



Article

Leveraging Non-formal Action Research to Enhance Teacher Research Activity at a Pedagogical University in Republic of Kazakhstan

Aiman Berikhanova¹, Elaine Wilson², Lyaziza Sarsenbayeva^{3*}, Bayan Sapargaliyeva⁴, Fatima Assilbayeva⁵, Aigul Iskakova⁶

^{1,4,5,6}Abai Kazakh National Pedagogical University, Almaty, Kazakhstan

²Faculty of Education, Homerton College, University of Cambridge, Cambridge, United Kingdom

³Turan University, Almaty, Kazakhstan

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CORRESPONDENCE

*E-mail: lyaziza_s@mail.ru

A B S T R A C T

The study was conducted with the aim of identifying the possibilities for implementing the informal research method of Action Research into the educational process of a pedagogical university as a tool for enhancing the research activity of university teachers in Kazakhstan. The significance of mastering this method by pedagogical university faculty is grounded in their ability to disseminate their experience, involving students—future teachers—in a cyclical process of continuous research and transformation of their pedagogical practices. As a result of the literature review, the advantages of Action Research were highlighted, particularly in terms of activating personal, professional, and environmental resources that were previously underutilized in traditional formal research formats. The relevance of the study lies in the necessity to examine global experiences with informal research methods, focusing on the feasibility of their implementation with consideration of the specific context of Kazakhstan. The article describes the process of conceptualizing the informal method of Action Research, diagnosing awareness and demand for this method among young pedagogical university faculty, developing and testing a program for its implementation, evaluating its effectiveness, ensuring post-course support, and determining the prospects for integrating the method on a national scale. Methods such as surveys, pilot studies, formative experiments, and Action Research tools were applied. A pilot implementation of Action Research was conducted to develop the research activity of young faculty members at Abai University, considering their needs within the framework of a modular professional development program titled “Action Research – the Foundation for Developing a Pedagogue-Researcher Model.” Analysis of the results confirmed the effectiveness of implementing the method in enhancing the research activity of teachers and transforming them into researcher-teachers. Based on the review and feedback analysis, the prospects for the expanded integration of informal research methods into the practice of education in Kazakhstan were identified.

I. INTRODUCTION

The contemporary vision of education as “experience-based” allows for the formation of alternative interpretations of reality based on a felt connection with the world. “Learning and creativity are generative, and viewing education through the

lens of life values leads to an understanding of what is truly needed to unlock people’s full potential” (Howard, 2018).

Analytics-based science facilitation associations support the need to change teaching approaches due to an intensely evolving landscape

and scientific technologies that require updated practices, tools, and student thinking (Brownell and Tanner, 2012). Alongside technological developments, new methodologies, methods, and tools are being developed to investigate and evaluate the effectiveness of the learning process, focusing on problems that existing research does not address (Sousa et al., 2021). Considering these demands, research activity aimed at the development and integration of theory and practice should be a priority in the professional activities of university teachers, determining the transformation of their roles from pedagogical to scientific and pedagogical.

The modern stage of post-nonclassical science development is characterized by several trends: freedom of choice in methodology; openness to new experiences and interdisciplinary discourse; the development of the idea of social construction of reality and the unique creativity of subjective experience; situational determinism; and the use of critical self-reflection in changing research contexts. J.F. Matos et al. (Matos et al., 2023), through a systematic analysis of research in higher education, identified three dominant aspects: methodological knowledge, research competencies, and pedagogical practices in teaching research methods. The authors note that faculty members face difficulties in all these areas and therefore need to rethink their pedagogical approaches and recognize that the quality of educational research directly affects the quality of its outcomes.

As the experiences of developed countries show, the success of educational reforms largely depends on the level of training of pedagogical staff and their research competencies. It is no longer sufficient for a modern teacher to simply transmit knowledge to students; they must also transform their pedagogical activities in accordance with contemporary demands, constantly introducing innovations through ongoing pedagogical reflection, scientific analysis, and research of emerging problems. The search for conditions and methods that support the sustainable development of university teachers—allowing them to continuously grow through research-based practice and generate solutions to existing problems—has become increasingly relevant.

For a teacher to effectively educate students, they must possess not only a sufficient level of scientific literacy but also an experimental

(research) culture of learning, embodying the role of a researcher-practitioner. Kinchin, I.M. (2019), introduced the term “pedagogical weakness” concerning university educators. The key areas of this psychological weakness model are the nature of the discourse on teaching and learning, focusing either on the mechanisms and procedures of teaching or the underlying pedagogy (teacher expectations, professional values, approaches to student learning, etc.). It is crucial to consider how the teacher establishes a relationship between pedagogy and the subject being taught and whether teaching provides an authentic understanding of the discipline by linking theory and practice. The author emphasizes that university education does not always follow a linear trajectory; rather, it is an integrative, recursive process where knowledge is subject to continuous modification. Therefore, teachers must respond to individual and social factors and consistently investigate teaching weaknesses and problems, which is key to the success of modern universities. To overcome pedagogical weakness, teachers need to strengthen the connection between theory and practice, learn to identify problems, investigate them, and adapt their practices accordingly.

