

ПЕДАГОГИКА ҒЫЛЫМЫНЫҢ ТАРИХЫ ЖӘНЕ ЗАМАНАУИ
БІЛІМ БЕРУ МЕН ҰЛТТЫҚ ТӘРБИЕНІҢ ӘДІСНАМАЛЫҚ МӘСЕЛЕЛЕРІ
ИСТОРИЯ И СОВРЕМЕННАЯ МЕТОДОЛОГИЯ ПЕДАГОГИЧЕСКОЙ НАУКИ,
ОБРАЗОВАНИЯ И НАЦИОНАЛЬНОГО ВОСПИТАНИЯ

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RESEARCH-ORIENTED TEACHER EDUCATION IN KAZAKHSTAN:
POLICY DOCUMENTS AND LITERATURE ANALYSIS

Abstract

School education is changing in response to the rapidly changing world, therefore, teacher education must change too. Modernization of teacher education in Kazakhstan is caused by curriculum renewal and a focus on research in the light of a knowledge-based economy. Research capacity in teacher education at individual, organizational, and system levels ensures a quality development of the research component, which is discussed in international literature. The purpose of this article is to trace how research-oriented teacher education is discussed in the Kazakhstani context literature and captured in policy documents. Thematic analysis is employed to analyze and synthesize the data. Overall, fifteen articles by Kazakhstani and international authors and six policy documents were analyzed. The key themes drawn from the policy documents analysis include the rationale for research-oriented teacher education, the ways of research-oriented teacher education implementation, and teacher research competencies. In parallel, the literature review reveals the discussion of such topics as the readiness for research-oriented teacher education, barriers encountered, and suggestions for research-oriented teacher education development.

Keywords: research capacity, research-oriented teacher education, policy documents, thematic analysis, curriculum, competencies.

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НАУЧНО-ОРИЕНТИРОВАННОЕ ПЕДАГОГИЧЕСКОЕ ОБРАЗОВАНИЕ В
КАЗАХСТАНЕ: АНАЛИЗ ПРОГРАММ И ЛИТЕРАТУРЫ

Аннотация

Школьное образование меняется в ответ на быстро меняющийся мир, поэтому и педагогическое образование должно меняться. Модернизация педагогического образования в Казахстане вызвана обновлением учебных программ и ориентацией на исследования в свете экономики, основанной на знаниях. Исследовательский потенциал педагогического образования на индивидуальном, организационном и системном уровнях обеспечивает качественное развитие исследовательской составляющей, что обсуждается в зарубежной литературе. Цель данной статьи – проследить, как научно-ориентированное педагогическое образование обсуждается в казахстанской литературе и отражается в программных документах. Тематический анализ используется для анализа и синтеза данных. Всего было проанализировано пятнадцать статей казахстанских и зарубежных авторов и шесть программных документов. Ключевые темы, извлеченные из анализа программных документов, включают обоснование научно-ориентированного педагогического образования, способы реализации научно-ориентированного педагогического образования и исследовательские компетенции учителей. Параллельно обзор литературы выявляет обсуждение таких тем, как готовность к научно-ориентированному педагогическому образованию, встречающиеся барьеры и предложения по развитию научно-ориентированного педагогического образования.

Ключевые слова: исследовательский потенциал, научно-ориентированное педагогическое образование, программные документы, тематический анализ, учебная программа, компетенции.

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ҚАЗАҚСТАНДАҒЫ ЗЕРТТЕУГЕ БАҒЫТТАЛҒАН МҰҒАЛІМ БІЛІМІ: БАҒДАРЛАМАЛАР ЖӘНЕ ӘДЕБИЕТТЕРДІ ТАЛДАУ

