

# Preparation of the future teacher for work with gifted children

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

---

## Abstract

© 2018, Association for Social Studies Educa. All rights reserved. The paper is devoted to the problem of creating a system of training of future teachers for work with gifted schoolchildren in mathematics. The authors analyze the existing curricula and basic professional educational programs for the preparation of Bachelors in the directions of training "Pedagogical Education" and "Mathematics and Computer Science" in terms of ensuring the professional competencies of future teachers for the work in the conditions of existence of a professional standard. The authors propose a technology for preparation of students, involved the production of Bachelors with high competencies in the field of working with gifted children in mathematics. The purpose of the article is to analyze the actual level of Bachelor's training for working with gifted children in mathematics and, on this basis, to present the developed system of training future teachers for work with gifted schoolchildren in mathematics. The research methodology is based on a system of basic principles, methods and concepts of the psychological-pedagogical theory of mathematical giftedness: the content analysis of curricula and basic professional educational programs for Bachelor's training, a test for determining the readiness of a teacher to work with gifted children, a test for determining the propensity of a teacher to work with gifted children. The authors have developed and proposed a structure of vocational training of students to work with mathematically gifted children. Some shortcomings in the professional training of future teachers are revealed. The results of experimental work on the improvement of the basic professional educational program in the training directions "Pedagogical education" and "Mathematics and computer sciences" are presented. The existing problem of the lack of competencies of future teachers should be compensated with the help of development of means, techniques, technologies and methods that contribute to the competence of students in working with gifted children in mathematics.

<http://dx.doi.org/10.17499/jsser.76113>

---

## Keywords

Competences, Gifted children, Mathematical giftedness, Professional standard, Professional training of future teachers

## References

- [1] Askhamov, A. A., Konyshova, A. V., & Gapsalamov, A. R. (2016). Use of E-resources of the learning environment in teaching mathematics to future engineers. *International Journal of Environmental and Science Education*, 11(5), 673-684. doi:10.12973/ijese.2016.340a

- [2] Bogoyavlenskaya, D. B., & Brushlinsky, A. V. (1988). Working concept of endowments. Moscow: Master publishing house.
- [3] Çalışkan, H. (2015). An investigation into the organization levels of social studies teachers with regard to constructivist learning environments in terms of several variables. [Sosyal bilgiler öğretmenlerinin Yapılandırmacı öğrenme ortamlarını düzenleme düzeylerinin çeşitli değişkenlere göre incelenmesi]. *Journal of Social Studies Education Research*, 6(1), 49-83. doi:10.17499/jsser.00913
- [4] Concept of development of mathematical education (2013). Order of the Government of the Russian Federation of December 24, 2013 of N 2506-p Moscow (Published 2013, December 27). Russian newspaper RG.RU. Retrieved February 28, 2018, from <https://rg.ru/2013/12/27/matematika-site-dok.html>
- [5] Diezmann, C., Stevenson, M., & Fox, J. (2012). Supporting exceptional students to thrive mathematically. *Research in mathematics education in Australasia 2008-2011* (pp. 89-109) doi:10.1007/978-94-6091-970-1\_6.
- [6] Erbilgin, E. (2017). A comparison of the mathematical processes embedded in the content standards of Turkey and Singapore. *Research in Social Sciences and Technology*, 2(1), 53-74.
- [7] Faizrakhmanov, I. M., & Akhmetov, L. G. (2016). Use of a targeted program approach in designing information space of the technology teacher's professional activity. *Journal of Organizational Culture, Communications and Conflict*, 20(SpecialIssue4), 1-6.
- [8] Ganeeva, A. R., Anisimova, T. I., Sukhanova, N. V., Mugallimova, S. R., & Prozorova, G. R. (2017). Students' individual work on studying the discipline «Mathematics teaching methodology» by using distance technologies. *Espacios*, 38(40)
- [9] Grinko, E. P. (2014). About some aspects of training of future mathematics teacher for work with exceptional children. *Relevant directions of scientific research of the 21st century: theory and practice*, 2(4-1 (9-1)), 17-19. doi:10.12737/4691
- [10] Korableva O. N., Razumova I. A., Kalimullina O. V. (2017) Research of innovation cycles and the peculiarities associated with the innovations life cycle stages. Paper presented at the Proceedings of the 29th International Business Information Management Association Conference-Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth: 1853-1862.
- [11] Kholodnaya, M. A. (1997). Intellectual endowments as manifestation of features of the organization of individual mental experience. *Main modern concepts of creativity and endowments*. Moscow: Young Guard, 295-314.
- [12] Krutetsky, V. A. (1998). Psychology of mathematical abilities of school students. Moscow: Institute of practical psychology.
- [13] Kryukova, E. A. (1996). Specific features of mathematical endowments of school students and a problem of their psychological support (from experience of the psychologist of physical and mathematical school). *Education of children and youth: modern approaches*. Moscow: University of the Russian Academy of Education, 31-47.
- [14] Liu, J., Utemov, V. V., & Kalimullin, A. M. (2017). Teaching mathematical subjects to students with musculoskeletal disabilities: Public and peer discussions. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(6), 2111-2131. doi:10.12973/eurasia.2017.01217a
- [15] Metelsky, N. V. (1977). Psychology and pedagogical fundamentals of didactics of mathematics. Minsk: "Vysheynaya schoola", 149-160.
- [16] Mirzagitova, A. L., & Akhmetov, L. G. (2015). Self-development of pedagogical competence of future teacher. *International Education Studies*, 8(3), 114-121. doi:10.5539/ies.v8n3p114
- [17] Rodionov, M. A., Tyapina, A. I., & Sharapova, N. N. (2017). Training of future mathematics teachers for working with gifted school students (statement of the problem). *Bulletin of the Nizhny Novgorod university of N. I. Lobachevsky. Series: Social sciences*, 2(46), 143-150.
- [18] Shadrin, V. Yu. (2008). Mathematical endowments of the school student as social and pedagogical phenomenon. *Achievements of modern natural sciences*, 2, 68-69.
- [19] Shagivaleeva, G. R., Shterts, O. M., & Pyanova, E. N. (2017). Socio-professional competencies of students as an important condition for their professional training in the educational process of a pedagogical higher education institution. *Man in India*, 97(25), 167-176.
- [20] Tarman, B., Baytak, A., & Duman, H. (2015). Teachers' views on an ICT reform in education for social justice. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(4), 865-874. doi:10.12973/eurasia.2015.1445a
- [21] Testov, V. A. (2010). Development of endowments as main task of education. Intellectual and creative endowments. Cross-disciplinary approach. Proceedings of III open international scientific and methodical seminar "April forum" (Helsinki, April 05-12, 2010). Novosibirsk: Institute of Psychology and Education of the Russian Academy of Education, 196-202.
- [22] Vertyakova, E. F., & Zabrodina, I. V. (2016). To a question of training of future teachers for work with gifted children. *Collections of conferences of Research Center Sotsiosfera*, 25, 18-21

[23] Yurkevich, V. S. (2000). Gifted child: illusions and reality. The book for teachers and parents. Moscow: Education.