One of the current trends is the digitalization of research using GEN AI, which presents both new opportunities and prospects on the one hand, and challenges and risks on the other. Contemporary research on generative artificial intelligence explores strategies for gaining a competitive advantage, provided it is seamlessly integrated into research based on principles of reliability, transparency, and ethics. Educators are tasked with mastering AI technologies to enhance the productivity of their practice and develop their creative potential.

An active dialogue is underway to promote open learning (Papadakis et al., 2023) which explores the prospects of breakthrough educational technologies and the application of AI in research and education, for intelligent data processing, intuitive exploration of environments, and content.

Modern researchers highlight the role of GEN AI in ensuring educational leadership and the integration of technologies for teachers, as well as in supporting the research process (Karakose et al., 2023). The role of digital leadership, which ensures the development of organizations and staff, is also being examined (Karakose et al., 2022).

This raises the question: what are the ways

to realize these trends? One approach involves the convergence of formal, non-formal, and informal education, along with corresponding research paradigms in the field of education. Formal education occurs in organized environments specifically designed for learning and aims to develop and enhance professional competencies. Informal education takes place through planned activities and may include programs for professional skills development, targeting the elimination of professional deficits by acquiring new knowledge and skills. Informal education occurs in everyday contexts related to work, family, or leisure and allows students to independently set their goals based on personal and professional interests.

In teacher education, informal education holds special significance, enabling teachers to improve their professional practice and address missing competencies by leveraging available resources through their own initiative. This approach is qualitatively different from formal education. Traditional methods of supporting teachers' development, such as infrequent workshops, have faced criticism for failing to enact positive changes in practice. These models often assume that external experts provide knowledge, leaving teachers to implement it independently. However, experience has shown that new research-based professional learning models that position educators as experts themselves have been more effective in fostering continuous growth. Additionally, these collaborative models of professional learning demonstrate how teacher-initiated research can support educational reforms. Enquiry-based professional learning, delivered within the context of direct practice, has been shown to enhance instructional quality and optimize student learning formats. One effective strategy is to encourage prospective teachers to engage deeply with content specific to their subject matter through inquiry and immersion in academic culture. An inquiry-based strategy (IBS) is considered an appropriate methodology for achieving this change (Aragón, 2022).

The main characteristics and benefits of informal learning can also be applied to informal research methods. One such method is Action Research, which aligns with global trends and strategies for enhancing teachers' research capacity. Action Research encompasses qualitative applied research methods, serving as a legitimate

informal approach to conducting research, driven by practical demands and not always confined to predetermined activities and forms of work. This method is systematic, with clearly defined objectives, outcomes, and study duration.

While there are other tools available for researchers in professional learning, most focus on episodic and reproductive learning. Therefore, it is crucial to explore informal research methods that extend beyond formal research, enabling teachers to systematically integrate science into practice while activating their environment and creative resources.

The creation and implementation of educational practices for teachers should be based on conditions that highlight a set of important distinguishing features, such as: creative informal character; the objectification of existing knowledge and competencies; inclusion in productive, socially significant activities; immersion in practice; and mastering pedagogically significant situations in group activities within the professional community. Informal practices should closely resemble real professional pedagogical activities that involve unconventional problem-solving (Yakushkina, 2020).

The global educational practices have accumulated a wealth of experience in the successful implementation of Action Research throughout the twentieth century, thanks to the studies of American, British, and Australian scholars such as K. Lewin, J. Dewey, J. Collier, S. Corey, L. Stenhouse, W. Carr, S. Kemmis, J. Whitehead, and others. Action Research gained particular recognition and spread toward the end of the last century in various countries. For example, in Great Britain during the 1990s, the movement "Teacher as Researcher" emerged, rooted in a new democratic philosophical paradigm, marking the beginning of active study and implementation of the Action Research approach.

At that time, Participatory Action Research (PAR) was utilized in universities across Australia and New Zealand. The essence of PAR involves collective, group-based self-reflective research that leads to the reconstruction of the pedagogical process. The core principle of PAR is the cyclic nature of four interdependent processes: analysis, planning, action, and observation (Seymour-Rolls and Hughes, 1999). According to Aimers (1999), the main characteristics of PAR include:

equal emphasis on action and research; unlocking the developmental potential of research; cyclical nature of the process (creating a basis for developing relationships among participants as co-investigators; collecting and analyzing data; monitoring; adjusting; and evaluating results); and involving stakeholders in all aspects of the research process.

Research-based teaching and learning is one of the primary goals of Finnish teacher education, where teachers are recognized as researchers. This focus on preparing reflective educators who are committed to ongoing professional development has led to significant positive changes, positioning Finland as a leader in global education (Furuhagen et al., 2019). Integration of pedagogical practice with educational theory is achieved through a three-stage supervision process that fosters collaboration among university faculty, school faculty, and student teachers (Wolff et al., 2017; Wilson, 2017).