Аңдатпа

Мектеп білімі тез өзгеретін әлемге жауап ретінде өзгеріп жатыр, сондықтан мұғалімге білім беретін жүйе де өзгеруі керек. Қазақстандағы мұғалімдер білімін жаңғырту оқу бағдарламаларын жаңартумен және білімге негізделген экономикаға керекті зерттеулерге көңіл бөлумен байланысты. Педагогикалық білім берудегі жеке, ұйымдық және жүйелік деңгейдегі зерттеушілік әлеует халықаралық әдебиеттерде талқыланған зерттеу компонентінің сапалы дамуын қамтамасыз етеді. Бұл мақаланың мақсаты – қазақстандық контексттік әдебиеттерде зерттеуге бағытталған мұғалім білімі қалай талқыланатынын және бағдарламалық құжаттарда қалай қамтылғанын бақылау. Деректерді талдау және синтездеу үшін тақырыптық анализ қолданылды. Жалпы қазақстандық және халықаралық авторлардың он бес мақаласы мен алты бағдарламалық құжат талданды. Бағдарламалық құжаттарды талдаудан алынған негізгі тақырыптарға зерттеуге бағытталған мұғалімдерді оқытудың негіздемесі, зерттеуге бағытталған мұғалімдерді оқытуды енгізу жолдары және мұғалімдердің зерттеу құзыреттіліктері кіреді. Сонымен қатар, әдебиеттерге шолу зерттеуге бағытталған мұғалімдерді оқытуға даярлық, кездесетін кедергілер және зерттеуге бағытталған мұғалімдерді оқытуды әзірлеу бойынша ұсыныстар сияқты тақырыптарды талқылайды.

Түйін сөздер: зерттеушілік әлеует, зерттеуге бағытталған мұғалім білімі, бағдарламалық құжаттар, тақырыптық талдау, оқу бағдарламасы, құзыреттіліктер.

Introduction. The conception of ‘teacher as researcher’ itself originated from Lawrence Stenhouse in the 1970s as a way of professional and curriculum development. Upon conception, the role of teachers is not only to consume and transfer knowledge in their practice but also to produce knowledge (McLaughlin 2012; Murray and Vanassche 2019). Knowledge production by teachers is not the final destination of teacher education, but teachers are expected to develop students’ research capacity so that they can produce knowledge for knowledge-based economy and social change as it is stated in The Concept of the Teacher Education Modernization. Other but not all purposes of research-oriented teacher education include the connection of theory and practice, production of innovations in education, improvements in curriculum and policy, and teacher research culture development (van Katwijk et al. 2019; Tatto 2021). Finally, research-oriented teacher education does not aim to train researchers but instill an inquiry behavior in teaching through analysis, evaluation, and reflection (McLaughlin 2012; van Katwijk et al. 2019). In other words, teachers must be able to analyze and reflect on classroom practices, identify and evaluate problems, and generate solutions.

Murray and Vanassche (2019) refer to Desforges’ equation of research capacity development: capacity = expertise x motivation x opportunities (p. 118). Expertise in research-oriented teacher education could be developed through different forms: research disciplines, research initiatives, proposals, mentoring, conferences, partnerships, and other research-oriented activities (Oancea et al. 2021; van Katwijk et al. 2019). In turn, motivation is seen in the willingness to conduct research; however, there are several challenges such as funding, time, resources, insufficient infrastructure, workload, and unclear understanding of research, which impede research capacity development and limit the opportunities at individual, organization and system levels (Oancea et al. 2021).

As we stated at the beginning of the Introduction, research capacity development has become one of the priorities in teacher education, which is being modernized in response to educational reforms. Present teachers are expected to reflect and analyze their pedagogical practices, analyze students’ academic achievements, conduct research, and participate in professional research communities (Sharplin et al. 2020). However, in the light of underdeveloped research culture in Kazakhstan (Jonbekova 2020), we wonder how research capacity in teacher education is being developed to meet the goals of teacher education quality improvements. To be specific, we aim to,

first, identify how research-oriented teacher education is captured in national policy documents, and secondly, review previous literature to reveal the trends in teacher research capacity development in Kazakhstan.

We set two research questions to guide this paper:

1 How is research capacity defined and promoted in the national policy documents?

2 What does previous research say about the research capacity development of teachers in Kazakhstan?

Basic provisions. The Concept of the Teacher Education Modernization developed by Abay University states that teacher education in Kazakhstan is being modernized to be more innovative, practice-oriented, and engaged. Another aspect added to teacher education is research capacity development. There is no single definition of research capacity development. According to Oancea et al. (2021), it depends on the stakeholders' purposes and levels (individual, organization, and system). It also ranges from research literacy (teaching individuals how to conduct research) to research infrastructure and national research policies.

