

The name of the Project theme AP08956523: Improving the process of training future mathematics teachers using blended learning technologies.

The object of research: The process of training future teachers of mathematics.

The purpose of the work: To study methods and methods of creating online courses in mathematics using mixed learning technologies and to substantiate the possibilities of their application in the training of future teachers of mathematics.

The duration of the project is 12 months

Relevance of the topic: The education system requires a serious and radical update, taking into account current trends in education and digitalization. The Digital Kazakhstan program states that: "in order to achieve the set goals of the Program in the field of personnel qualification, the education system will be completely updated in accordance with the best international practices. The new education will meet the needs of the digital economy with an emphasis, first of all, on skills in information analysis and the development of creative thinking, rather than on memorizing facts and formulas," which shows the need for the development of e-learning.

This circumstance led to the emergence of blended learning, the basic principles of which were applied in the sixties of the XX century in corporate and higher education, but the term itself was used later. Analyzing the conducted global online survey of specialists on strategic issues of e-learning, it is concluded that the most important of them are related to the technology of teacher training and the introduction of innovative methods focused on the use of ICT in the educational process.

In general, blended learning can be considered one of the types or continuation of distance learning, but they have a special difference – it is mandatory "live" communication of students in blended learning with each other and with the teacher. Therefore, in blended learning, elements of full-time and distance learning technologies participate in a certain proportion, which, of course, allows you to simultaneously use their achievements, eliminating the disadvantages of both learning technologies.

In blended learning, both ready-made digital resources and those created by teachers themselves can be used. At the same time, it is better to give preference to complex electronic resources that combine educational content that meets the requirements of redundancy, and tools for organizing educational activities.

Thus, it follows from all the above that the problem of effective use of blended learning technology and the development of online courses that allow you to form such competencies as motivation, activity, initiative and self-organization of future teachers is relevant.

BASIC TASKS OF THE PROJECT:

- To study and analyze methods and ways of creating online courses in mathematics using blended learning technologies.
- To create an online course in the Moodle virtual system in the discipline "Algebra and Number Theory", used in the training of future mathematics teachers.
- To define and justify the principles and conditions for using of online courses based on blended learning technology.
- To develop the technology of blended learning based on introduction of the online course in the discipline "Algebra and Number Theory".

Main expected results of the project	Main results achieved
<ul style="list-style-type: none"> - scientifically substantiated possibilities of using blended learning technology in the training of future mathematics teachers through the development of online courses. - the online course in the discipline "Algebra and Number Theory", hosted in the Moodle virtual system; - justified principles and conditions for the use of online courses based on blended learning technology; - developed technology of blended learning based on introduction of the online course in the discipline "Algebra and Number Theory". <p>The obtained results will be published in scientific journals included in the quartile in the Web of Science database and (or) having the CiteScore percentile in the Scopus database, in the quantity and quality required in clause 7 of the competition documentation, as well as at least 1 (one) article in a peer-reviewed foreign and (or) domestic edition with a non-zero impact factor (recommended by CQAEA).</p>	<ul style="list-style-type: none"> - methods and methods of creating online courses in mathematics using mixed learning technologies have been studied and analyzed; - the possibilities of using online courses in the preparation of future teachers of mathematics based on the technology of blended learning are identified and justified; - an online course with an author's certificate has been created in the virtual Moodle system on the discipline "Algebra and number Theory", used in the preparation of future mathematics teachers. There is an author's certificate; - the principles and conditions for the use of online courses based on mixed learning technology are defined and justified, - the technology of mixed learning based on the introduction of an online course on the discipline "Algebra and number theory" has been developed and the effectiveness of its application has been shown,; - recommendations on the creation and use of an online course of the selected disciplines are offered; - 7 articles have been published and accepted

Scientific publications
List of accepted and published research papers
for the period from October 2020 to September 2021

