

UDC 37:51+929

THE SCIENTIFIC AND PEDAGOGICAL CONTRIBUTION OF DINARA EMENOVNA KANETOVA IN THE MODERN EDUCATIONAL SPACEVenera Erkinbekovna Anarbekova¹¹Jalal-Abad International University, Jalal-Abad, Kyrgyzstan**Abstract**

This article presents a systematic study of the scientific, pedagogical, and organizational activities of Dinara Emenovna Kanetova, Candidate of Physical and Mathematical Sciences and Associate Professor, in the context of the contemporary educational space. The study analyzes the key stages of her professional development, her many years of experience in higher education, her contribution to the development of topology, and her practical work aimed at improving the educational process through digital technologies. Special attention is given to the theoretical significance, scientific novelty, and methodological value of her research on uniform structures, topological spaces, topological groups, and their mappings. The article also substantiates D.E. Kanetova's role in managing the quality of higher education, introducing automated information systems, improving educational and methodological support, and expanding international scientific cooperation. Her multifaceted profile as a scholar, educator, administrator, and public intellectual is assessed in accordance with the requirements of the modern academic environment, and her contribution to the development of national science and education is summarized.

Keywords: Dinara Emenovna Kanetova, scientific and pedagogical activity, higher education, physical and mathematical sciences, teaching methodology, digital technologies, science, mentorship, quality of education

НАУЧНО-ПЕДАГОГИЧЕСКИЙ ВКЛАД ДИНАРЫ ЕМЕНОВНЫ КАНЕТОВОЙ В СОВРЕМЕННОЕ ОБРАЗОВАТЕЛЬНОЕ ПРОСТРАНСТВОВенера Эркинбековна Анарбекова¹¹Жалал-Абадский Международный Университет, Жалал-Абад, Кыргызстан**Аннотация**

В данной статье представлено систематическое исследование научно-педагогической и организационной деятельности Динары Еменовны Канетовой, кандидата физико-математических наук и доцента, в контексте современного образовательного пространства. В исследовании анализируются ключевые этапы ее профессионального развития, многолетний опыт работы в высшем образовании, вклад в развитие топологии и практическая работа, направленная на совершенствование образовательного процесса с помощью цифровых технологий. Особое внимание уделяется теоретической значимости, научной новизне и методологической ценности ее исследований однородных структур, топологических пространств, топологических групп и их отображений. В статье также обосновывается Д.Е. Канетовой в управлении качеством высшего образования, внедрении автоматизированных информационных

систем, совершенствовании учебно-методического обеспечения и расширении международного научного сотрудничества. Оценивается её многогранный профиль как учёного, педагога, администратора и общественного деятеля в соответствии с требованиями современной академической среды, а также обобщается её вклад в развитие национальной науки и образования.

Ключевые слова: Динара Еменовна Канетова, научно-педагогическая деятельность, высшее образование, физико-математические науки, методика преподавания, цифровые технологии, наука, наставничество, качество образования

© 2026. The Authors. This is an open access article under the terms of the Creative Commons Attribution 4.0 International License, CC BY, which allows others to freely distribute the published article, with the obligatory reference to the authors of original works and original publication in this journal.

The development of the modern education system requires the integration of science and practice, pedagogical mastery, and contemporary technologies. In this context, the experience of individuals distinguished by their research achievements, teaching excellence, and administrative leadership acquires particular importance. Dinara Emenovna Kanetova, Candidate of Physical and Mathematical Sciences and Associate Professor, belongs to this group of scholar-educators.

In examining the contribution of the honoree to science and education over the course of her fifty-year life path, as well as her personal and professional profile, seven main dimensions may be identified.

Early Career

Dinara Emenovna Kanetova's professional career began during her student years at Jalal-Abad State University, the institution where she received her education. She worked at the Department of Automated Control Systems as a laboratory assistant (1993–1997), trainee lecturer and software engineer, lecturer (2009–2015), AVN administrator at JASU (2009–2015), academic secretary of the Institute of Energy Resources and Geoecology of the Southern Branch of the National Academy of Sciences of the Kyrgyz Republic (2013), researcher of the Southern Branch of the National Academy of Sciences of the Kyrgyz Republic (from 2019), Head of the Department of Information Technologies and Computer Maintenance at the Research Medical and Social Institute (2020–2023), and Head of the Academic Information Department at the Central Asian International Medical University (2023–2025). Since 2025, she has been productively working at Jalal-Abad International University as Head of the Academic Information Department and Head of the Department of Humanities and Natural Sciences. Thus, her professional career has been shaped through her work in educational and scientific institutions such as Jalal-Abad State University, structures of the National Academy of Sciences, the Research Medical and Social Institute, the Central Asian International Medical University, and Jalal-Abad International University.

