# МАТЕМАТИКА И МАТЕМАТИЧЕСКО ОБРАЗОВАНИЕ, 2019 MATHEMATICS AND EDUCATION IN MATHEMATICS, 2019 Proceedings of the Forty-eighth Spring Conference of the Union of Bulgarian Mathematicians Borovetz, April 1–5, 2019

## MATHEMATICAL EDUCATION IN THE REPUBLIC OF MOLDOVA

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In fundamental mathematical research, there can't be a definitive finalization and, at the same time, a definitively established beginning that could serve as the absolute starting point of teaching.

Felix Klein

This study is a qualitative review of the history of mathematics education in Moldova. A brief historical overview of the teaching and learning of mathematics in Europe and USA in the 20th century is made. We consider the development of the didactics in mathematics in Romania and Moldova and identified some problems of the mathematical education in the Republic of Moldiva.

**Introduction.** The need for education emerged with the birth of the first civilizations. None of the civilizations could have existed without a specific system of education and preparation of the younger generation for life in the society. The study of forms and the need of measuring quantities and determining the number of elements of a certain nature became the basis of the primary mathematical education. The formal separation of "one" and "many" was unsatisfactory: it was necessary to distinguish between different types of "many". For example, five fish and ten fish make up "many" fish, but ten fish make up "more" than five fish.

Certain information about the history of mathematical education can be extracted from the history of pedagogy. In order to educate the younger generation, even in deep antiquity, various forms of education developed, specific types of schools and a system of educational institutions appeared. The philosophers of Antiquity formulated ideas and concepts for the education and training of youth. In Athens, children of 4–5 years old were under the supervision of a slave – teacher (from Greek  $\pi\alpha\iota\delta\alpha\gamma\sigma\gamma\sigma\varsigma$  – a tutor i.e. a guardian and guide of boys). Among the Greeks and the Romans, the name was applied to trustworthy slaves who were charged with the duty of supervising the life and morals of boys belonging to the better class. Translated from the Greek " $\nu\alpha$   $\pi\alpha\iota\delta$ " means "child", " $\alpha\gamma\omega$ " – "to conduct". Later, the word " $\pi\alpha\iota\delta\alpha\gamma\sigma\gamma\sigma\varsigma$ " acquired the meaning of "leading a person through life" and began to denote the profession of a mentor and teacher. From the age of 7, children went to school. Education lasted from 7 to 16 years 50 and included literature, art and science, which were, according to Greek mythology, under the auspices of the muses. The ancient Greek philosopher, scientist and encyclopedist Democritus (460–370 BC. E.) proposed a detailed theory of knowledge. In knowledge, he singled out two types of knowledge: sensory-based and rational knowledge. The sensory experience lies at the root of rational knowledge.

For the first time in the history of pedagogical thought, Democritus expressed an imperative about the need to conform education and development with the inner nature of a child (principle of nature conformity). One of the pioneers of dialectics, the ancient Greek philosopher Socrates (470–399 BC), defined the goal of education not as mastering a set of long-established moral norms and moral rules, but as the development of human mental abilities. According to Socrates, each person must comprehend such truths as loyalty, honesty, truthfulness, honor, friendship, wisdom. The pupil of Socrates, the philosopher Plato (427–347 BC) founded the Athenian School of Philosophy - the Academy and preached comprehensive education there. Plato's pedagogical ideas are inextricably linked with his philosophical doctrine of a special intellectual world - the world of ideas.

According to the philosopher, the goal of education is the development of knowledge comprehending the harmony between reality and the creative ideas, inherent in man.

Thus, in pedagogy, for the first time, the problem of factors influencing the development of a personality was posed. The largest philosopher of Antiquity, the founder of Likea, Aristotle (384–322 BC), considered that the main task of general education is to provide students with fundamental unspecialized knowledge. Aristotle continued to study the problem of factors affecting human development and identified three of their main groups: external (outside world), internal (forces developing skills) and purposeful education. The purpose of education is the development of the soul, which, according to Aristotle, has three types: growing (nutrition, reproduction), animal (sensations, desires) and reasonable (thinking, cognition). Thus, the very nature of the soul requires a comprehensive development, taking place in the unity of moral, physical, aesthetic and mental education.

1. An overview on the development of the research area. To expand and systematize knowledge on the subject of mathematical education history, we conducted a field analysis.