In Canada, professional communities are being established for educators implementing Action Research. Newman (1999) is recognized as an active promoter of this approach, viewing it as a meaningful means of improving pedagogical practices. Newman emphasizes that the point of Action Research is not to “prove” something but to reevaluate one’s work, identify problems, and recognize needs. Educational Action Researchers ask questions such as: “How can I improve what I do? Are values clarified and justified as they emerge in practice? Does the explanation incorporate an evaluation of past practices and an intention to create something better in the future?”

In the twenty-first century, there is a growing demand for Action Research, which can dynamically investigate a wide range of determinant influences on the process of training professionals at universities and enhance their competitiveness in an exploratory manner (John, 2023). Modern representatives of the Swedish scientific community, Edwards-Groves & Rönnerman (2022), identify seven fundamental principles, or “cornerstones,” of Action Research: contextuality, commitment, communication, collaboration, criticality, collegiality, and community, which ensure coherence in educators’ activities in educational research.

The search continues for informal methods of enhancing teacher research that remain underappreciated and underutilized yet effective.

B. Rubia-Avi notes that while teachers may be experts in their educational disciplines, they often lack experience in research or assessment processes. The author suggests utilizing learning analytics as “the measurement, collection, analysis, and presentation of student data in the context of optimizing learning and the environment in which it occurs.” The need to expand research beyond classical educational methods, incorporating both qualitative and quantitative methodologies, is emphasized. This approach can help bridge the long-standing gap in the dynamics of innovation, which has been hindered by a lack of robust research that influences processes and people (Rubia-Avi, 2023).

Hattie & Zierer identifies attitudes of passionate faculty members that align with the mission of Action Research: “I seek challenges, not just ‘doing my best’”; “I build relationships and trust so that learning can take place in an environment where it is safe to make mistakes and learn from others”; “I provide students with feedback and help them understand, interpret, and act on it”; “I collaborate with other faculty” (Hattie and Zierer, 2018).

Shah & Bhattarai highlight experience, teaching strategies, and student engagement as factors that enhance teachers’ self-efficacy. Teachers act as active agents for students, ensuring engagement and maintaining attention during learning activities while organizing effective teamwork. Regular inquiry into the educational process, fair monitoring, and evaluation of teachers’ progress can contribute to improving teachers’ self-efficacy (Shah and Bhattarai, 2023).

K. Tirri points out the need for further research on teachers’ values, beliefs, and attitudes, which influence their cognitive and social skills and their motivation to learn and develop professionally (Tirri, 2021)

R. Sanchez-Cabrero, J.L. Estrada-Chichón, and colleagues conducted an extensive analysis of contemporary scientific literature on pedagogical issues, identifying five primary models of teaching effectiveness: based on theoretical conceptualization and meta-analysis of scientific literature; based on quantitative assessments of teaching effectiveness excluding teacher input; based on systematic observation of the process under the guidance of an effective teacher; based on macro-analysis, comparing teaching across different countries

using authentic educational literature; and based on studies of teaching effectiveness in various countries. The authors conclude that any research approach can focus on both micro and macro aspects of teaching effectiveness to create a model that appropriately assesses the teacher and their professional performance (Sánchez-Cabrero, et.al. (2021) Research skills grounded in the scientific method contribute to solving “pedagogical difficulties in general and teaching-learning problems in particular” (Vázquez-Villegas, et al., 2023).

From the perspective of Action Research, research activity can be viewed as a type of collaborative analytical and methodological work focused on systematically studying a research question related to an actual pedagogical problem within the context of real educational activity. This process ultimately leads to the transformation of the educational process at a specific stage, with the potential for predicting further development. Action Research brings together teachers committed to ensuring the quality of their professional activities through their own research efforts directly at their workplace, which serves as a research platform.

The research problem lies in justifying the possibilities of integrating informal research into the professional practice of pedagogical university faculty in the Republic of Kazakhstan to enhance their research activity. This area remains insufficiently studied and highly relevant: there is a need for the conceptualization of the informal method of Action Research within the context of pedagogical education, justification of its advantages in the development of university teachers' research activity, and its implementation in practice to overcome professional deficits and ensure the sustainable development of teacher education.

II. METHOD

Research Design

The aim of this study was to explore the possibilities of integrating the informal research method Action Research into the activities of pedagogical university faculty to enhance their research activity.

To achieve this goal, specific research questions were formulated: (1) What are the gaps in the research activities and the needs of young scholars and teachers for mastering the

informal method of Action Research? (2) Is the implementation of the Action Research training program in the form of professional development courses effective in increasing the research activity of pedagogical university faculty?

In accordance with the research objectives, a flexible research design was applied, which included diagnosing the problem, organizing a formative experiment, and identifying further prospects for implementing the informal method of Action Research.

Participants

The respondents were participants in professional development courses for young faculty members at the pedagogical university, enrolled in the modular training program “Action Research – The Foundation for Forming the Model of a Pedagogue-Researcher.” The sample consisted of 119 young teachers and researchers from the Faculty of Pedagogy and Psychology at Abai Kazakh National Pedagogical University. Among the respondents, 47.3% were young scholars, and 52.6% were young faculty members. The sample was representative, as it was limited to teachers with less than 5 years of experience.