A Highly Qualified Specialist

She successfully graduated from Jany-Dyikan Secondary School in Suzak District in 1993 with a gold medal, becoming the first medalist in the history of the school. She subsequently obtained basic higher education in Informatics and Computer Engineering (1993–1997) and later qualified as a software engineer specializing in automated systems (1999–2000). From 2001 to 2005, she studied in the postgraduate program of Jalal-Abad State University. In 2020, she completed professional retraining and advanced training at the Moscow Institute

for Professional Retraining and Advanced Training of Teachers in the Russian Federation, specializing in the teaching of geography in educational organizations.

Contribution to the Science of Topology

On October 30, 2020, under the supervision of Doctor of Physical and Mathematical Sciences, Professor, Academician Altay Asylkanovich Borubaev, she successfully defended her dissertation for the degree of Candidate of Physical and Mathematical Sciences in the specialty 01.01.04 — Geometry and Topology, on the topic “Uniform Structures on Spaces and Groups” [1]. The dissertation was written within the field of set-theoretic topology. The objects of the research were topological spaces, uniform spaces, topological groups, and their mappings. The main purpose of the dissertation was to characterize important properties of topological spaces, topological groups, and their mappings through uniform structures. In other words, the author explained and substantiated a number of fundamental properties of spaces and groups not directly, but through the use of uniform structures.

The following scientific concepts occupy a central place in the study:

- uniform structure;
- topological group;
- extensions of Tychonoff spaces;
- perfect mapping;
- quasi-perfect mapping;
- ω -mapping.

The conceptual core of the work is formed by the following ideas:

- the characterization of certain compactness properties of topological and uniform spaces;
- the analysis of their completeness properties;
- the construction of various extensions of Tychonoff spaces through uniform structures;
- the examination of the properties of spaces and groups in relation to their continuous and uniformly continuous mappings.

Thus, the main scientific novelty of the dissertation lies in the new characterization of important properties of topological spaces and groups on the basis of uniform structures and in the construction of extensions on this foundation. The research demonstrates its applicability to the theory of topological spaces, the theory of continuous mappings, the theory of uniform spaces, and the theory of topological and uniform groups. She is regarded as the second female scholar in southern Kyrgyzstan to have made a contribution to topology.

Contribution to the Higher Education System

Throughout her many years of work in higher education, Dinara Emenovna has continuously sought to provide students with high-quality education and appropriate moral and intellectual guidance. Her monograph “Architecture of Higher Education Process Management: From Formal Compliance to Managed Quality” (Jalal-Abad, 2026, 241 pages) [2], prepared at Jalal-Abad International University, may be characterized as a timely, professionally written, and scientifically significant study that addresses an important gap in the literature on quality management in higher education. Drawing on the author’s more than thirty years of practical experience, the monograph proposes concrete mechanisms for moving from “paper-based quality” to a genuinely manageable and reproducible educational process.

First, the work is distinguished by a high level of conceptual integrity. The “architectural approach” proposed by the author is not merely a modern term, but a coherent methodology that makes it possible to identify and eliminate systemic gaps in management. Second, the

monograph takes into account the specific features of medical education, including clinical training, simulation-based learning, OSCE structures, the evidentiary basis of clinical competencies, and their relationship to patient safety. Third, the practical value of the work deserves special emphasis. It contains ready-to-use tools such as diagnostic tables, RACI matrices for the distribution of responsibilities, templates for analytical reports, CAPA cards, self-assessment checklists, and a twelve-month implementation roadmap. Accordingly, the monograph is not only a theoretical study but also a practical guide for university administrators, academic and methodological departments, and specialists engaged in quality management. Fourth, the monograph demonstrates the author's strong understanding of international standards, including ISO 9001, ISO 21001, ESG, and WFME, and integrates these standards with principles such as process-based management, data-driven decision-making, and continuous improvement. This confirms the relevance of the work not only for Kyrgyzstan but also for the broader post-Soviet academic space. The glossary, appendices, and extensive use of contemporary literature further demonstrate the author's high level of academic culture. Fifth, the monograph makes a substantial contribution to the theory and practice of higher education management. It can be effectively used in internal audits, institutional self-assessment, the design and renewal of educational programs, preparation for licensing and accreditation procedures, and professional development programs for managerial staff.

