ABSTRACT
of the dissertation of PhD doctoral student
of the educational program
8D01301 – "Pedagogy and Methods of Primary Education"
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on the topic:
"Preparing Future Primary School Teachers to Use Interactive Learning Tools"

Research topic: Preparing Future Primary School Teachers to Use Interactive Learning Tools

Research Objective: To develop a theoretical framework for preparing future primary school teachers to use interactive learning tools, to design a training methodology and verify its effectiveness through a pedagogical experiment, and to provide scientific and methodological recommendations.

Research Objectives:

- To define the essence and content of the concept of "interactive learning tools."
- To identify the essence and features of the professional training of future primary school teachers in the context of the digitalization of education.
- To develop a structural and content model and a teaching and methodological complex for preparing future primary school teachers to use interactive learning tools.
- To experimentally verify the effectiveness of the structural and content model and the teaching and methodological complex and to develop scientific and methodological recommendations.

Research Methods: Theoretical methods: analysis of scholarly and pedagogical literature; classification and grouping; comparison; structuring and modelling; content analysis; data systematisation. Empirical methods: questionnaire survey; observation; pedagogical experiment (ascertaining, formative, and control stages). Statistical methods: mathematical and statistical processing of experimental results; graphical presentation of findings; expert evaluation.

Main Provisions Submitted for Defense

1. The professional readiness of future primary school teachers to use interactive learning tools is a complex professional competence that ensures the effective mastery of the content of primary education in the context of the digitalization of education. It is characterized by the ability to pedagogically select digital and interactive tools, integrate them into the educational process, and modernize the forms of organizing learning activities. This competence is formed through the integration of theoretical knowledge, technical skills, and methodological abilities.

2. Interactive learning tools are considered as a system of interactive, multimedia, communication, and software-hardware resources that provide visualization of educational material, strengthen feedback, and support the

organization of students' active cognitive activities. Their pedagogically appropriate use serves as an important indicator of the digital-pedagogical competence of a future teacher.

3. The structural and content-based model for preparing future primary school teachers to use interactive learning tools is developed based on competence-based, systemic, activity-based, informational, communicative, and learner-centered methodological approaches. The model includes motivational, cognitive, and operational components, for which corresponding criteria and indicators are defined to determine the levels of readiness formation.

4. The preparation of future primary school teachers for the effective use of interactive learning tools is carried out through the implementation of a specially developed educational and methodological complex, an author's textbook, and a system of practice-oriented interactive tasks into the educational process of higher education institutions. The effectiveness of the developed structural and content-based model and the educational and methodological complex has been confirmed through experimental research, which revealed a positive dynamic in the level of readiness of future primary school teachers to use interactive learning tools.

Description of the Main Research Results

– the content of the concept "interactive learning tools" has been clarified and an author's definition has been proposed;

– the essence and specific features of the professional training of future primary school teachers in the context of the digitalization of education have been scientifically substantiated;

– a structural and content-based model for preparing future primary school teachers to use interactive learning tools has been developed, as well as the supporting educational and methodological complex "Use of Interactive Learning Tools in Primary School," the textbook "Use of Interactive Learning Tools in Primary School," and the computer program "Use of Interactive Learning Tools in Primary School";

– the effectiveness of the structural and content-based model for preparing future primary school teachers to use interactive learning tools and the educational and methodological complex has been experimentally verified, and scientific and methodological recommendations have been developed.

Justification of the Novelty and Significance of the Obtained Results

– the first result is new: the content of the concept "interactive learning tools" has been clarified and an author's definition has been proposed;

– the second result is new: the essence and specific features of the professional training of future primary school teachers in the context of the digitalization of education have been scientifically substantiated;

– the third result is new: a structural and content-based model for preparing future primary school teachers to use interactive learning tools has been developed, as well as the supporting educational and methodological complex "Use of Interactive Learning Tools in Primary School," the textbook "Use of Interactive Learning Tools in Primary School," and the computer program "Use of Interactive Learning Tools in Primary School";

– the fourth result is new: the effectiveness of the structural and content-based model for preparing future primary school teachers to use interactive learning tools and the educational and methodological complex has been experimentally confirmed, and scientific and methodological recommendations have been developed.

Practical Significance of the Research:

- A teaching aid entitled "Using Interactive Learning Tools in Primary School" was developed and implemented in practice. The teaching aid was recommended by the Academic Council of Zhetysu University named after I. Zhansugurov (Minutes. 4, 29 November 2024), ISBN 978-601-216-982-9.