In education, it is recognized that diverse knowledge/evidence types are required to be applied, and, for this reason, comprehensive systematic review methods have been formulated to explore the evidence on the effectiveness of interventions ("knowing what"), of the education policy ("knowing how much") and also evidence related to subjective human experiences, culture, values, ethics, or the accepted discourse at the time of practice ("knowing how").

The study is a qualitative review of the history of mathematics education in Moldova. To answer the questions, we intended to identify relevant literature on the history of mathematical education: books, journal articles, conference proceedings, reports, websites, and other sources.

Studies on the history of teaching and learning mathematics were published as early as the 19th century in Germany, France, USA, Denmark, Finland etc.

From the beginning of the 20th century, it is remarkable that the first doctoral theses defended in the USA in mathematics education were studies on the history of teach-

ing mathematics (Jackson 1906; Stamper 1909). A new wave of Germans researches was also partially due to the initiatives of Felix Klein in reforming mathematics teaching, promoted by him as president of IMUK (Internationale Mathematische Unterrichts-Kommission), founded in 1908. After this event, many studies were undertaken within the history of some nation or some culture. Studies have been referring to the respective traditions, methodologies and approaches to national educational history.

During the next period, the focus has changed to address comparative and international issues in this area of research. Three issues of comparative international research were proved as particularly revealing:

the change of mathematics from a marginal teaching subject to a major discipline;
the emergence of Mathematics for all as a program and as a major shift in sociopolitics of education;

- the role of mathematics in the modernization of various states and thus showing the social relevance of mathematics [4].

"Any change in the programs", said, with humor, Émile Borel (1871–1956) at the Paris Congress of 1914 "must fail or at least appear to fail because the teachers cannot at first develop a teaching technique equally good for new subjects, as was the traditional technique for the old ones". But the counterpart of this pessimistic observation is no less accurate: "if it is true that the essential thing in secondary education is not so much the program as the method, any change in programs must ultimately give good results, after the appropriate methods for new subjects have been created" [5].

The international reform movement after 1958, superseding the already ongoing local reform of the various countries, constituted an unprecedented way of reforming processes, which had indeed been a concerted action, while the general concepts kept pace in a large number of countries. In addition, provoked by its political system, usually coined by the Sputnik shock, the West has consciously undertaken the action to decisively modernize its education systems to meet this challenge.

A first book on geometry teaching in Finland is from 1945, Jushkevich published in 1947 and 1948 a series of papers on mathematics teaching in Russia, from the 17th to the 19th century. A book by Prudnikov on Russian mathematics educators in the 18th and 19th centuries followed in 1956. Two volumes published in 1970 by the NCTM, the mathematics teachers association of the United States had an important impact, thus giving institutional promotion to this field of study. From the 1980s, one remarks a rather continuous flow of publications, regarding ever more countries. Series on mathematics education coordinated by Mogens Niss (Roskilde University, Denmark), Lee Peng Yee (Nanyang Technological University, Singapore), Jeremy Kilpatrick (University of Georgia, USA) were published last years. Research in the history of mathematics education became now a rapidly developing area.

2. Pages from the history of the development of mathematical education in Romania and the Republic of Moldova. The following historical events mainly influenced the evolution of the development of mathematical knowledge in the Republic of Moldova:

– In 1634, The Vasilian Academy was founded by the sovereign Vasile Lupu in Iasi, also called the "Great Princely School", a higher education institute in Moldova, modeled according to the Kiev Mohyliv Academy (created by the metropolitan Petru Movilă);

– In 1707, Antioch Cantemir, during the reign of Nicholas Mavrokordat, founded the 52

Princely Academy of Iaşi, which operated until 1821;

– In 1795, the first mathematical book in Romania was published in Iasi: Amfilohie Hotiniul (Amphilochius Hotinul), a Romanian educator, Bishop of Hotin, who defended the replacement of Greek in education with Romanian;

– In 1828 the Princely Academy of Iasi was renamed into "Gimnaziul Vasilian" ("Vasilyan College"), which operated until 1835. Then, between 1835 and 1847, "Academia Mihăileană" (Mihaileana Academy) was founded under the rule of Michael Sturdza thanks to the efforts of Gheorghe Asachi and Effimie Murgu and other Romanian scientists of the time. This Academy is the forerunner of the Iasi University and Iasi National College;

- In 1860, the Sovereign Al. I. Cuza (Alexander Ioan Cuza) signed a decree establishing the University of Iasi, and in 1864 - the University of Bucharest;

– In 1866, on April 1, the Academia Română (Romanian Academy) was founded as a symbol of spirituality, a forum of devotion, a space for basic research;

