ABSTRACT

of the dissertation work for the degree of Doctor of Philosophy (PhD)
specialization 6D010200 – «Pedagogy and methods of primary education»
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on the topic: « Formation of the readiness of future teachers for integrated learning at primary school»

General characteristics of the work. The dissertation research is devoted to the formation of the readiness of future teachers for integrated education in primary schools.

The relevance of the research is determined by the fact that the education system in the Republic of Kazakhstan, in conditions of integration into the world educational space, the formation of an innovative market economy needs human capital as a key link of the country's competitiveness, the development of science, innovation and technology development. This necessity is also due to the fact that the innovative educational paradigm contains strategic objectives of flexible response to the problem of improving the quality of higher vocational education in accordance with the requirements of international standards, and in the preparation of qualified, competitive graduates for the global labor market. Accordingly, as a result, there is an increasing need for teachers of a new formation who are ready for creative search, and the realization of educational potential and innovative transformations.

In connection with the development of the education system, it is relevant to train teachers for the implementation of integrated education in primary school, which is one of the productive in terms of developing the intellectual potential of younger schoolchildren. In the law of the Republic of Kazakhstan «About education», the Professional standard «Teacher», the State standard of higher education of the Republic of Kazakhstan, the Concept of development of higher education and science of the Republic of Kazakhstan for 2023-2029, the law of the Republic of Kazakhstan «On the status of the teacher» and other regulatory documents in the field of education, serious attention is paid to issues of front-line staffing.

Along with this, the State Mandatory Standard of Primary Education, Standard curricula in primary education subjects are the legislative basis for the educational process in general and the implementation of integrated learning, including. The expected outcomes of the implementation of the education policy include: «continuous improvement of competences and skills, and in the process of learning it is necessary to form the thinking skills of students from elementary (knowledge, understanding, application) to high levels (analysis, synthesis, evaluation)». Integrated education in primary school is presented in pedagogical science and practice as a unity of goals, principles, content of the organization of the educational process, the result of which is the formation of the students' integrated knowledge, practical skills and abilities among students, therefore we link the preparation of future teachers for integrated learning in primary school with the development of their professional competence.

The degree of scientific development of the research problem. In the aspect of training future teachers, the theoretical and methodological reference is made by studies in the field of vocational education: N.D.Khmel, S.T.Kargina, L.A.Shkutina,

ST.T.Taubayeva, K.M.Kertayeva, N.E.Pfeifer, S.K.Abildina, R.K.Bekmagambetova, G.K.Akhmetova, A.K.Mynbayeva, N.A.Malikova and others.

Currently, a theoretical and methodological basis has been formed on the problem of training future teachers for integrated learning in educational institutions is formed by M.G.Chepikova, V.S.Bezrukova, Yu.A.Berulava, N.M.Belyankova, A.Ya.Danilyuk, N.K.Chapaeva, V.K.Sidorenko, L.G.Savenkova, E.Yu.Sukharevskaya, O.Yu.Uzhan, Yu.M.Kolyagina, Yu.Yu.Kolesnichenko, O.D.Listunova, V.V.Levchenko, S.G.Shpilevaya and many others.

The scientific and theoretical basis of the problems of education on the basis of integration of knowledge in the Republic of Kazakhstan consists of the works of A.A.Beisenbaeva, R.K.Abbasova, N.A.Orazahynova, G.A.Mendighalieva, A.B.Turkmenbabaeva, G.K.Sholpankullova, D. Zh.Kishibaeva, T.B.Bainazarova, Sh. A.Ubniyazova, A.A.Kuralbayeva, S.A.Feizuldayeva, L.A.Lebedeva and others.

Foreign experience in the training of teaching staff for the implementation of integrated learning has been reflected in research of S.M.Drake, T.Lehmann, J.Lee, J.E.Turner, Leovigildo Lito D. Mallillin, Eduardo A. Carag, Jocelyn B. Mallillin, Regilito D.,P.Worawuth, C.Prayuth, S.Kanokorn, K.Udomporn, A.Chadchawarn, P.Wilawan.

Taking into account the significance of the results of the above scientific works, it should be clarified that, on the one hand, the development of the problem of preparing future primary school teachers for integrated learning has a long history of development and is one of the relevant areas of education, on the other hand, this problem has not been the subject of special study in the theory and practice of higher education in the Republic of Kazakhstan.