Materials and Methods. The paper employs a qualitative approach, which focuses on understanding of the central phenomenon (Creswell 2014). In this study, we explore Kazakhstani national policy documents related to education and teacher education to analyze how research-oriented teacher education is promoted. Also, we seek to analyze the previous literature on the development of teacher research capacity in Kazakhstan.

Thematic analysis is applied for both policy document analysis and literature review. Thematic analysis is based on the organization of ideas emerging from the data around a certain theme (Saldana 2013). In terms of the analysis of policy documents content, the analysis includes skimming, thematizing and interpretation; also, it is important to capture what is in the policy document and what is not (Cardno 2018). We have analyzed such documents as 1) the State Compulsory Educational Standard of Higher and Postgraduate Education, 2) the Development of 30 Pedagogical Educational Programs, 3) the 'Pedagog' Professional Standard, 4) the Concept of the Teacher Education Modernization in the Republic of Kazakhstan, 5) the State Compulsory Standards of Preschool Education and Training, Primary, Basic Secondary and General Secondary, Technical and Vocational, Post-Secondary Education, and 6) the Concept of the Development of Higher Education and Science in the Republic of Kazakhstan for 2023 – 2029. We do not analyze the retrospective policy documents but focus on the acting papers that cover the topic and regulate teacher education.

In turn, thematic analysis of the literature or thematic literature review represents the analysis and synthesis of the findings of previous research (Creswell 2014). Inclusion criteria for literature sources were time period, nature of the sources, and country. Overall, the articles included in the thematic literature review dated from 2014 to the present time, were related to research capacity development in Kazakhstani teacher education and were taken from academic journals.

Results. *How is Research Capacity Defined and Promoted in the National Policy Documents?*

The section is organized by themes rather than policy documents reviewed. Three main themes were both explicitly and implicitly identified in the policies: rationale for research-oriented teacher education, the ways of implementation, and teachers' research competencies.

Rationale for Research-Oriented Teacher Education

The reasons behind teachers' research capacity development lie in secondary education curriculum demands and focus on research competencies. Having reviewed such policy documents as 'The Comfortable School' national project, State Compulsory Standards of Secondary Education, and the Concept of the Development of Higher Education and Science in the Republic Kazakhstan for 2023 – 2029, we can conclude that the secondary education curriculum develops students' research skills. After the completion of secondary education, students learn how to plan and conduct research, analyze and synthesize data, find cause-and-effect relationships, use technologies for

research works, etc. For that purpose, schools are equipped with infrastructure where students can conduct experiments, read, and work. For instance, in accordance with the Concept of the Development of Higher Education and Science in the Republic Kazakhstan for 2023 – 2029, ‘The Comfortable School’ national project aims to build schools with laboratories, workshops, computer classes, libraries, co-working spaces, etc. Also, the project states that contemporary schools require contemporary teachers or “teachers of a new formation” as they are called in Kazakhstan.

The need for highly qualified teaching staff is also conditioned with participation in international research such as PISA, TIMSS, PIRLS, and ICILS (since 2009). The results of the first PISA tests were not representative, which triggered the reforms in secondary education known as the Renewal of Secondary Education Curriculum (since 2016). The PISA is held every three years in OECD member countries or countries that work with OECD. Today, schoolteachers are expected to interpret the results of international research on the tests and generate solutions to improve students’ achievements. Having mentioned the Renewal of Secondary Education Curriculum, we cannot omit the relationship between the curriculum and teacher research capacity development. So, Kazakhstan has recently shifted more focus on science. High Science and Technology Commission under the Government of the Republic of Kazakhstan approved 10 prioritized directions in science for 2023-2025 where the research in education and social sciences are one of them. Kazakhstan is noted to produce poorly qualified scientific personnel, so the increased requirements for the quality of university research have become a trend. Young scholars are attracted to research projects by government incentives and support. So, every research project must engage 40% of young scholars for research grant funding as it is stated in the Concept of the Development of Higher Education and Science in the Republic Kazakhstan for 2023 – 2029.