Informed consent from the survey participants was obtained through familiarization with a document that described the conditions for participation in the study, voluntary participation, and the research procedure. Based on this, the respondents accepted the conditions and confirmed their consent to participate in the survey.

Instruments and Procedure

To address the first research question, a survey method was used. A questionnaire was developed that included questions regarding the degree of awareness about informal research methods, the Action Research method itself, motivation, and the willingness to master the method to improve their own practice, challenges in conducting research, and the types of support needed for integrating the method into professional pedagogical practice. The initial survey was conducted to assess awareness of the informal method of Action Research and readiness to master it. The selection of question content was based on a model of research activity for faculty members.

The questionnaire included 10 closed-ended questions, offering multiple-choice answers. The questions were designed using both single and

multiple-choice formats based on a Likert scale (yes/no, frequency of occurrence). Respondents answered in an online format via Google Forms. Expert validation and pilot testing of the questionnaire were conducted, demonstrating its good construct validity and internal reliability. An expert group of 3 PhD doctors evaluated the relevance, clarity, simplicity, and ambiguity of each question on a scale from 1 to 4. Questions with Item-Discrimination Scores (IDS) between 0.60 and 0.79 were adjusted. The reliability index calculation showed a value greater than 0.80. The survey was conducted both at the beginning and at the end of the training program.

To address the second research question, a pilot study was conducted to test the implementation of the informal method of Action Research within the context of professional development courses for young faculty and researchers at a pedagogical university. To assess the effectiveness of the formative experiment, the G-sign criterion and the **Spearman's rank correlation coefficient** were applied. The formative experiment was carried out as part of the implementation of the modular training program "Action Research – The Foundation for Forming the Model of a Pedagogue-Researcher".

The participants included 119 young educators from Abai Kazakh National Pedagogical University. The selection of participants was based on their needs for mastering informal research methods. The courses were offered at no cost to the participants, with funding provided by the grant project of the Ministry of Science and Higher Education of the Republic of Kazakhstan. The trainers consisted of certified educators from Abai Kazakh National Pedagogical University and the Faculty of Education at the University of Cambridge.

The training modular programme (80 hours) was carried out in the period 5.02-15.02 2024. 5.02 - course opening, entrance questionnaire; 6.02. - Module 1; 7.02 - 8.02. - Module 2; 8.02-9.02. - Module 3; 10.02 -12.02. - Module 4; 13.02.-14.02. - Module 5; 15.02. - Module 6. Closing Feedback, exit questionnaire, development and uploading of Action Research design by trainees in Class Room, checking of projects, evaluation.

The course program was developed considering the requests and identified problems of the educators, aiming to enhance their methodological culture, research competence, and activity through

the systemic integration of practical research into their professional practice based on the informal method of Action Research.

During the implementation of the educational program, trainers employed interactive teaching forms and methods that ensured the cognitive engagement of participants: methodological seminars, training sessions, lectures, practical work, webinars, online conferences, online consultations, independent work, group work, project assignments, presentation defenses, online feedback, round tables, and formative assessments. Interactive online tools such as Kahoot, Quizizz, Padlet, Canvas LMS, virtual board Miro, and others were used throughout the course.

Methodological and informational support, as well as feedback, were provided on a specially created online platform for participants and trainers of the professional development courses. To control and assess participants' knowledge, incoming and outgoing online questionnaires, independent work, intermediate testing on theoretical and content modules, reflective essays, and presentation defenses for project assignments were included.

To ensure a systematic and continuous learning process, post-course support was organized for participants, who were grouped into targeted teams to implement Action Research in their professional practice with students. This stage aimed to address the following tasks: to provide psychological and pedagogical conditions for supporting educators in defining the problem, goals, tasks, and hypotheses of their research within groups; to assist in selecting research strategies and methods; to offer consulting help in writing reflective essays and formatting research results and scientific articles; and to enhance the professional development of educators by engaging them in self-reflective research.

Post-course support was conducted in stages:

Stage 1: The trainer held online consultations on platforms such as Google Meet, Classroom, and others, as well as via email, WhatsApp, Instagram, YouTube channels, and other social networks.

Stage 2: Psychological and pedagogical support for conducting Action Research, guidance in selecting necessary literature, choosing appropriate research methods and strategies, finding a critical friend, external experts, and providing participants with the required digital resources.

Stage 3: Monitoring the development of

participants' research activity through informal research organization forms like Action Research.

Stage 4: Mentoring in writing reflective essays, formatting research results as scientific articles, and publishing in pedagogical journals and conference materials.

Stage 5: Facilitating experience exchange among colleagues and disseminating positive Action Research results in professional communities.

