

REPORT
about the work of the dissertation council

Dissertation Council in the direction «8D015 - Training of teachers in natural sciences (6D010900 / 8D01501 - Mathematics, 6D011000 / 8D01504 - Physics)»
at the Kazakh National Pedagogical University named after Abay

1. Data on the number of meetings held.

In the dissertation council at the Kazakh National Pedagogical University named after Abay in the direction «8D015 - Training of teachers in natural sciences (6D010900 / 8D01501 - Mathematics, 6D011000 / 8D01504 - Physics)» 9 meetings were held in the reporting year (from 03.01.2022 to 31.12.2022).

2. Surname, name, patronymic (if any) of the members of the dissertation council who attended less than half of the meetings.

There are no board members who attended less than half of the meetings.

3. List of doctoral students indicating the organization of training.

1) Iskakova Anargul Batyrbaevna, Kazakh National Pedagogical University named after Abay.

2) Shektibaev Nurdaulet Atenovich, International Kazakh-Turkish University named after H.A. Yasawi.

3) Turganbayeva Zhannur Nurtaevna, International Kazakh-Turkish University named after Kh.A. Yasawi.

4) Yerzhenbek Bulbul, Kazakh National Pedagogical University named after Abay.

5) Zykrina Symbat Zhumabaevna, Kokshetau University named after Sh.Ualikhanov.

6) Yerkisheva Zhazira Sabyrovna, International Kazakh-Turkish University named after Kh.A. Yasawi.

4. A brief analysis of dissertations reviewed by the council during the reporting year, highlighting the following sections:

According to the dissertation of Iskakova Anargul Batyrbaevna:

1) analysis of the topics of the considered works:

Dissertation topic - Methods of Teaching a Course of Physics for Technical Specialties in Higher Education Institutions.

Specialty: 6D011000 - Physics.

Scientific consultants - Doctor of pedagogical sciences, Professor Kozybai A.K.; doctor of pedagogical sciences, professor Mambetkunov E.M.

The defense took place on March 11, 2022.

The following new and reliable results were obtained in the work:

- the structure and content features of the course of physics in technical specialties, the continuity of the course of physics of secondary and higher

education are determined;

- methods of organizing students' educational activities, forms of conducting non-traditional lectures, independent work and tests to test students' knowledge are determined;

- a methodological system for teaching physics in technical specialties has been developed, that is, a methodology has been developed for implementing the learning goal, the content of education, project and transdisciplinary technology in the educational process.

2) *the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.*

The topic of the dissertation work and the idea of the research Iskakova A.B. meets the requirements aimed at solving the priorities and tasks specified in the Law of the Republic of Kazakhstan "On Education", the strategic development plan of the Republic of Kazakhstan until 2025, the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, the national project "Quality Education" Educated nation", the State Compulsory Standard of Higher Education of the Ministry of Education and Science of the Republic of Kazakhstan and other state regulatory documents regarding the development of the Kazakhstani education system and improving the quality of training of competitive specialists.

3) *analysis of the level of implementation of the results of dissertations in practice.*

The purpose of teaching the course of physics, content, methods of organizing educational activities, didactic content for the specialty "6B07104-Instrument Engineering" have been developed. The didactic content is equipped with author's video lectures, practical and test tasks and tasks for SIW. A textbook "Physical Models in Economics" has been developed as a didactic material as an educational and methodological support for students of technical specialties of higher educational institutions. In order to implement the continuity of the content of the course of physics, studied in the technical specialties of higher educational institutions, with fundamental and specialized disciplines, a textbook "Fundamentals of Information and Measurement Technologies" has been developed. The developed didactic content, textbooks and methodological system of teaching physics in technical specialties can be used at various stages of education, in the system of advanced training of teachers, in the practice of university physics teachers.

According to the dissertation of Shektibaev Nurdaulet Atenovich:

1) *analysis of the topics of the considered works:*

Dissertation topic - Methods of development of subject competence of future physics teachers in teaching the elective course «Physics of the nucleus and elementary particles.

Specialty: 6D011000 - Physics.

Scientific consultants - Doctor of Physical and Mathematical Sciences,

Associate Professor Turmambekov T.A.; doctor of pedagogical sciences, associate professor Bayzak U.A.; doctor of pedagogical sciences, professor Zhokhov A.L.

The defense took place on March 11, 2022.

The following new and reliable results were obtained in the work:

- the theoretical foundations for the development of subject competence of future physics teachers are determined;
- the psychological and pedagogical features of the development of the subject competence of future physics teachers are determined;
- approaches, didactic conditions for the development of the subject competence of a future physics teacher are determined based on the need for emotional-value relations in the learning process;
- an experimental-pedagogical experimental verification of the methodology of teaching the elective course "Physics of the Nucleus and Elementary Particles" was carried out on the basis of the professional training of future physics teachers and methodological recommendations were developed.

2) the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.