- From January 15, 1883 to December 1888, the journal "Recreații Științifice" (Scientific Recreations) was published in Iasi, with the aim of providing scientific education to young people;

– In 1895 "Gazeta Matematică" (Mathematics Magazine) was created in Bucharest;

- In August 31, 1909, at a meeting, taking place in the villa of Professor Ion Ionescu-Bizet (Ion Ionescu-Bizet), it was decided to establish, from September 1, 1909, the cultural and scientific Society of the "Gazeta Matematică";

– In 1958 the Laboratory of Mathematical Research was established at the branch of the Academy of Sciences of the USSR in Moldova;

- In July 1960, it was decided to establish the Academy of Sciences of Moldova;

– In March 1961, the Institute of Physics and Mathematics was established at the Moldavian branch of the USSR Academy of Sciences;

- The Academy of Sciences of Moldova was established on August 1, 1961;

– In 1964 the Institute of Mathematics and Computer Science of the Academy of Sciences of Moldova was established [2, 5, 6, 7, 10].

Until 1940, young people from the historical region of Bassarabia studied at universities in Russia, Romania, France, Germany and other countries.

After 1917, residents from the eastern part of Moldova studied at The Tiraspol State Pedagogical Institute and in the universities of the Soviet Union. Several famous mathematicians are born in eastern Moldova:

Leonid Petrovich Kapitsa (1864–1919) – Major General of the Corps of Engineers, born in Bessarabia, Orhei. His son – Kapitsa Peter Leonidovich (1894–1984) – Soviet physicist, engineer, innovator, a prominent organizer of science, the founder of the Institute for Physical Problems and one of the founders of the Moscow Institute of Physics and Technology, winner of the Nobel Prize;

Israel Moiseevich Gelfand (August 20 [September 2] 1913, Okny, Tiraspol County – October 5, 2009, New Brunswick, New Jersey) – one of the greatest mathematicians of the 20th century, biologist, teacher and organizer of mathematical education (until 1989 – in the Soviet Union after 1989 – in the United States);

Boris Avraamovich Trakhtenbrot (February 20, 1921, Brichevo, Soroka – September 19, 2016, Rehovot, Israel) – Soviet and Israeli mathematician in the field of mathematical logic, theory of algorithms and cybernetics. Doctor of Physical and Mathematical

Sciences (1962), Professor (1963);

Abram Aronovich Stolyar (February 20, 1919, Tarutino, Bessarabia, May, 1993, Moscow) is a Belarusian Soviet teacher-methodologist known for his work on the development of the logical thinking of schoolchildren, Doctor of Education (1970), Professor;

Galbură, Gheorghe – Romanian mathematician, originalte from Trifesti, Rezina; Gheorghiev, Gheorghe – Romanian mathematician, originally from Bolgrad;

Gohberg, Israel – Israeli and American mathematician (n.1928) in Tarutina, Cetatea Albă, Southern Bessarabia;

Grebencea, Mihail – Soviet and Russian mathematician, originally from Mălăiești, Transnistria;

Grebenikov, Eugen – Russian mathematician and astronomer, from Slobozia Mare, Cahul

Lerer, Leonid – Israeli mathematician born in Bessarabia;

Mangeron, Dumitru – Romanian mathematician, born in Chisinau;

Kondurar, Vladimir – a mathematician and Soviet and Ukrainian astronomer, born in Madreştii Noi (Balti County);

Neyman, Jerzy – mathematician and American statistician, originally from Tighina (Bender);

Retakh, Vladimir (n.1948 -) American mathematician, born in Chisinau;

Rotaru, Vladimir – Russian mathematician and economist;

Varzar, Vasile (Varzer) – Russian statistician, economist and mathematician, from Moldova [2].

**3.** Didactics of mathematics in the soviet period. The first initiatives, aimed at the consolidation of mathematics and education of young people, relate to the founding of the journal Foaia Matematică (Mathematical Paper) in 1925, in Chisinau, and opening in 1930 of the Tiraspol State Pedagogical Institute (nowadays - the Tiraspol State University). For the organization of the educational process in the postwar period, an invaluable contribution was made by Konstantin Spataru, Makary Radu, Artem Lazarev. The first studied at the University of Iasi and the other two – at the Tiraspol Pedagogical State Institute. It is noteworthy that in the most difficult time, with the terrible famine and cold of the winter of 1947, the first city mathematical Olympiad was organized in Chisinau. Its organizer was Konstantin Spataru. Since 1956, on his initiative, republican competitions have been held annually.