After the completion of the targeted groups' work, a festival of ideas was organized on the theme "Concept and Overview of Best Practices in Action Research," where a team of creative young scholars from Abai Kazakh National Pedagogical University presented their research insights on Action Research in a poster gallery. They shared valuable experiences from informal research conducted within their teaching disciplines, integrating pedagogical science and practice with optimal solutions and outcomes. At the end of the festival, constructive feedback from participants was shared, certificates were awarded to speakers, and the prospects for further collaboration in creating a network research community for Action Research were discussed.

III. RESULTS

Results of the Initial Survey

The first question concerned respondents' assessment of their motivation level for research activity: 32.8% rated it as very high; 40.3% rated it as high; 23.5% as medium; and 3.4% as low (see Table 1).

Table 1. Distribution of respondents by motivation levels for research activity (in %)

Very high	High	Average	Low
32.8	40.3	23.5	3.4

For the second question, "What informal research methods do you know and use?" 37.6% of respondents found it difficult to answer but expressed a desire to master these methods during the courses. 20.8% mentioned the informal method Lesson Study, which was noted by respondents with school experience. Focus groups were cited by 7.2%; forums by 7.2%; training sessions by 7.2%; projects by 3.2%; case studies by 3.2%; and self-study by 1.6%. The remaining 12% of respondents mentioned methods used in both formal and informal research, such as experiments, observations, interviews, surveys, and others (see figure 1).

The third question aimed to assess respondents' knowledge of the Action Research method:

38.7% indicated a low level; 52.9% indicated a medium level; 7.6% indicated a high level; and 0.8% indicated - high level (see Table 2).

Table 2. Distribution of respondents by levels of knowledge of the Action Research method (in %)

Very high	High	Average	Low
0.8	7.6	52.9	38.7

The fourth question concerned the experience of using Action Research. 63.9% responded that they have not used it but want to master this method; 30.3% said they lack experience in using it; only 5.9% have used this method and consider it effective (see figure 2).

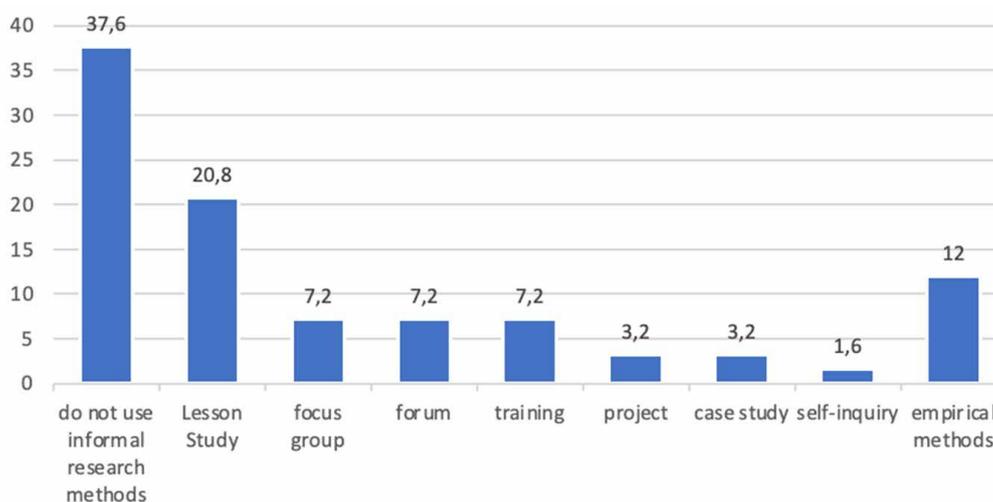


Fig. 1. Use of informal research methods by young researchers of pedagogical university

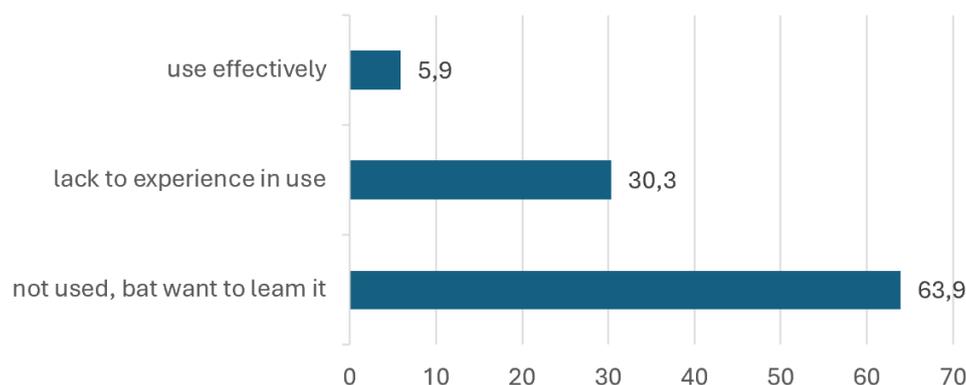


Fig. 2. Experience of using the Action Research by young researchers and teachers of a pedagogical university

For the fifth question, “What are the advantages of Action Research?” 39.5% of respondents stated that it allows for the improvement of professional practice; 24.4% noted the possibilities of group research and solving pedagogical problems; 14.3% pointed to the potential for development within a professional research environment; 10.9% mentioned the opportunity for practice change; 6.7% see it as a means for dissertation defense; and 4.2% believe that mastering Action Research allows one to become a reflective practitioner (see Table 3).