In addition, her contribution to the implementation of fully automated information systems in the educational process should be emphasized. This includes her work with AVN at Jalal-Abad State University and her leadership of the Academic Information Departments at the Central Asian International Medical University (Research Medical and Social Institute) and Jalal-Abad International University, where the eBilim platform was introduced into the management of the educational process. At the same time, she actively participates in and organizes the development of regulations aimed at improving the educational process and education quality, as well as the preparation of textbooks, methodological guidelines, and educational and methodological materials for students.

Scientific Activity

Dinara Emenovna Kanetova's scientific activity is broad and multifaceted. She is the author of 50 scientific articles. Of these, 12 articles have been published in journals indexed in the Scopus database and classified within the Q1, Q2, Q3, and Q4 quartiles. In addition, one of her key scientometric indicators, the Hirsch index, reflects a high level of academic visibility. This demonstrates that her research occupies a recognized place in the contemporary academic environment.

For example, in 2022, together with her brother Bekbolot Kanetov, she took part in the 13th major international symposium on topology, TOPOSYM 2022, held in Prague, Czech Republic, on July 24–29. This symposium has been held in Prague every five years since 1961. At the conference, she presented a paper entitled "On μ -Completeness of Uniform Spaces and Uniformly Continuous Mappings" [3], which attracted significant interest. Mathematicians from Mexico, Russia, Korea, the United States, and Israel who work in this field expressed positive views on the topic. During the symposium, Associate Professor D.E. Kanetova exchanged ideas with Professor A. Leiderman of Ben-Gurion University (Israel), Professor O. Sipacheva of Moscow State University (Russia), Professor S. Antonyan of the National Autonomous University of Mexico, Professor Marek Hušek of Charles University (Czech

Republic), and other scholars; with some of them, she discussed the possibility of preparing joint scientific articles and monographs.

She also participated for a second time in the international scientific conference “Analysis, Topology and Applications” (ATA 2022), organized by the universities of Kragujevac, Belgrade, and Niš in Vrnjačka Banja, Serbia, on June 27 – July 4, 2022. At this conference, she delivered two scientific presentations entitled “About Uniformly Menger Space” [4] and “Index of Sequential Completeness of Uniform Spaces and Uniformly Continuous Mappings” [5]. The presentation “About Uniformly Menger Space” generated particular interest among researchers, since it concerned a problem formulated in 2003 by Professor L.D.R. Kočinac of the University of Niš, one of the leading mathematicians in the field. The problem required demonstrating that the uniform Menger, Hurewicz, and Rothberger properties are distinct within the theory of selection principles. In the presentation, the solution to this problem was explained in detail and supported with counterexamples. As a result, both papers were recommended for publication in the Kragujevac Journal of Mathematics, indexed in Scopus and having an impact factor of $IF = 0.68$. Thus, together with her brother, Professor Bekbolot Emenovich Kanetov, she has continued to participate annually in theoretical and practical scientific conferences of international standing, contributing to the visibility of Kyrgyz scholarship on the world stage.

Another scientific achievement is her co-authored paper with her scientific consultant, Academician A. Borubaev, entitled “On Completions of Ordered Uniform Spaces” [6], which was presented and published within the framework of the 2nd, 3rd, 4th and 6th International Conference of Mathematical Sciences (ICMS 2022), held in Istanbul, Turkey, on July 20–24, 2022. This work focuses on theoretical problems related to completions of ordered uniform spaces.

It would not be an exaggeration to state that Dinara Emenovna holds a leading position among scholars in exchanging experience and scientific ideas with many foreign researchers. This is confirmed by her personal participation, direct academic communication, scientific presentations, and publications in Kazakhstan (Turkestan) [7], Greece (Nafpaktos) [8], Serbia (Vrnjačka Banja) [9], North Macedonia (Ohrid) [10], and Germany (Munich).