Until 1992, in the Soviet Union, the only scientific centers on methodology of teaching mathematics were: Academy of Pedagogical Sciences, Moscow State Pedagogical Institute, Leningrad State Pedagogical Institute. Until the mid-50s there were many interesting studies. Then there was a lull until the 1980s. Basically, research was carried out on doctoral dissertations. The breakthrough began after 1980 thanks to the research of the new generation: Boltyansky V., Gusev V. A., Landa L.N., Davydov V. V., Ilyin, E. P., Rodionov M. A., Stolear A. A., Kolyagin Yu. M., Mishin V., Blokh A. Ya., Sarantsev G. I. and others [15, 16, 17, 18]. New scientific centers appeared in Minsk, Kiev, Kazan, etc.

In the Republic of Moldova, there were several experts in mathematics with academic titles and degrees:

– in Tiraspol: Glazer G. I., Antosyak I., Turlakova Z., Hariton A., Ramzaeva A., Gaydarzhi G..;

- in Balti: Petrushin P., Botsu V.;

- in Chisinau: Parno S., Lupu I. [9, 10, 14].

In 1986, Hariton A. received the title of professor, and in 1999, Lupu I. defended his second doctoral dissertation in Moscow and became a professor in 2000. Since 1971, Mitrofan Cioban became interested in the problems of mathematical education and history of mathematics. In 1976, he occupied the position of the head of the department of didactics of mathematics and geometry within Tiraspol State Pedagogical Institute.

4. Actual problems of didactics of mathematics in the Republic of Moldova. In 1998, a scientific seminar on mathematics education was founded within the Tiraspol State University.

The main objectives of the seminar were:

1. Analysis of school and higher education mathematics programs for their further improvement.

2. A comprehensive analysis of school textbooks in mathematics.

3. The organization of comprehensive research on the general and particular problems of the methodology of mathematics and, in particular, on the improvement of methods for assessing the knowledge of schoolchildren.

In the same year, the master's level of high education were initiated and, in 2002, doctoral programs as the third cycle of high education in mathematics, physics, biology, geography and in the methods of teaching the exact and natural sciences were opened within the Tiraspol State University.

In October 2004, the Tiraspol State University became a co-organizer of the international conference "The IX<sup>th</sup> Academic Readings. Science and education: Actual problems and development prospects" with the International Academy of Education and the Department of Science of the Republic of Moldova. The joint report of M. Choban, I. Lupu and A. Hariton "General problems of mathematics didactics" outlined the main areas of research. These general problems cause the following didactic problems in mathematical and computer disciplines [19]:

The interest in these issues is caused by the following reasons:

- the need for collaboration between specialists in the fields of mathematics, mathematics didactics and psycho-pedagogy;

- the current trend towards creating a unique European educational space;

– the need to preserve national traditions and heritage.

Some problems that remain current and insufficient investigated formulated, from the point of view of didactics of mathematics:

**Problem I.** Modernizing and improving curriculum in mathematical disciplines. Problem I generates the following three issues.

**Issue 1.** It is necessary to develop and introduce new educational standards in the

training of highly qualified specialists.

Issue 2. It is necessary to develop and improve the textbooks. School textbooks are to be tested experimentally on small samples. Subsequent changes are to be made taking into account the objectors' objections. And it is only afterwards that they have to be introduced in all educational institutions.

**Issue 3.** The process of training and retraining of highly qualified teachers needs to be rethought.

More research is needed to address the following issues.

**Problem II.** Elaboration and implementation of new educational technologies.

**Problem III.** Elaboration and implementation of information and communication technologies in mathematical education.

**Problem IV.** Studying the psycho-pedagogical peculiarities of learning mathematics.

**Problem V.** Elaboration of the forms, methods and resources appropriate for the achievement of differentiated education.

**Problem VI.** Reflection of new achievements in the field of mathematics in the training process.

**Problem VII.** The use of historical elements in the teaching of mathematics.

**Problem VIII.** Elaboration of sets of exercises, tests and methodical recommendations for teaching themes, modules and difficult compartments from math courses.

**Problem IX.** Creation of inter-university centers in the field of didactics and psychopedagogy of mathematics.

**Problem X.** Elaboration of teaching materials for university education with reduced and remote frequency.

The following requirements were presented for the research:

1. A systematic approach to the study of the educational process.

2. In each specific case, by virtue of the possibilities, it is necessary to build a psychological and pedagogical model of the process or object under study. At the same time, the model should have a conceptually integrating character.