The topic of the dissertation work Shektibaeva N.A. is connected with the implementation of the Law of the Republic of Kazakhstan "On Education", "Digital Kazakhstan", the state program for the development of education and science of the Republic of Kazakhstan for different periods and the Messages of the First President of the Republic of Kazakhstan N.A. Nazarbayev and Head of State Kassym-Zhomart Tokayev to the people of Kazakhstan, which is least allows us to realize our subjective ideas in education. These paths are considered as guidelines that contribute to the sustainable development of teacher training at the university.

3) analysis of the level of implementation of the results of dissertations in practice.

The content of the elective course "Physics of the Nucleus and Elementary Particles" was developed, aimed at developing the subject competence of future teachers of physics. Electronic textbooks "Physical phenomena", "Physics of the atomic nucleus and elementary particles", "Physics of the atomic nucleus" have been prepared. Teaching-methodical and teaching aids "Atomic and nuclear physics (laboratory work)", "Main characteristics of the course of nuclear and elementary particle physics" were developed and presented.

According to the dissertation of Turganbayeva Zhannur Nurtayevna:

1) analysis of the topics of the considered works:

Dissertation topic – Methodical features of teaching probability theory and mathematical statistics in condition of updated content of the school education.

Specialty: 6D010900 - Mathematics.

Scientific consultants – Doctor of pedagogical sciences, Academician of the National Academy of Sciences of the Republic of Kazakhstan, Professor Abylkassymova A.E.; candidate of Technical Sciences, Associate Professor

Koshanova M.D.; candidate of pedagogical sciences, associate professor Sedova E.A.

The defense took place on July 01, 2022.

The following new and reliable results were obtained in the work:

- the role and significance of the theory of probability and elements of mathematical statistics in the content of the course of mathematics, the stages of historical formation, features of the structure and content are determined;

- the continuity in the teaching of the elements of statistics in mathematics of elementary and secondary levels was determined;

- developed a methodology for organizing training in elements of probability theory and statistics on the updated content of education, a methodology for the formation of probabilistic and statistical knowledge of students in grades 5-9.

2) the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.

The topic of the dissertation work and the idea of the research Turganbayeva Zh.N. meets the requirements aimed at solving the priorities and tasks specified in the Law of the Republic of Kazakhstan "On Education", the strategic development plan of the Republic of Kazakhstan until 2025, the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, the national project "Quality Education" Educated nation", the state obligatory standard of education and other state regulatory and legal documents regarding the development of the Kazakhstani education system and improving the quality of training of competitive specialists.

3) analysis of the level of implementation of the results of dissertations in practice.

A methodology has been developed for teaching the elements of stochastics in the course of mathematics of grades 5-6 and algebra of grades 7-9 (dividing the theoretical material of the three components of the stochastic line into meaningful modules, using these modules in the process of studying the traditional content of the mathematics course, breaking down typical stochastic problems).

The theoretical provisions and methodological recommendations formulated in the dissertation on the formation of probabilistic-statistical thinking of schoolchildren and the organization of educational activities can be effectively used by teachers to improve the quality of knowledge, skills and abilities of students. The results of the study are recommended to be used to improve the content and methodology of teaching stochastics in primary school, as well as in the study of stochastics by students.

According to the dissertation of Yerzhenbek Bulbul:

1) analysis of the topics of the considered works:

Dissertation topic – Methodological features of teaching energy based on continuity in a high school physics course will be discussed.

Specialty: 6D011000 - Physics.

Scientific consultants – Candidate of pedagogical sciences, senior lecturer

Sydykova Zh.K.; doctor of pedagogical sciences, professor Mambetkunov E.M.

The defense took place on July 01, 2022.

The following new and reliable results were obtained in the work:

- the content of the concept of energy, its practical significance and intra-subject continuity between various sections of the course of physics and between classes were revealed;

- developed a system of exercises and experimental tasks (laboratory and practical work) aimed at implementing continuity in teaching energy in secondary school;

- the stages and ways of teaching energy on the basis of continuity in the course of physics in high school have been identified, a methodology has been developed and its effectiveness has been tested in the course of a pedagogical experiment.

2) the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.

The topic of the dissertation work and the idea of the research Yerzhenbek Bulbul meets the requirements aimed at solving the priorities and tasks specified in the Law of the Republic of Kazakhstan "On Education", the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, the national project "Quality Education" Educated Nation", the state obligatory standard of education and other state regulatory and legal documents regarding the development of the Kazakhstani education system and improving the quality of training of competitive specialists.

3) analysis of the level of implementation of the results of dissertations in practice.

Interdisciplinary continuity between classes and sections of the school physics course was revealed. The stages and ways of implementing continuity in teaching energy in high school are determined. A system of exercises and experimental tasks (laboratory and practical work) aimed at implementing continuity in teaching energy in secondary school has been developed. A methodological manual on the course of physics for grade 7 has been introduced into the educational process based on the updated content of education.

