IATED, 2021. – С. 7882-7887. https://doi.org/10.21125/edulearn.2021.1608 **2022** 6. Kerimbayev, N., Jotsov, V., Akramova, A., & Nurym, N. Modeling and Feedback Control for Development of Mobile Technologies in Virtual Education Environments

	//In Complex Systems: Spanning Control and Computational Cybernetics: Applications: Dedicated to Professor Georgi M. Dimirovski on his Anniversary, 2022. vol 415. pp. 389-412. Springer, Cham. https://doi.org/10.1007/978-3-031-00978-5_16 Процентиль - 56%, (**Scopus)** 7. Мадьярова Г. А., Ешенкожаев Н. Ш. Орта мектепте программалау тілдерін оқытудың әдістемелік ерекшеліктері //Вестник КазНПУ «Физико-математические науки». – 2022. – Т. 78. – №. 2. – С. 212-219. https://doi.org/10.51889/2022-2.1728-7901.266 (**КОКСОН**) 8. Мадьярова, Г., Саттар, П. Особенности обучения информационной безопасности на основе применения цифровых технологий. Вестник КазНПУ «Физико-математические науки». – 2022. Т. 80. - №4. С. 244–250. https://doi.org/10.51889/8159.2022.37.63.028 (**КОКСОН**) 9. Kerimbayev, N., Jotsov, V., Umirzakova, Zh., Bolyskhanova, M., & Tkach, G. The Use Of Chat-Bot Capabilities As A Type Of Modeling In Intelligent Learning //2022 IEEE 11th International Conference on Intelligent Systems (IS). – IEEE, 2022. – С. 1-8. https://doi.org/10.1109/IS57118.2022.10019627 (**Scopus**) 10. Kerimbayev, N., Madyarova, G., Bolyskhanova, M., Tkach, G., Garvanov, I., & Umirzakova, Z. Using the innovative I-learning platform in the education system //2022 International Conference Automatics and Informatics (ICAI). – IEEE, 2022. – С. 83-88 https://doi.org/10.1109/ICAI55857.2022.9960052 **(Scopus**) 11. Jotsov, V., Abdiakhmetova, Z., Kerimbayev, N., Berdaly, A., & Zhumakhan, L. Jotsov V. et al. Using Machine Learning Algorithms to Improve Education Process //2022 International Conference Automatics and Informatics (ICAI). – IEEE, 2022. – С. 78-82. https://doi.org/10.1109/ICAI55857.2022.9960034 (**Scopus**) 12. Kerimbayev, N., Bolyskhanova, M. Effects of using a virtual school platform at school online education //Вестник КГУ им.И.Арабаева -2022. С. 56-60. **2023** 13. Kerimbayev, N., Nurym, N., Akramova, A., & Abdykarimova, S. Educational Robotics: Development of computational thinking in collaborative online learning //Education and Information Technologies. – 2023. – С. 1-23. https://doi.org/10.1007/s10639-023-11806-5 Процентиль – 95% (**Scopus)** Квартиль Q1 **(Web of Science)** 14. Керимбаев, Н. Н., Шадиев, Р., & Умирзакова, Ж. Чатботтың студентке бағытталған оқыту әдісі

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