№	Authors, name of the work	Note
Domestic for 2020		
In journals included in the list of recommended publications of the Committee for Quality Assurance in Education and Science of the MES of the Republic of Kazakhstan		
1	Кадирбаева Р.И., Джамакараева М.А. Технология смешанного обучения в подготовке будущих учителей математики // Журнал «Наука и жизнь Казахстана». -№11/2 (145) 2020. –С. 261-267	Published
Collection of scientific articles by ISPC		
2	Кадирбаева Р.И., Әтірбек К.Е., Асанова М.Ж. Аралас оқыту технологиясы – білім беру жүйесін жетілдірудің жаңа бағыты // Сборник научных статей МНПК «Современные тренды педагогического образования». –Шымкент. -2020.- С.131-135	Published
3	Джаманкараева М.А., Алимкулова Б.Т. Возможности и проблемы смешанного обучения в математическом образовании: перспективы в высшем образовании // Сборник научных статей МНПК «Актуальные проблемы и тенденции высшего профессионального образования». –Тараз.-2020г., С.90-95	Published
Domestic for 2021		
In journals included in the list of recommended publications of the Committee for Quality Assurance in Education and Science of the MES of the Republic of Kazakhstan		
4	Әмірбекұлы А., Алимкулова Б. «Алгебра және сандар теориясы» пәні бойынша онлайн-курсты енгізу негізінде аралас оқыту технологиясын жасақтау.// Журнал Торайғыров университетінің ХАБАРШЫСЫ. Педагогикалық сериясы -№3.2021 –Б.71-82	Published
Collection of scientific articles by ISPC		
5	Кадирбаева Р.И., Амирбекулы А., Джаманкараева М.А. Определение и обоснование принципов и условий применения онлайн-курсов на основе технологии смешанного обучения // Сборник научных статей МНПК «Дистанционное обучение: современные подходы (проблемы, опыт) в учебном процессе». – Талдықорган. -2021.- С.109-114.	Published
Foreign for 2021		
Collection of scientific articles by ISPC		
6	Кадирбаева Р., Джаманкараева М. Внедрение технологии смешанного обучения в курсе «Алгебра и теория чисел» в подготовке будущих учителей математики // Сборник научных статей МНПК «Современная наука в условиях модернизационных процессов: проблемы, реалии, перспективы». – Россия,Уфа, НИЦ «Вестник науки» - октябрь, 2021г. С.103-111	Published
In a peer-reviewed scientific publication included in the Scopus database		
7	Kadirbayeva R., Suleimenova L., Amirbekuly A., Alimkulova B., Jamankarayeva M. The methodology of designing the educational process in blended learning // (в журнале на базе Scopus, процентиль не ниже 35)	In the review process (there is a contract)

Composition of the research group

№	Full name, degree/academic degree, academic title	Main place of work, position	Role in the project or program	Scientific identifiers
1	Kadirbayeva Roza Iztleuovna, D.of P.Sc., docent	South Kazakhstan state pedagogical University (SKSPU), head of the Department of Mathematics	Project Manager	Number Science: M-6824-2015 . Number Scopus ID: 55841353600. Number ORCID: 0000-0002-5975-2683. Link to Scopus (Kadirbayeva R.): https://www.scopus.com/authid/detail.uri?authorId=55841353600 .
2	Amirbekuly Aldanazar, C.of P.Sc., docent	SKSPU, docent of Mathematics Department	Project executor	Number ORCID: 0000-0001-6879-1249 . Number Scopus ID: 57212536819
3	Jamankarayeva Madina, C.of Ph.-M.Sc.	SKSPU, Senior-lecturer of Mathematics Department	Project executor	Link to Web of Science (Jamankarayeva M.): http://apps.webofknowledge.com/CitationReport.do?product=WOS&searchmode=CitationReport&SID=P2PEaTL&eTwmbyyQRj7j&page=1&cr_pqid=5&viewType=summary&colName=WOS Link to Scopus (Jamankarayeva M.A.): https://www.scopus.com/authid/detail.uri?authorId=5551597900
4	Alimkulova Baktygul, doctoral student	Doctoral student, 6D010900 – Mathematics, SKSPU	Project executor	-

APPLICATIONS

Copyright certificate



Participation in conferences and courses