The Ways of Implementing Research-oriented Teacher Education

Building research capacity in teacher education is implemented by employing disciplines, internships, research supervision, etc. The Concept of the Development of Higher Education and Science in the Republic Kazakhstan for 2023 – 2029 claims that a recent change made in the curriculum to develop research capacity in teacher education at the bachelor level was disciplines such as “Action research” and “Research methods and data analysis in education”. Also, the crucial role belongs to the scientific research work (24 credits) and research internships (24 credits) at the master’s level as given in the State Compulsory Educational Standard of Higher and Postgraduate Education. In addition to ensuring the quality of master’s programs, students in master's and doctoral programs have their internships at Scientific Research Institutes where they have access to institutes’ research equipment. The supervision of master’s and PhD students is also conducted by scholars from the Scientific Research Institutes.

Although the State Compulsory Educational Standard of Higher and Postgraduate Education states that one of the learning outcomes of gaining higher education is research skills, no specific research-oriented internships are found. It can be explained by the academic autonomy upon which higher educational institutions compile the curriculum themselves. However, the pedagogical curriculum is expected to comply with the requirements for the Concept of the Teacher Education Modernization of The Republic of Kazakhstan developed by Abay University. The Concept claims that research is a part of teachers’ identity. The research skills as a learning outcome are traced in final papers/projects. So, about half and more diploma works and projects must be based on empirical studies. Master’s and PhD students apply their research skills in final theses. Master’s education also implies the project instead of the thesis, in which students are expected to apply research skills in solving the task.

The changes in pedagogical curriculum are also implemented within the collaborative project with the World Bank “The Development of 30 Academic Programs in Pedagogical Sciences”. The project covers 25 bachelor programs, 4 master’s programs, and 1 PGCE (Postgraduate Certificate in Education), and implies that the given programs will be built on the research approach to pedagogies.

Teacher Research Competencies

Academic programs in Kazakhstan are developed to meet the professional qualification framework developed by NCE Atameken. In terms of teacher education, this is the ‘Pedagog’ Professional Standard which provides the requirements for teachers’ qualifications and serves like a professional development compass. According to the Standard, research skills are required for kindergarten teachers, school teachers, vocational and postsecondary education teachers, inclusive education teachers, and psychologist-teachers. To be precise, kindergarten teachers must possess research competencies to enhance children’s research skills and their own practice by means of being aware of other research results. To continue, school teachers (qualification levels 4-7) must be able to reflect on their own and colleagues’ professional work, study best teaching practices and research results for improving their teaching work, and conduct lesson study. In addition, school teachers (qualification levels 6-7) must be able to build academic processes based on relevant research results, lesson study, and research instruments that they can apply. School teacher at these qualification levels are encouraged to participate in knowledge transfer thereby contributing to the professional development of their colleagues. As for the teachers working in colleges and other vocational and post-secondary education institutions, they are expected to conduct research, develop students’ research skills and involve them in research activities. Inclusive education teachers must be able to study and analyze technologies and correctional-development programs to work with children with disabilities. In addition, to implement mentoring work, they must be able to use lesson study skills and develop evaluation tools. Finally, a psychologist-teacher must possess the knowledge and skills in selecting research methods for providing psychological help.

What Does Previous Research Say about the Research Capacity Development of Teachers in Kazakhstan?

The previous research focuses on three themes: (1) the readiness of in-service teachers to engage in educational research, (2) the barriers impeding the development of the research capacity of pre-service teachers, and (3) the best approaches to developing pre-service teachers’ research capacity.

The Readiness of In-Service Teachers to Engage in Educational Research

The scholarly literature contains a few systematic discussions of the readiness of in-service teachers to engage in educational research. Most studies concur that secondary school teachers do not have sufficient research capacity to engage in educational research (Baitokayeva 2019; Nagibova 2019; Rizakhoyayeva and Ibadullayeva 2020). The main reasons for the limited research capacity among in-service teachers were found to be incomplete training in research methods, heavy teaching load, scarcity of literature on educational research methods in Kazakh and Russian, low level of English language proficiency, and absence of support from school administrators (Baitokayeva 2019; Nagibova 2019; Sharplin, Karabassova and Bekova 2023).