- An author's certificate No confirming the entry of information into the State Register of Rights to Copyright-Protected Objects was obtained (11 December 2024, No. 52558).

- The elective course syllabus "Using Interactive Learning Tools in Primary School" for the educational programme 6B01301 – Pedagogy and Methods of Primary Education (2023–2024 academic year) was developed and introduced into practice. In addition, a teaching and methodological complex entitled "Using Interactive Learning Tools in Primary School" was developed and piloted.

- The results of the research may be used in the educational process of higher and secondary vocational education institutions that train teaching staff, as well as in systems of in-service professional development and retraining of primary school teachers.

Compliance of the Research with Priority Areas of Scientific Development and State Programs

The dissertation research is closely related to the objectives of improving the quality of education, developing the professional competencies of future teachers, and introducing innovative technologies into the educational process, as defined 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, and the Concept for the Development of Education and Science of the Republic of Kazakhstan for 2023–2029. In addition, the research is aimed at improving the professional training of future primary school teachers in accordance with the requirements of the State Compulsory Standards of Education of the Republic of Kazakhstan, as well as developing their skills in the effective use of interactive learning tools in pedagogical practice. The issue addressed in the study—preparing future primary school teachers to use interactive learning tools—corresponds to the priority directions of scientific and pedagogical research within the modern education system, including the digitalization of education, the introduction of innovative teaching methods, and the application of active and learner-centered approaches to teaching. Thus, the dissertation research fully corresponds to the current priority areas of scientific development aimed at improving the quality of education, updating the content of teacher training, and introducing modern interactive learning tools into the educational process. In accordance with these documents, the content of the elective course "Using Interactive Learning Tools in Primary School," as well as the textbook "Using

Interactive Learning Tools in Primary School," corresponds to the modern directions of development of primary education and pedagogical science.

Description of the Doctoral Candidate's Contribution to Each Publication:

Based on the results of the research, 17 scientific papers have been published. Within the framework of the study, the following 17 publications were made:

1) Article indexed in Scopus: Fostering Pre-Service Primary Teachers' Capacity to Employ an Interactive Learning Tool. Qubahan Academic Journal**,** 5(1) (Mar. 2025), 662–673. DOI: https://doi.org/10.48161/qaj.v5n1a1530. Doctoral candidate's contribution: 75% (co-authors: Gulnar Zholtaeva – 10%, Gulnar Tazhinova – 5%, Gulnara Syrlybayeva – 5%, Raushan Assylova – 5%).

2) Four articles in journals recommended by the Committee for Quality Assurance in the Field of Science and Higher Education of the Republic of Kazakhstan:

1. Using Interactive Learning Tools in Kazakh Language Lessons in Primary School. Bulletin of Yasawi University. Pedagogy Series**,** No. 1 (131), 2024, pp. 449–463. Doctoral candidate's contribution: 90% (co-authors: Assylova R.O. – 5%, Abdullina G.T. – 5%).

2 Engaging Primary School Teachers in the Use of Interactive Learning Tools. Bulletin of Ablai Khan KazUIR&WL (Kazakh University of International Relations and World Languages), Series "Pedagogical Sciences", No. 2 (73), 2024, pp. 177–190. Doctoral candidate's contribution: 85% (co-authors: Tazhinova G.A. – 5%, Assylova R.O. – 5%, Kabdrakhmanova G.S. – 5%).

3. Prerequisites for Preparing Future Primary School Teachers to Use Interactive Learning Tools. Bulletin of L.N. Gumilyov Eurasian National University. Series: Pedagogy. Psychology. Sociology, 147, No. 2 (2024), pp. 200–218. Doctoral candidate's contribution: 85% (co-authors: Zholtaeva G.N. – 10%, Tazhinova G.A. – 5%).

4. Developing Digital Competences of Future Primary Education Teachers through Interactive Learning Tools. Izvestiya. Series: Pedagogical Sciences, 2025, Vol. 78, No. 3, pp. 346–374. Doctoral candidate's contribution: 80% (co-authors: Zholtaeva G.N. – 10%, Abdullina G.T. – 5%, Assylova R.O. – 5%).

3) Teaching aid and computer program:

1. Using Interactive Learning Tools in Primary Classes. Taldykorgan, 2024. 142 p. Doctoral candidate's contribution to the teaching aid: 80% (co-author: Zholtaeva G.N. – 20%).