The introduction of standard curricula of updated primary education content into school practice required teachers to carry out appropriate activities that allow them to freely navigate in new conditions, fully use the opportunities of integrated learning, adapt to pedagogical innovations and quickly respond to modern, promising processes of social and economic development of society.

It should be emphasized that the idea of forming a holistic picture of the world around primary school students based on the integration of scientific knowledge from different fields of sciences, combined, in our opinion, all the updated content of the curricula of primary education, which, from our point of view, it was possible to translate into reality in the best way, applying the knowledge of integrated teaching of primary school students, features of the use of intersubject, intrasubject and other types of integration, developing on their basis the creativity and critical thinking of younger students to increase their motivation to learn.

At the same time, an analysis of the activities of primary school teachers in Karaganda and Pavlodar showed that many of them 63% do not have sufficient knowledge, skills and abilities to effectively implement integrated learning: in the answers to our questionnaire, they indicated that they have difficulties in planning and conducting integrated lessons, need methodological assistance at the stage their planning and development. The most common method of integration used by primary school teachers is interdisciplinary communication, which they often use on an intuitive level.

Along with this, one of the priorities for further improvement of higher professional education in the Republic of Kazakhstan is «... overcoming the lag of the pedagogical education system from the general processes of updating secondary schools and its further development as ahead of the practical activities of educational institutions». However, the analysis of the educational program «Pedagogy and methods of primary education» showed that the expected learning outcomes do not fully reflect the theoretical knowledge and practical skills of future teachers, their personal and professional qualities necessary for the implementation of integrated teaching of primary school children, which in turn requires, in the context of our study, the addition of the process training future teachers with educational and methodological materials to achieve their goals.

Thus, the state of theory and practice of professional training of future teachers at the university, the increasing trends in the content of primary education in modern conditions have revealed a discrepancy between the requirements of the updated content of primary education and the unwillingness of practical teachers to apply new approaches, methods, teaching tools for younger schoolchildren in general and the use of integrated learning in particular, and also between the need to form the readiness of future teachers for integrated education of younger students and the lack of appropriate technology for their preparation for this type of activity in a university setting.

The resolution of contradictions and the identification of scientifically based ways of forming the readiness of students for this activity have determined the research problem, which is to find forms, methods and means of preparing future teachers for integrated education in primary school according to the requirements of modern society and the educational system as its social substructure, which led to the choice of the theme of the dissertation research **«Formation of the readiness of future teachers for integrated learning at primary school».**

The purpose of the research is to theoretically substantiate the readiness of future teachers for integrated education in primary school, to develop a practical technology for their preparation for this type of activity and its approbation.

The object of the research is the pedagogical process of the university.

The subject of the research is the readiness of future teachers for integrated learning in primary schools.

The hypothesis of research - if the pedagogical process of the university will be implemented in the technology developed by us, it will increase the level of preparation of future teachers for integrated learning in primary school, as they will be involved in activities, Aimed at the assimilation of a set of knowledge, skills and abilities of integrated education of younger schoolchildren and the formation of professionally relevant qualities.

To verify the hypothesis put forward, it is necessary to solve the following **research tasks:**

1. To reveal the scientific and theoretical basis of training future teachers for integrated education in primary school.
2. To identify the possibilities of the pedagogical process of the university for preparing future teachers for integrated education in primary school.

3. Design a theoretical model for the preparing future teachers for integrated education in primary school.

4. To develop the technology of training future teachers for integrated education in primary school and test its effectiveness in the pedagogical process of the university.

The leading idea of the research is that the formation of a systemic worldview and a holistic picture of the world of students in the lower classes is due to the effectiveness of implementing integrated education in primary school, which is defined as the level of readiness of future teachers for this type of activity.

The methodological basis of the research are the essential provisions on the methodology of integration of scientific knowledge:

– in philosophy on the dialectical unity of integration and differentiation processes (B.A.Ahlibinsky, S.A.Sedov, E.S.Markaryan, A.D.Ursul; philosophical views on integration in nature, society and human thinking (V.F.Morgun, V.G.Levin, M.G.Chepikov and others); on integration of fields of science (B.M.Kedrov, O.M.Sichivitsa, G.Paveltzig and others).