3. Use modern teaching methods.

4. Solving problems in order to develop substantive motivation, the acquisition of knowledge skills, formation of relevant competencies.

For the sustainable development and improvement of the conditions on our planet it is necessary to mobilize the human capital to serve the education of the young generation and to identify efficient strategies by which the school at all levels supports and promotes performance in the fields of exact sciences and nature. It was the leitmotif that inspired the scientific-teaching staff of the Faculty of Physics, Mathematics and Information Technologies of the State University of Tiraspol to organize, between September 25-28, 2014, the International Scientific Conference entitled "Performance Education in the Curriculum Areas Exact Sciences and Natural Sciences. Objectives. Strategy. Perspectives".

The conference was attended by about 150 people, representatives of 15 universities from Moldova, Romania, USA, Ukraine, Bulgaria and Slovakia, 5 research institutes and over 30 pre-university education institutions from the Republic of Moldova and Romania. The program of the Conference included 2 plenary sessions, and the activities by the domains were conducted in 5 sections: 1. Current problems in the field of teacher training for working with the gifted pupils; 2. Strategies, policies, procedures for the identification of children capable of high performance; 3. Training and development of competencies of high-performing children; 4. Performance appraisal: concepts, theories, methods, ethical and social aspects; 5. Modern physics and didactics of physics.

Academicians Radu Miron (Romania) and Mitrofan Cioban analyzed the role of research in the educational phenomenon, formulating the following conclusions: Qualitative education is based on innovation and diversity and is result-oriented. To have a significant impact on the young generation, teachers need to have high culture and diverse interests. The university, and in particular the pedagogical university, must be a special educational institution, in which modern science and the involving of young students 56 in research are two aspects of the same activity based on democratic relations between teachers and students, on inspiration, innovation and responsibility towards the future of science. Based on these principles, we also need to build activities with talented children.

The communications presented at the Conference:

– promote new scientific results and advanced experience that reflects the development of differentiated and individualized teaching and learning theory and methodology based on the specificity of reason with different psychological and psychophysiological characteristics of pupils and students;

- demonstrate the openness of teaching staff to capitalize on new methods of teaching gifted students in the fields of exact sciences and nature;

- provide new strategies in teacher training for working with gifted and talented students;

- mention that the native educational system is oriented towards an "average learner", and most psycho-pedagogical research focuses on motivating students below this level, but lacking educational policies aimed at gifted and talented children.

As a result of the debates, the participants reiterated that it is absolutely necessary to involve the representatives of the Society of Mathematicians, the Physicians Society, the Society of Informatics of the Republic of Moldova, representatives of the main institutes of the Academy of Sciences, of the faculties of sciences in the elaboration of strategic documents for reforming the education, professional associations in industry, agriculture, services.

Pupils from Moldovan schools became involved in international competitions only after 1993. Great help in this was provided by Romanian mathematicians.

Contest	Gold medals	Silver medals	Bronze medals	Honorable mentions
International Mathematical Olympiad (1993–2010/2011–2015)	5/0	15/5	34/13	14/25
Balkan Mathematical Olympiad (1996–2010/2011–2016), seniors	11/1	21/5	37/30	13/7
Balkan Mathematical Olympiad (1998–2010/2011–2015), juniors	6/0	12/6	42/27	8/3

In the field of mathematical education, research has an applied character and is carried out in doctoral schools and within the scientific projects financed from the state budget.

The research topics are related to the nationally approved research and development of priority directions. Most of the investigations focus on solving general or particular didactics problems, including the creation of educational models to improve the educational process, while the results are validated experimentally.

During the period 2001–2018, 17 PhD theses were elaborated. The main problems examined in doctoral theses are:

Mathematical education in Moldova: from the 15th century until the beginning of the 20th century;

The optimal relationship between "intuitive" and "logical" in the teaching-learningevaluation of the topic "Parallelism and perpendicularity in space" (gymnasium stage);

Methodology of studying probability theory and mathematical statistics in gymnasium and high school; Methodology of studying analytical geometry using the computer;

The scientific and theoretical basis for the motivation of studying the gymnasium course of mathematics (based on elements of algebra);

Influence of contextual factors on the mathematical efficiency of students (4th and 8th grades);

Determination of the theoretical and methodological fundamentals of the efficiency of studying mathematics through active-participatory methods;

Theoretical and practical foundation of the pedagogical model for the development of professional competencies in computer science based on the optimal correlation of mathematical and computer content;

The methodology of studying mathematics in institutions with technological profile through new information technologies;

Systematic approach to the training of teachers for extra-curricular activities in mathematics;

The role of graphical representations in the efficiency of studying mathematics;

Differential training of problem-solving skills in primary school pupils;

Continuity in the formation of geometric representations at preschool and primary education levels.