According to the thesis of Zykrina Symbat Zhumabaevna:

1) analysis of the topics of the considered works:

Dissertation topic – The role of Internet technologies in the criteria-based assessment of mathematical knowledge of secondary school students.

Specialty: 6D010900 - Mathematics.

Scientific consultants – Doctor of Pedagogical Sciences, Professor Kozhabaev K.G.; doctor of pedagogical sciences, professor Dalinger V.A.

The defense took place on December 22, 2022.

The following new and reliable results were obtained in the work:

- the meaning and purpose of knowledge assessment, including criteria-based assessment, its place, role and principles in modern educational conditions are

determined;

- popular Internet technologies used in the course of teaching mathematics were selected, with the help of which the requirements for the organization of criteria-based assessment were determined;

- developed a methodology for the use of Internet technologies in the criteria-based assessment of mathematical knowledge of students;

- the results of the research work are verified and proven in the experimental work, the recommendations are included in the educational process.

2) *the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.*

The topic of the dissertation work of Zykrina S.Zh. is connected with the implementation of the Law of the Republic of Kazakhstan "On Education", the state program for the development of education and science of the Republic of Kazakhstan for 2020-2025, the national project "Quality Education "Educated Nation", state obligatory standards of basic secondary and general secondary education, Message of the First President of the Republic of Kazakhstan N .A. Nazarbayev and Head of State Kassym-Jomart Tokayev to the people of Kazakhstan.

3) *analysis of the level of implementation of the results of dissertations in practice.*

Based on the results of the study, a comparative analysis of popular Internet technologies used in teaching mathematics was carried out, requirements for use were determined, and a methodology for using Internet technologies in criteria-based assessment in primary school was prepared. A system of exercises and experimental tasks aimed at the use of Internet technologies in the criterion-based assessment of mathematical knowledge of primary school students has been developed. An electronic methodological manual and guidelines for mathematics teachers have been developed and included in the educational process.

According to the dissertation of Yerkisheva Zhazira Sabyrovna:

1) *analysis of the topics of the considered works:*

Dissertation topic – Methodics of the formation the financial literacy of secondary school students through teaching word problem solving.

Specialty: 6D010900 - Mathematics.

Scientific consultants – Doctor of pedagogical sciences, Professor Mubarakov A.M.; candidate of Physical and Mathematical Sciences, Associate Professor Nazarova K.Zh.; doctor of pedagogical sciences, professor Baysalov D.U.; Doctor of Physical and Mathematical Sciences, Professor, Academician of the Russian Academy of Education, Academician of the Russian Academy of Sciences Semenov A.L.

The defense took place on December 22, 2022.

The following new and reliable results were obtained in the work:

- clarified the essence of the concepts of "functional literacy", "financial literacy", the place and significance of text tasks and their classifications, as a

means of forming students' financial literacy in the process of teaching mathematics;

- a methodical system for the formation of financial literacy of students in teaching mathematics, that is, its structural components, has been identified;

- a methodology has been developed for teaching textual problems of financial and economic content in secondary school classes, aimed at developing the financial literacy of students;

- the results of the research work are verified and proven in the experimental work, the recommendations are included in the educational process.

2) *the connection of the topics of dissertations with the directions of development of science, which are formed by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan in accordance with paragraph 3 of Article 18 of the Law "On Science" and (or) state programs.*

The topic of the dissertation work and the idea of the research Yerkisheva Zh.S. meets the requirements aimed at solving priorities and tasks related to the development of the Kazakhstani education system, with improving the quality of training of competitive specialists, and reflected in the Law of the Republic of Kazakhstan "On Education", in the Strategy "Kazakhstan-2050", in the concept of developing financial literacy of the population of the Republic Kazakhstan for 2020-2024, in the state program for the development of education and science in the Republic of Kazakhstan for 2020-2025, in the national project "Quality Education" Educated Nation", in the state obligatory standards of basic secondary and general secondary education, and in other state regulatory-legal documents.

3) *analysis of the level of implementation of the results of dissertations in practice.*

A methodology has been developed for teaching textual problems of financial and economic content in secondary school classes, aimed at developing the financial literacy of students. The textbook "Karzhylyk esep-teu negizderi" was developed and included in the educational process. Guidelines for teaching students to solve text problems of financial and economic content and organizing educational activities in the process of teaching mathematics can be effectively used by mathematics teachers in their practice to form the functional and financial literacy of students.

5. Analysis of the work of official reviewers (with examples of the most low-quality reviews).

Reviewers approved scientists who made a significant contribution to research in the field of mathematics and physics, the theory and methods of teaching mathematics and physics. When selecting reviewers, the principle of independence of scientific consultants and reviewers was observed.

The reviews of the reviewers noted the evidence-based theoretical and practical results of the study, the conclusions were sufficiently reasoned, and comments and suggestions on the work were given. Basically, the comments relate to individual shortcomings that do not affect the overall scientific and theoretical content and practical results of the study. There were no negative reviews on the