Professional Experience

In her pedagogical work, she is a professional educator who successfully combines traditional teaching methods with modern digital tools. She works at a professional level with information technologies, web applications, databases, computer graphics, artificial intelligence platforms, Google Classroom, GIS technologies, and digital instruments used in education. This profile is particularly relevant in today’s educational environment. Various certificate programs, trainings, and international courses have also played an important role in Dinara Kanetova’s professional development. These include programs on the development of critical thinking, the creation of electronic textbooks, quality assurance in education, accreditation, interactive teaching, the use of innovative and digital technologies in medical education, and the application of artificial intelligence. Such continuous self-development confirms her status as an innovative, flexible, and future-oriented educator.

Alongside her scientific and pedagogical work, Dinara Kanetova is also recognized as a leader with strong organizational abilities. She has held responsible positions in departmental work, academic information units, the field of information technologies, and administrative structures of higher education institutions, consistently demonstrating high-level organizational, managerial, and leadership qualities. This confirms her substantial

experience in the effective organization, management, and development of the education system. The recognition of her professional and public activity through awards, certificates of appreciation, and diplomas at various levels is the result of many years of productive work.

A Caring Mother, Supportive Spouse, Reliable Friend, and Person of High Moral Culture

While Dinara Emenovna is widely known in her professional life as a scholar, mentor, and leader, in family life she is also respected as a devoted spouse who, together with her husband Zamir, embodies harmony, care, and family values. She is a loving mother who has raised her daughters Cholponai, Aisezim, and Akylai with dignity, and she is highly respected as a woman who brings warmth and stability to her home. At the same time, she is a reliable friend to those close to her and a person distinguished by sincerity, kindness, modesty, generosity, and high cultural standards. These personal qualities complement and enrich her image as a scholar and educator.

References

1. Kanetova, D.E. Uniform Structures on Spaces and Groups: Author's Abstract of the Dissertation. Bishkek, 2020. [In Russian].
2. Kanetova, D.E. Architecture of Higher Education Process Management: From Formal Compliance to Managed Quality. Jalal-Abad, 2024. 241 p. [In Russian].
3. Kanetova, D.E.; Kanetov, B.E.; Sharshembieva, F.K. On μ -completeness of uniform spaces and uniformly continuous maps. In Toposym 2022: Book of Abstracts. Prague, 2022. P. 75.
4. Kanetov, B. About Uniformly Menger Space. In Analysis, Topology and Applications 2022 (ATA 2022): Conference Programme. Novi Sad, 2022.
5. Kanetova, D. Index of sequential completeness of uniform spaces and uniformly continuous mappings. In Analysis, Topology and Applications 2022 (ATA 2022): Conference Programme. Novi Sad, 2022.
6. Kanetova, D.E.; Borubaev, A.A. On completions of ordered uniform spaces. In 6th International Conference of Mathematical Sciences (ICMS 2022), 20–24 July 2022, Istanbul, Turkey: Abstract Book. Istanbul, 2022.
7. Borubaev, A.; Kanetova, D. On countably paracompact extensions. In VII World Congress of Mathematicians of the Turkic World (TWMS Congress 2023). Turkestan, 20–23 September 2023.
8. Borubaev, A.; Kanetova, D.; Tampagarov, K. Construction of the set of all (μ) -paracompact and close to them extensions by uniform structures. In 2023 International Conference on Topology and its Applications, July 3–7, 2023, Nafpaktos, Greece: Book of Abstracts. 2023. P. 45.
9. Kanetova, D. About compactness types of uniform spaces. In Analysis, Topology and Applications 2024 (ATA 2024), June 29 – July 03, 2024, Vrnjačka Banja, Serbia. 2024.
10. Kanetova, D.; Beknazarova, M.; Zhusupbekova, E. About compactness type of uniform spaces and uniformly continuous mappings. In International Conference on Topology, Analysis and Applications (TAA 2025), September 4–7, 2025, Ohrid, North Macedonia: Book of Abstracts. 2025. P. 25.

Received / Получено 22.01.2026

Revised / Пересмотрено 12.03.2026

Accepted / Принято 20.03.2026