It is important to note that the incomplete training in research methods is ascribed to the inadvertency of both pre-service and in-service teacher training. According to the scholars, teacher-training higher education institutions in Kazakhstan are failing to equip future teachers with the knowledge and skills necessary to engage in educational research. Furthermore, professional development courses, organized by Orleu and NIS Centers for Teaching Excellence and specifically aimed at secondary school teachers, due to their organizational challenges, proved ineffective in building sustainable research expertise among them (Almetov, Zhorabekova and Esnazar 2022; Rizakhoyayeva and Ibadullayeva 2020; Tastanbekova 2018). For example, Almetov, Zhorabekova and Esnazar (2022) argue that although Orleu courses were highly relevant, because of their short-term nature, they did not have enough time to provide holistic training in educational research methods and were futile in motivating teachers to break from their comfort zone and take up research systematically. Along the same lines, Tastanbekova (2018) states that time and budget limitations, as well as, poorly qualified trainers prevented NIS and Orleu professional development courses from successfully retraining in-service teachers in educational research methods.

The Barriers Impeding the Development of the Research Capacity of Pre-Service Teachers

The main barrier impeding the development of the research capacity of pre-service teachers was recognized to be the poor quality of educational research methods courses at the university level. Several studies in our sample acknowledge that currently, teacher-training universities are unable to educate high-quality teacher-researchers – students do not have a systematic vision of pedagogical theory and their knowledge of research methods is very fragmented (Bayalina, Ivaylo and Turtkaraeva 2022; Dabylytayeva 2016). A recent study by Bayalina, Ivaylo and Turtkaraeva (2022) showcased that 80 percent of prospective teachers at the undergraduate level do not know how to conduct educational research. The study participants reported not having the necessary skills and competencies to conduct independent empirical research and that their research projects are limited to literature review. The poor quality of educational research methods courses was attributed to three interconnected factors. The first factor is the low level of research methods training among teacher educators themselves. As was pointed out by Berikhanova et al. (2023) and Sharplin, Karabassova and Bekova (2023), higher education faculty are expected to teach research methods courses without appropriate postgraduate research training, with limited opportunities to engage in research due to the absence of an allocated research workload, and with limited access to continuous professional development in research methods. These apparent challenges restrict teacher educators' chances to develop and run quality research methods courses.

The second factor is the tendency of the government to favor reforming the secondary education sector at the expense of developing higher education. Many studies in our sample highlight that recent education reforms in Kazakhstan have prioritized secondary education; the government allocated funding to reform the organization and content of the secondary education sector which resulted in the higher education sector lagging behind the former in terms of infrastructure, resources, and teacher training opportunities (Almetov, Zhorabekova and Esnazar 2022; Berikhanova et al. 2023; Tastanbekova 2018). Even worse, according to Almetov, Zhorabekova and Esnazar (2022), teacher-training universities were not engaged in the transition of secondary education to the updated curriculum in any way which means that universities were not able to react timely to the changing requirements in the teacher labor market. According to the authors, the universities, having acknowledged the evergrowing gap between secondary and higher education, are trying to introduce damage-minimizing measures; but these measures are only working at the surface level, and in practice, higher education and secondary education systems are still separated and operate disconnectedly from each other.

The third factor stems from the second: higher education institutions are now fully autonomous and develop their education programs without having to be guided by the state education standards. This objectively positive factor, according to the position of some scholars, can have negative consequences for the quality of research methods courses since in the absence of appropriate qualifications, state guidance, and understanding of the changes in the secondary education landscape, teacher educators at the universities are unable to provide quality training for pre-service teachers (Alimova and Ushakova 2020).

The Suggestions to Develop Pre-Service Teachers' Research Capacity

The suggestions can be subdivided into four categories: introducing changes in the teacher-training curriculum, developing research culture at teacher-training universities, providing advanced research methods training for teacher educators, and introducing meaningful state-level interventions. According to recent studies, most degree programs at teacher training universities in Kazakhstan now contain a research methodology component (Alimova and Ushakova 2020; Khan 2016). However, some scholars argue that introducing a generalized research methods course into the curriculum is not enough; it is necessary to ensure that research methods training is systematic, continuous, and oriented toward improving teaching practice (Rizakhojayeva and Ibadullayeva 2020). The scholars also underline that current research methods courses focus only on developing research knowledge and skills while ignoring such important elements of research capacity as

research motivation, attitudes towards research, and other professional qualities of a teacher-researcher (Baimukhambetova et al. 2016; Bajmyrzaev et al. 2014).