– in psychophysiology and psychology: theory about the holistic activity of the brain (I.P.Pavlov, I.M.Sechenov); theory of interaction of analyzers (P.K.Anohin, V.M.Bekhterev); theory of gradual formation of mental actions (N.F.Talyzina, P.Ya.Galperin); theory of the associative-reflex nature of mental activity (Yu. A.Samarin); theory of unity of affect and intelligence, leading the learning role in personal development (L.S.Vygotsky); theory on two tendencies of child development (N.N.Poddyakov).

– in pedagogy: ideas of integration of scientific knowledge into teaching (Ya.A. Komensky, J.Locke, J.J.Rousseau, J.H.Pestalozzi, V.O.Sukhomlynsky, A.Baitursynov, M.Zhumabayev, M.Auezov, J. Aimauytov and others); integration processes into pedagogical theory and practice (V.S.Bezrukova); the problem of integration of the content of the educational process in the theory and practice of primary education (E.Yu.Sukharevskaya); the concept of integration of general vocational education (M.N.Berulava); the concept of integrated content of primary vocational education (L.D.Fedotova); logical-substantive foundations and normative schemes of pedagogical integration (Yu.S.Tunnikov); theory of integration of education (A.Ya.Daniluk).

Theoretical basis of research are the theories in which scientific approaches are based:

- system (I.V.Blauberg, V.N.Sadovsky, E.G.Yudin);
- activity (A.N.Leontiev, G.P.Shchedrovitsky);
- personality-oriented (V.V.Serikov, I.S.Yakimanskaya);
- competence (A.V.Khutorsky, I.A.Zimnyaya, V.A.Bolotov, V.I.Baidenko);
- integrated (V.S.Bezrukova, M.N.Berulava, N.K.Chapaev, E.Yu. Sukharevskaya, V.V.Levchenko).

Methods of research:

– theoretical - analysis of philosophical, theoretical-methodological, psychological-pedagogical, reference literature on the problem of research and

normative legal documentation in the field of education of the Republic of Kazakhstan, methods of generalization and systematization, content-analysis, modeling;

– empirical - complex psychological-pedagogical methods: questionnaires, testing, direct and indirect observation, analysis of products of activity, pedagogical experiment.

– methods of mathematical statistics: qualitative and quantitative analysis of statistical parameters, method of data visualization.

Sources of research were official government documents and regulatory legal documents of the Republic of Kazakhstan in the field of education; philosophical, psychological-pedagogical works of Kazakh, Russian, foreign scientists, defining the essence and content of the problem under study; philosophical, psychological-pedagogical, encyclopedic dictionaries, reference books, monographs; materials published in collections of scientific and practical conferences of different levels; educational and methodological training manuals on the issue of research.

The research was conducted from 2018 to 2024 in three stages:

The first stage (2018 - 2020) is a theoretical search. At this stage, a scientific and theoretical analysis of philosophical, theoretical-methodological, psychological-pedagogical, reference literature on the problem of research and normative legal documentation in the field of education has been carried out; the main directions of the dissertation research have been defined; the scientific research apparatus is formulated. A theoretical model has been developed for preparing future teachers for integrated primary school education. The criteria and indicators of readiness of future teachers for integrated education in primary school have been substantiated and defined.

The second stage (2021-2023) is experimental. The possibilities of the pedagogical process of the university in the preparation of future teachers for integrated education in primary school were identified. The pedagogical work on training of future teachers for integrated education in primary school was carried out and its effectiveness has been revealed.

The third stage (2023-2024) - final and analytical. During the experiment, the results were interpreted, the data of the pedagogical experiment were analyzed and systematized, and the main conclusions and practical recommendations for the formation of the readiness of future teachers to integrated education in primary school were formulated. The results of the research are presented in the form of a dissertation.

Research base: the experiment was conducted at two universities - the Non-commercial Joint-Stock Company «Karaganda University named after Academician E.A. Buketov» (KarU) and in the Non-commercial Joint-Stock Company «Pavlodar Pedagogical University named after A. Margulan» (PPU) with students of educational program «Pedagogy and methodology of primary education».