For the sixth question, “What methodological approaches and principles of informal pedagogical research do you know?” 28.8% found it difficult to answer. 42% of respondents were aware of the main approaches. The remaining 23.2% provided inaccurate answers, naming methods rather than approaches and principles (see Table 4)

Among the mentioned methodological approaches were the systemic approach, personal approach, activity-based approach, and

sociocultural approach. The principles of Action Research identified included the principles of collaboration, immersion, freedom of choice, self-management, and feedback.

The seventh question, “What support do you need for engaging in Action Research?” revealed that 42% of respondents stated the need for organizing training seminars and courses; 22.7% highlighted the availability of necessary literature and information resources; 20% required support from a research mentor; and 15.2% considered it important to provide benefits for educators engaged in informal research, such as incorporating this type of activity into their workload or reducing their teaching load, as well as organizing free training, providing grants and funding for research projects, and creating ongoing online forums with access to materials (see Table 5)

The eighth question addressed the difficulties faced by young scholars and educators in applying Action Research in their professional practice. 43.7% of respondents identified the correct selection and use of research methods; 33.6% noted

Table 3 Advantages of Action Research according to respondents (in %)

Improvement of professional practice	Group research	Development in the research environment	Change of practice	Dissertation defense	Development of reflective practice
35.9	24.4	14.3	10.9	6.7	4.2

Table 4. Indicators of knowledge of methodological approaches and principles of informal research (in %)

Well-informed	Insufficiently informed	Found it difficult to answer
42.0	23.2	28.8

Table 5. Types of support for implementing Action Research in the professional practice of young scholars and educators at the pedagogical university (in %)

Training seminars and courses	Availability of literature and information resources	Support from a research mentor	Provision of benefits for educators
42.0	22.7	20.0	15.2

Table 6. Difficulties in applying the Action Research method by young scholars and educators at the pedagogical university (in %)

Selection and use of research methods	Definition of the research topic	Statistical analysis of research results	Proper selection and analysis of literature	Challenges in publishing results	Lack of a research environment	Difficulties in generalizing results	Definition of research stages	Difficulties in reflecting on the research
43.7	36.6	29.4	23.5	20.2	17.6	14.3	13.4	9.2

Table 7. Goals of participation by young scholars and educators in professional development courses on mastering Action Research (in %)

Mastering the theory and technology of Action Research	Increasing research activity	Improving professional practice	Obtaining a certificate	Enhancing research competence
32.8	30.3	24.4	10.1	2.4

the proper definition of the research topic; 29.4% referred to the mathematical and statistical analysis of research results; 23.5% highlighted the correct selection and analysis of literature on the research topic; 20.2% mentioned challenges in publishing results as scientific articles; 17.6% cited insufficient research environments and scientific networking communities; 14.3% pointed to difficulties in generalizing results in accordance with the goal and hypothesis; 13.4% indicated challenges in correctly defining the stages of research; and 9.2% noted difficulties in reflecting on the research (see Table 6).

For the ninth question, “Would you like to improve your teaching practice and increase research activity based on Action Research?” 77.3% responded positively, 10.4% stated they are already engaged and ready to share their experience; 10.4% said they are unfamiliar with the method and showed no readiness; and 1.6% expressed willingness contingent upon the provision of benefits. (Figure 3).

The tenth question explored the goals of young scholars and educators participating in

professional development courses. 32.8% of respondents aimed to master the theory and technology of Action Research; 30.3% aimed to increase research activity; 24.4% aimed to change and improve professional practice; 10.1% aimed to obtain a certificate; and 2.4% aimed to enhance their research competence (see table 7).

The survey analysis revealed that the majority of young scholars and educators (over 70%) are highly motivated for research activities. The main motivational factors include the opportunity for group research and solving pedagogical problems to change practice, the potential for development within a professional research environment, and the facilitation of productive communication within the educational community. It was found that only half of the educators have an understanding of the informal method of Action Research, and only a small portion are familiar with it at a high level (8.4%) and can share their experience (5.9%). At the same time, educators highly appreciate the benefits and opportunities that Action Research provides for changing and improving teaching and self-development. There was also a noted weak grasp