The promotion of the results of scientific research in the field of mathematical education takes place within the scientific events where mathematicians, university professors, school teachers meet. Several international conferences organized in Universities and under the aegis of the Mathematical Societies of the Republic of Moldova and Romania in the last 25 years regularly include the Mathematical Education section.

At present, several scientific journals in the field of didactics and pedagogy are published in the Republic of Moldova: Acta et Commentationes; Studia Universitatis Mooldovaie; Științe ale Educației; Artă și educație artistică; Didactica Pro... and others.

The Acta et Commentationes journal is the successor of the Acta et Commentationes, Philological, Psychological, Pedagogical and Social Political Sciences series, and the "Annals of the State University of Tiraspol" addresses various problems in psycho-pedagogy, general pedagogy, the theory and methodology of education. In its pages, information and synthesis of the issues of the scientific community in the field of education and some aspects of the use of new teaching-learning-evaluation technologies are published.

5. About teaching mathematics. One of the authors' ultimate concerns is the problem of contextualizing mathematical education. This problem has its psychological, pedagogical and strictly didactic aspects. Characteristic properties of contextualizing mathematical education are evolving concurrently with the development of technologies. Valuing the inter- and trans-disciplinary potential in education is a key solution for creating the foundation for contextualizing mathematical education. Connections are a key feature of high performance. Mathematics in Context emphasizes the dynamic active nature of mathematics and the way mathematics enables students to make sense of their world.

A multitude of conditions must be respected in the training of mathematics teachers for teaching under contextualization: 58 1. The Contextualization Directive should encompass pre-primary, primary and secondary education. Therefore, this approach will cover the training of educators, primary school teachers and mathematics teachers.

2. Research questions pertaining to researchers are: What are the current problems relevant to the educational context in our country, to be included at each stage of education? What is the effect of contextualization on students' results such as course grade, course completion rate, credential completion, and/or upward transfer, and how does contextualization take its effect, if any? How can the teaching-learning-assessment process be matched in terms of contextualizing mathematical education with the implementation of modern digital technologies? How do students in math courses of varying levels of contextualization describe their learning experiences and motivational beliefs regarding math and their overall educational and career success? How and why math contextualization may or may not transform students' learning experiences and motivational beliefs?

3. Questions for university professors involved in teacher training are: What materials will support the teachers during the first couple of years in trying to learn how to teach in a new way? What is the set of psychological, pedagogical and didactic ideas to reform the teaching of mathematics?

4. Education policies at national level must:

- provide a complete set of detailed resources for each learning unit for: evocation, realization of the meaning of learning, reflection, evaluation; individual activity of correction, recovery, extension, deepening; ensure the continuous modulation of the set of resources requested by the beneficiaries: teachers, pupils, parents and their guardians;

- offer the opportunity for teachers to work through the problems themselves before they try to teach them – the teachers need to do mathematics themselves; to work with a team of teachers, discussing these ideas together; to be able to contact a person for help with the content, the pedagogical approach, the book itself, the setting of appropriate expectations, and so on.

6. Conclusions. The current requirements in education of mathematics are geared towards increasing the level of motivation and developing the interest in studying mathematics, facilitating active, creative and profound learning. Research in the field of education of mathematics focuses on the application of psycho-pedagogical principles, but the modern trend is directed towards a holistic, integrative approach.

Achieving integrative goals and the formation of mathematical skills can be supported by contextualizing based on problem-solving. Assessment of skill acquisition can be achieved by testing the skills of solving general problem systems, formulated in terms that allow a differentiated and individualized approach to the educational process [1].

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#### ОБРАЗОВАНИЕТО ПО МАТЕМАТИКА В РЕПУБЛИКА МОЛДОВА

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Настоящото изследване представлява качествен преглед на историята на математическото образование в Молдова. Направен е кратък исторически преглед на преподаването и изучаването на математика в Европа и САЩ през 20. век. Разглеждаме развитието на дидактиката по математика в Румъния и Молдова и набелязваме някои проблеми на математическото образование в Република Молдова.