2. Computer program: Using Interactive Learning Tools in Primary Classes. Taldykorgan: Zhetysu University named after I. Zhansugurov, 2025. Doctoral candidate's contribution to the computer program: 80% (co-author: Zholtaeva G.N. – 20%).

4) Author's certificates:

1. Using Interactive Learning Tools in Primary Classes. Republic of Kazakhstan. No. 52558, 11.12.2024. Doctoral candidate's contribution: 80% (co-author: Zholtaeva G.N. – 20%).

2. Computer program: Author's certificate. Using Interactive Learning Tools in Primary Classes. Republic of Kazakhstan. No. 65715, 23.12.2025. Doctoral candidate's contribution: 80% (co-author: Zholtaeva G.N. – 20%).

5) Ten articles published in international and domestic venues:

1. Media Education in the Modern School through Interactive Tools. Scientific and Practical Journal "Global Science and Innovation: Central Asia", Proceedings of the XVIII International Scientific and Practical Conference, Astana, 10–15 April 2023, pp. 12–15. Doctoral candidate's contribution: 95% (co-author: Tazhinova G.N. – 5%).

2. Types and Content of Interactive and Didactic Tools Used in Primary Schools. "Problems and Prospects for the Development of Modern Science in the Countries of Eurasia": Proceedings of the IX International Scientific and Practical Online Conference, Pereiaslav-Khmelnytskyi, Kyiv Region, Ukraine, 31 October 2023. Doctoral candidate's contribution: 95% (co-author: A. Tazhinova – 5%).

3. Interactive Platforms and Their Potential in Organising Learning. Proceedings of the III International Scientific and Practical Conference "Innovative Technologies, Issues of Distance Learning and Prospects for the Development of Modern Education", Shymkent, 15–16 February 2024, pp. 89–93. Doctoral candidate's contribution: 90% (co-author: Zholtaeva G.N. – 10%).

4. The Issue of Preparing Future Primary School Teachers to Use Interactive Learning Tools. Proceedings of the International Scientific and Practical Conference "Current Trends and Strategies for the Development of Modern Pedagogical Education", M. Kozybayev North Kazakhstan University, Petropavl, 2024, pp. 161–165. Doctoral candidate's contribution: 90% (co-author: Zholtaeva G.N. – 10%).

5. Types and Content of Interactive and Didactic Tools Used in Primary School. Proceedings of the III International Scientific and Practical Conference "Contemporary Issues of Education, Science and Technology", "INN & SCIENCE ASIA" Scientific and Educational Center, Oskemen, 2024, pp. 9–15. Doctoral candidate's contribution: 100%.

6. Pedagogical Conditions for Using Interactive Teaching Methods to Develop Speech Skills of Primary School Students. Proceedings of the International Scientific and Practical Conference "Integrating Skills in the Process of Developing Preschool Children's Speech in a Digital Society: Problems, Solutions and Prospects", Astana: "BiKA" Publishing House, 2025, pp. 425–429. Doctoral candidate's contribution: 95% (co-author: Syrlybayeva G.T. – 5%).

7. Opportunities for Using Interactive Learning Tools in Higher Education Institutions. Bulletin of Zhetysu University named after I. Zhansugurov, 2022, No. 4 (105), pp. 11–15. Doctoral candidate's contribution: 90% (co-author: Zholtaeva G.N. – 10%).

8. Methodological Features of Using Interactive Tools in the Educational Process. "Current Issues of Science and Education": Proceedings of the International Forum dedicated to the 300th anniversary of the Russian Academy of Sciences. Volume, Part 2. Yekaterinburg, 2023, pp. 406–412. Doctoral candidate's contribution: 95% (co-author: Tazhinova G.A. – 5%).

9. Methodological Aspects of Using Interactive Learning Tools in Primary Classes. Norwegian Journal of Development of the International Science, Vol. 148, 2025, pp. 74–79. Doctoral candidate's contribution: 90% (co-author: Zholtaeva G.N. – 10%).

10. The Role of Interactive Tools in Improving the Effectiveness of Education in the Teaching Process. Integration of the Scientific Community to the Global Challenges of Our Time: Materials of the X International Scientific-Practical Conference. Marseille (France), February 5–7, 2025, pp. 218–225. Doctoral candidate's contribution: 90% (co-author: Zholtaeva G.N. – 10%).