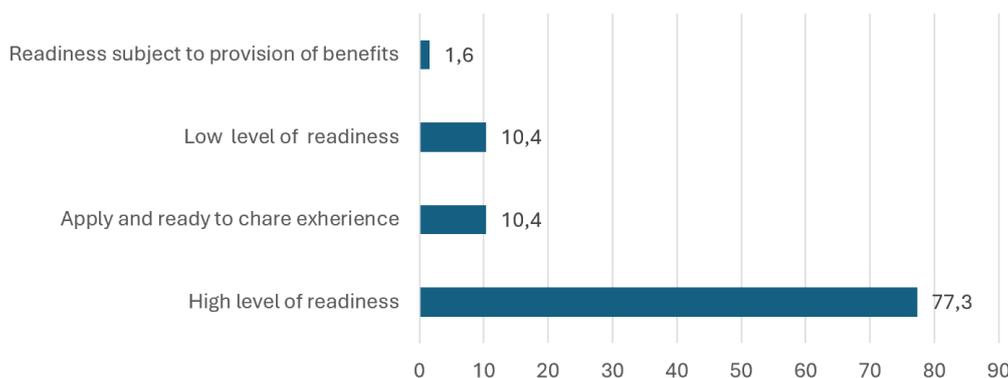


Fig. 3. Willingness to improve teaching practice and increase research activity based on Action Research

of the methodology of informal research, along with challenges at all stages of conducting research in practice. Most young researchers and educators need support of an organizational, financial, informational, and methodological nature.

Thus, a contradiction was identified between the demand for a pedagogical university educator focused on active research and the transformation of their practice through the acquisition of the informal method of Action Research and the lack of experience in implementing it within the pedagogical university context.

Survey Results Post-Training

After completing the training, the analysis of the post-training survey data indicated an increase in the level of motivation for research activities: the number of respondents with a high level rose by 11.6%. As a result of the conducted work, a positive shift in the level of motivation for research activities was observed, as confirmed by the G-sign criterion: shift $p = 0.002$, $p \leq 0.05$. Additionally, the number of faculty members with a high level of knowledge of the Action Research method increased by 32.1%, $p = 0.000$, $p \leq 0.05$.

To identify the correlation between research activity indicators, the Spearman's rank correlation coefficient was applied. A positive relationship was found between: a high level of motivation for research activities and knowledge of the methodological approaches and principles of informal research, $r = 0.608$, $p = 0.000$; a high level of motivation for research activities and a high level of knowledge of the Action Research method, $r = 0.398$, $p = 0.029$; experience in applying the Action Research method and a high level of knowledge of the Action Research method, $r = 0.776$, $p = 0.000$.

The overwhelming majority of respondents (92.2%) expressed their intention to implement Action Research in their professional practice. Knowledge about the research methodology based on Action Research significantly expanded, particularly regarding the main methodological approaches, principles, and methods for implementing this informal method. According to the educators, mastering this method will enhance professional practice, facilitate knowledge application in dissertation writing, enable group research in solving pedagogical problems, change practices, and foster the development of reflective practitioners and teacher-researchers.

IV. DISCUSSION

Achievements and Opportunities for Increasing Research Activity Among Educators Using Action Research in the Republic of Kazakhstan

In the Kazakhstani periodical scientific and pedagogical literature, although there is a focus on the implementation of informal research methods in the higher education system, the number of studies is quite limited. An analysis of research related to educational issues in Kazakhstani scientific publications showed that the main research directions are: the integration of proven effective research methods; the modification of professional training for students and young educators towards enhancing research competence; and the study of psychological mechanisms and components of research competence - reflective, communicative, organizational, and project competencies. There is a noted potential to reduce the gap between theory and practice in professional training through the systematic integration of the Action Research approach and its types into the education system (Rizakhodjaeva et al., 2022; Maigeldieva et al., 2021). The necessity to enhance the research skills of future teachers (Sherimova, 2023; Kariev, et al., 2023), the research culture of future specialists in the field of education (Mamytbaeva et al., 2021; Toktarbekova, 2021; Sholpankulova & Zhalgasova, 2020; Shavaliyeva et al., 2022; Buribaev et al., 2023), and the improvement of reflective practice Uzakbayeva S. is emphasized. Although scientific research identifies the need for practice-oriented informal forms of learning, the term "informal education" was officially used for the first time in the regulatory documents of pedagogical education in the Concept for the Development of Higher Education and Science in the Republic of Kazakhstan for 2023-2029. This document justifies the potential for recognizing the outcomes of informal education based on competencies, ensuring the validation of educational results. Their maintenance and further development may be directly related to ongoing informal learning. This document provides a boost for expanding pedagogical knowledge regarding the improvement of the research process in education and the use of informal research forms to change and enhance the professional practice of educators.

In this Concept, the primary focus is on pedagogical education and the preparation of educators for a new era by strengthening scientific

potential and developing research competencies through the integration of courses such as “Action Research” and “Research Methods and Data Analysis in Education” into educational programs. However, the insufficient level of understanding of Action Research theory and other informal research methods in the context of Kazakhstani pedagogical education, along with the need for the generalization and classification of research methods aimed at transforming professional practice, highlights the necessity for systematic research on the integration of research methods within the context of university pedagogical education, taking into account the best global practices.

The analysis of the experience of integrating informal research methods into the educational system of the Republic of Kazakhstan has shown that the priority in recent years has been given to the secondary education system, where the Nazarbayev Intellectual Schools Teacher Training Center (NIS TTC) has collaborated with the University of Cambridge’s Department of Education to train school teachers in Action Research techniques, lesson study, and self-directed learning.

