Project name: IRN №AP09259657 "Research and development of an automated proctoring system for monitoring students' knowledge in distance learning".

Relevance: Today, the defining task of universities is to train specialists who are able to constantly improve their knowledge and skills, who are able to quickly navigate the growing flow of information and make decisions in non-standard situations. The possibility of obtaining mass, affordable education opens up with the implementation of distance learning. However, shortcomings in the systematic organization of the distance learning process, the lack of clear regulated control procedures often lead to a decrease in the quality of student training, cause a negative attitude to distance education in general. This problem dictates the need for each university implementing distance learning to solve a set of tasks to create a system for assessing the quality of education.

In this regard, the issue of research of innovative technologies in the organization of the educational process, namely, the control of students' knowledge based on information and communication technologies in the conditions of distance learning is particularly relevant.

Purpose: research and development of an automated proctoring system for monitoring students' knowledge in a distance learning environment.

Expected and achieved results:
- the scientific and methodological foundations of the organization of the educational process using distance learning technologies in universities have been developed;
- structural and logical schemes for monitoring and evaluating the results of students' educational activities have been prepared;
- algorithms and models of face image recognition are built;
- algorithms and models of visual image recognition are built;
- speech recognition algorithms and models have been developed;
- a software product of the proctoring system will be developed;
- reports on testing the software product of the proctoring system will be executed;
- reports on the trial operation of the software product will be carried out;
- technical documentation will be developed.

Members of the research group:

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List of publications and patents published within the framework of this project: (with links to them):

3 articles have been prepared and published in peer-reviewed foreign publications recommended by the RSCI on the following topics:

1. Зулпыхар Ж.Е., Шындалиев Н.Т., «Методологические основы организации учебного процесса с использованием дистанционных технологий обучения в ВУЗах. Научный электронный журнал «Инновации. Наука. Образование». №40-2021. С. 660-664»;

2. Шаушенова А.Г., Жумасеитова С.Д., Онгарбаева М.Б., «Методические основы контроля знаний студентов в системе дистанционного обучения. Журнал: Вопросы устойчивого развития общества. №9-2021г. С. 206-211»;

3. Шаушенова А.Г., Жумасеитова С.Д., Ахметжанова Ш.Е., «Особенности современных биометрических методов идентификации. Журнал: Вопросы устойчивого развития общества. №9-2021г. С. 212-224».

2 articles have been prepared and accepted for printing in a peer-reviewed domestic publication recommended by CCS and 1 article in journals included in the Web of Science database on the following topics:

1. Зулпыхар Ж., Шындалиев Н., Оразбаева Б., «Қашықтан оқыту кезіндегі білімгерлердің сынақ емтихандарында қолданылатын бағдарламаларды талдау». Журнал: Вестник ЕНУ им. Л.Н. Гумилева. Серия: Педагогика. Психология. Социология. 4 (137) 2021.

2. Shaushenova A.G. , Akhmetzhanova Sh. E., Ongarbayeva M.B., «Comparison of Russian and Kazakhstan Proktoring Systems». Журнал: Вестник КарУ. Серия педагогика. 4 (104) 2021»;

3. Shaushenova, A., Zulpykhar, Zh., Zhumasseitova, S., Ongarbayeva, M., Akhmetzhanova, Sh, Mutalova, Zh, Niyazbekova, Sh, Zueva, A., «The Influence of the Proctoring System on the Results of Online Tests in the Conditions of Distance Learning». «AD ALTA. Journal of Interdisciplinary Research. Vol. 11, issue 2».

Information for potential users:
The developed scientific and methodological basis for the organization of the educational process in distance learning and a software product for taking online exams is applicable for all universities of the Republic of Kazakhstan.