The scientific novelty and theoretical significance of the research is as follows:

– the scientific and theoretical basis of training future teachers for integrated education in primary school has been revealed; the concepts «integrated education of primary schoolchildren» and «readiness of future teachers to integrated education in primary school have been clarified»;

– the possibilities of the pedagogical process of the university in preparing future teachers for this type of activity in primary school have been identified;

– a theoretical model of preparing future teachers for integrated learning in primary school has been designed; a system of measuring the readiness of future teachers for integrated learning in primary school has been developed;

– technology has been developed to prepare future teachers for integrated primary school education.

The practical significance of the research is that it has been developed and experimentally tested the effectiveness of the use of teaching materials in the process of forming the readiness of future teachers for integrated education in primary school, including:

– seminar «Theoretical foundations of integration of scientific knowledge in education», aimed at the formation of knowledge of the basis of intrasubject relations and integration of knowledge in primary school;

– the elective course «Features of organization of integrated education in primary school» for systematization of scientific and theoretical knowledge, expansion of practical skills of future teachers in the process of implementation of integrated education in primary school;

– the textbook «Fundamentals of integrating scientific knowledge in the education of primary school children» for deepening scientific knowledge and practical skills of future teachers (recommended for publication by the Academic Council of Pavlodar Pedagogical University dated 28.04.2021, protocol № 8);

– the automated training program «Scientific and theoretical foundations of integration in education» to form a deep understanding of the fundamentals of pedagogical integration in the educational process (Certificate on entry of information in the state registry of rights to copyright protected objects from 28.10.2022, № 29789);

– the electronic textbook «Implementation of an integrated approach in the education of young schoolchildren» for the development of methodological and practical skills of students in applying an integrated approach in primary school (Certificate on entry of information in the state registry of rights to copyrighted objects from 06.06.2023, № 36764);

– the automated training program «Compendium of tasks for the formation of integrated knowledge of young schoolchildren» (Certificate on entry of information in the state register of rights to copyright objects from 03 July 2020, № 11253) and the automated training program «Integrated Task Workshop for Primary School Students» to consolidate skills and abilities in integrating knowledge from primary school subjects (Certificate on entry of information in the state registry of rights to copyright protected objects from 26 May 2021, №17985);

– mass open online course «Integrated Elementary School Education» for the formation of theoretical knowledge and practice-oriented skills and abilities to implement integrated elementary school education;

– criteria and indicators of readiness of future teachers for integrated early childhood education have been developed.

Educational and methodological materials can be used in the educational process of universities, in the system of teacher training, methodological services of

educational organizations, as well as in the self-education of primary education teachers.

The main provisions of the dissertation submitted for defense:

Provision 1. Scientific and theoretical basis of preparation of future teachers for integrated education in primary school is revealed in the process of analysis of fundamental categories: "integration", "synthesis", "complex", "system", "intrasubject relations" and their relationships, which allowed us to clarify:

– the concept of «integrated education in primary school» and consider it as a learning process organized on the basis of strengthening the interconnections of knowledge from different subject areas, aimed at developing systemic worldview and harmonizing the personality of students, helping them to shape a holistic picture of the world;

– the concept of «readiness of future teachers for integrated education in primary school», which we consider as a result of their professional training at university, which is a systemic-personal quality based on the totality of content knowledge, forms, methods and means of integrated learning, as well as skills and abilities related to their conscious use in the pedagogical process of primary school.

Provision 2. The possibilities of the pedagogical process of the university, identified on the basis of the analysis of the content of the State Mandatory Standard of Higher Education of the Republic of Kazakhstan (SMSHE of RK), educational programs «Pedagogy and methodology of primary education», the contents of the Standard Curricula for Primary Education have shown real opportunities related to the formation of knowledge, skills and abilities necessary for the implementation of professional activities and potential opportunities associated with the use of interdisciplinary communication as the initial stage of integrated education for primary school children, manifested through:

– content of the training courses, implemented in accordance with the basic provisions of the competence approach and modern demands of social and economic development of society;

– the principle of the spiral in the education of young pupils, which ensures the cumulative nature of the acquired knowledge and skills, in other words, moving from simple to complex, they gradually expand and at the same time deepen the knowledge and skills acquired in previous stages of education. This results in continuity and cross-curricular integration of the training material.