Developing research culture at teacher-training universities is also considered a crucial, alas, unduly forgotten factor in building future teachers' research capacity. Many studies in our analysis emphasize that research capacity can be cultivated only through the accumulation of research experience which in turn is not possible without creating favorable conditions for prospective teachers and their educators conducive to engaging in research (Bajmyrzaev et al. 2014; Kaskatayeva 2014; Maussumbayev et al. 2022). These favorable conditions include using innovative teaching methods, expanding independent learning opportunities, enhancing students' critical thinking, as well as, organizing various research seminars, workshops, competitions, and student conferences.

Another important category of research capacity development of pre-service teachers is introducing meaningful state-level interventions. Different scholars propose different interventions; there seems to be no consensus on this matter. For instance, Dabylytayeva et al. (2016) insist that conducting educational research should become an obligation for school teachers. The authors believe that such a requirement will motivate in-service teachers to strive to obtain new knowledge by employing scientific inquiry. Similarly, Kaskatayeva (2014) argues that the correct placing and defining of the role of research competency in the professional classification of secondary school teachers is the prerequisite for ensuring quality training in research methods at teacher-training universities. In contrast, Alimova and Ushakova (2020) go beyond modifying teachers' job responsibilities and draw attention to the necessity of reinstating the practice of state educational standards. They believe that unless the government guides teacher-training universities on how to develop prospective teachers' research capacity, the quality of research methods courses will remain deficient. The main reason for this conclusion is that higher education institutions in Kazakhstan are now autonomous and have the right to determine the content of education programs independently, which according to the authors, gives university faculty a possibility to disregard educational research methods training altogether.

One finding we consider highly significant and illustrative of the state of the research capacity-building efforts in Kazakhstan is that despite criticizing the quality of research methods training at higher education institutions (Bayalina, Ivaylo and Turtkaraeva 2022; Dabylytayeva et al. 2016), the local scholars very rarely point out the need to provide advanced research methods training for teacher educators. Only two studies in our sample stress the importance of developing the research capacity of university faculty: Berikhanova et al. (2023) indicate that university teachers themselves should change to be competent in shaping the education of future teacher-researchers; while Kaskatayeva (2014) observes that teacher educators should be ready to purposefully build their students' research capacity and that this readiness encompasses being able to conduct and engage students in their own independent research.

Discussion. Following Oancea's et al. (2021) research capacity classification (individual, organization, and system), the thematic literature review demonstrates that individual research capacity development is mainly restricted by insufficient research methods teaching, caused by poorly qualified instructors and limited involvement in research, and lack of belief that research competencies are important in teacher education. This may result in students' skeptical attitude toward the significance of research in teaching and a mismatch between what university instructors teach and what the school needs. The State Compulsory Standards of Preschool Education and Training, Primary, Basic Secondary and General Secondary, Technical and Vocational, Post-Secondary Education show that school subjects are expected to develop research competencies, which obliges the teaching universities to strengthen the research component.

This discussion leads us to barriers at the system and organizational level. It is not a secret that secondary education curriculum renewal was held separately from teacher education updates. Therefore, to catch up with schools, 30 pedagogical academic programs to fit a new teacher

education model are developed. However, to shorten the gap between teacher education and school demands, pre-service teacher training must be implemented with close collaboration with schools. In the light of research capacity development, the collaboration between in-service teachers and academics allows for transferring research outputs into teaching practices and mentoring students' research in a school setting (McLaughlin, 2012).

Finally, inquiry into research-oriented teacher education is not sufficiently reflected in education standards. The new Concept of Higher Education Development mentions the introduction of two research disciplines with no number of allocated credits. Due to academic autonomy, teaching universities independently decide the number of credits for each discipline, but it may result in deficient attention to the research component.

Conclusion. In conclusion, to meet Desforges' model of research capacity development, expertise, motivation, and opportunities must be created and supported at individual, organizational and system levels. Robust academic programs, a clear understanding of research in teacher education, faculty with research expertise, university-school research collaboration, and government support fixed in policy documents may have a desirable effect on research-oriented teacher education in particular and quality teacher training in general.

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