– pedagogical goal-setting aimed at revealing intra-subject connections, the development of students' cognitive operations through reproductive skills: knowledge, understanding, application and skills of a high order: analysis, synthesis, evaluation;

– cross-cutting sections and topics that contribute to the integration of scientific knowledge from different areas of science and enrichment of the content of teaching subjects.

Provision 3. The theoretical model of training future teachers for integrated education in primary school is presented as a holistic system of interrelated components, each of which performs a certain function consisting of:

– strategy definition - setting goals, objectives and priorities, identifying actions for their achievement and use of resources;

– substantiation of methodological approaches and principles defining requirements for the preparation of future teachers for integrated education in primary school;

– presentation of the stages of technology testing and their content in the process of preparing future teachers for integrated teaching of junior schoolchildren in the university's educational process;

– concretization of the use of forms, methods and means of implementation of technology for preparing future teachers for the type of activity under study;

– the interrelation and co-subordination of the components of the model aimed at achieving the planned result - the readiness of future teachers for integrated education in primary school, the development of its criteria, indicators and levels for evaluating the results of experimental work.

Provision 4. The technology of preparing future teachers for integrated learning in primary schools included the use of:

– systemic, activity-based,personality-oriented, competence-based, informational, integrated approaches and the main provisions of the principles of genetic conditioning, target determination, multiplicity of integration grounds, qualimetric validity;

– a set of traditional and innovative forms, methods and means of formation of necessary knowledge, skills and abilities;

– the developed educational and methodological teaching materials, each of which content in the process of implementing technology for training future teachers to integrated education in primary school contributed to increasing levels of motivation, substantive and procedural components of the readiness of future teachers for the type of activity under study.

Provision 5. The effectiveness of the developed technology and the reliability of its results are confirmed by the results of experimental pedagogical work on the formation of future teachers' readiness for integrated teaching of younger schoolchildren using the Pearson correlation coefficient, which allowed to determine the presence of a linear relationship between two quantitative indicators, as well as to assess the statistical significance, which shows a reliable relationship between the level of readiness of future teachers for the type of activity under study and the technology. The Cronbach's alpha coefficient was used to assess the internal consistency and reliability of the survey methods.

The gradual introduction and testing of this technology has fully contributed to the formation of the readiness of future teachers for the activity being studied, which confirmed the hypothesis of our study.

Approbation and implementation of the research results. The content of the dissertation work is reflected in 32 scientific papers, including:

– participation in international scientific and practical conferences (6 articles);

– publications in journals of the near and far abroad (7 articles);

– in scientific publications recommended by The Committee for Quality Assurance in the field of Science and Higher Education of the Ministry of Science and Higher Education of the Republic of Kazakhstan (12 articles);

– in scientific publications, which are part of the reference database « Scopus» (2 articles).

1 textbook, 3 automated training programs, 1 electronic textbook have been published.

The reliability and validity of scientific results are ensured by the methodology of the study and the initial theoretical provisions, corresponding to the stated objectives. Sufficient amount of information. The results of the conducted experimental and pedagogical work, combination of methods, adequate to the tasks of dissertation research, application of qualitative and quantitative analysis of the study results.

The structure of the dissertation work is determined by the logic and sequence of tasks. The dissertation includes: introduction, two chapters, conclusion, list of sources used and appendices. The text is illustrated with figures and tables. The volume of the dissertation is 147 pages with figures and tables.

The introduction justifies the relevance of the problem being studied, and presents a scientific apparatus for dissertation research.

In the first section «Theoretical and methodological foundations of preparing future teachers for integrated education in primary school» scientific and theoretical foundations of preparing future teachers for integrated education in primary school are revealed; the possibilities of pedagogical process of the university to prepare future teachers for integrated education in primary school have been identified; a theoretical model of training future teachers for integrated education in primary school has been developed.

The second section, «Experienced- pedagogical work on the formation of the readiness of future teachers for integrated education in primary school» reflects the results of an analysis of the initial state of readiness of future teachers for integrated education in primary school; the stages of implementation of technology for training future teachers to integrated education in primary school and the results of experienced-pedagogical work on the formation of readiness of future teachers for this type of activity are presented.

The conclusion reflects the results of the dissertation research, and formulates conclusions and recommendations for applying the results. The appendix contains the research materials.