However, there are strong arguments in favor of initiating Action Research at universities: firstly, university educators are closer to the scientific community than school teachers; they understand the methodology of pedagogical research, hold academic degrees, conduct research alongside teaching, participate in research projects, publish articles in peer-reviewed journals, and organize scientific conferences, among other activities. Secondly, there is an opportunity to integrate Action Research into the content of the professional training of future educators and to engage students in a new practice-oriented research methodology. Thirdly, involving future educators, young scholars, and teachers in collaborative Action Research with experienced researcher-scientists offers undeniable advantages, ensuring sustainable development and a focus on long-term results.

Given the high potential of this method in developing the research activity of all participants in the educational process, it becomes essential to seek flexible specialized forms of training for educators based on the needs and intentions to address professional deficiencies within the organizational framework of pedagogical universities and utilizing their resources. In the scientific ecosystem of pedagogical universities in Kazakhstan, there

is a pressing need to enhance the research activity of educators based not only on formal but also on informal research, to strengthen the integration of scientific results into teaching practices, and to involve students in research activities. Efforts in this direction, among other initiatives, are being carried out within the framework of the grant project “Theory and Technology for Developing Research Activity of University Educators Based on the Integration of Informal Research Forms like Action Research” (AR14872311), funded by the Ministry of Science and Higher Education of the Republic of Kazakhstan, with the goal of developing the theory and technology for enhancing the research activity of university educators through informal research methods such as Action Research. The success and quality of practice-oriented research require comprehensive scientific “equipping” of educators with research methods and technologies as essential tools for addressing research challenges.

Despite university educators’ awareness of Action Research as an informal research method, the decision to participate is associated with certain risks: resistance from some educators towards integrating Action Research into their practices due to insufficient motivation to improve their methods; reluctance to change established traditions and step out of their comfort zones; cognitive dissonance; lack of time for conducting informal research; and fear of accountability for their decisions and their consequences. Overcoming these risks is facilitated by embracing the values of research, which carry hope for future changes based on democratic and humanistic principles and advanced social theories; recognizing their role in transforming existing practices; focusing on conducting Action Research to become true scientific mentors and facilitators of active student research; and involving students in collaborative research to enhance the quality of pedagogical education, understanding that students are the vital link between schools and universities.

From the perspective of developing higher education pedagogy in Kazakhstan, several arguments can be made in favor of Action Research:

1. The Action Research concept reveals new research directions through the convergence of evidence-based practice and practice-oriented science.
2. Action Research provides a deeper understanding of pedagogical issues through teachers’ own practical investigations.

3. The terminological framework of higher education pedagogy is enriched by the introduction of new definitions, methods, and research forms.
4. The issue of transitioning university educators into the status of researcher-teachers is brought to the forefront.

Action Research facilitates the transformation of a teacher's role from purely pedagogical to scientific-pedagogical, significantly enhancing their research activity through the mastery of constructive research practices, the development of social and professional methodological competencies, reflective practices, increased motivation for research activities, activation of creative abilities, teamwork, and the establishment of a professional community of educators.

Criteria for the effectiveness of the informal Action Research method can include:

1. The quality of transformations, reflected in the correlation between the actual outcomes of higher education activities and the objectives set in educational policy.
2. The economic criterion reflects the relationship between achieved results and the time, effort, and other resources expended.
3. The motivation criterion.
4. The criterion of personal growth and self-development of educators.
5. The criterion for enhancing competencies that ensure productive teaching.
6. The criterion for the advancement of scientific knowledge during the research process.

At the same time, several issues hinder the implementation of informal research, as well as any innovations in higher education:

1. A specific method is not always a universal solution for current problems.
2. The method is applied in specific contexts and aimed at solving particular issues, which requires contextual consideration.
3. A new method must undergo experimental validation before broad integration into the educational landscape.
4. The introduction of a new research method has two aspects: a technological one (related to the specifics of its use) and a personal one, tied to the human factor.

Action Research aims for transformative changes through the integration of practice and research, restructuring the educational process within organizations.

It is expected that a new generation of teachers and future educators, having mastered the theoretical and methodological foundations as well as practical skills for applying informal research methods, will systematically utilize them in their professional activities. Experience from conducting training seminars and professional development courses on integrating Action Research has demonstrated their demand and effectiveness. An important condition is the qualification improvement directly within the educational organization, which allows for interventions "here and now," addressing existing problems using available resources and interested colleagues, including student involvement.

The formation of a new generation of university educators is based on the model of a teacher-researcher, a reflective practitioner with high research activity, who can confidently apply both formal and informal research methods in the context of their own practice. Critical evaluation of their practice, awareness of the need to step out of their comfort zones, ongoing diagnostics, analysis, and problem-solving, collaboration with like-minded colleagues, and student engagement will enhance the level of research activity and competence among educators, reduce formalism in their work, and increase their creative synergetic potential based on the application of the Action Research methodology.

In the future, it is necessary to involve educators with varying scientific and pedagogical experience in the research, expand the scope of the study to include pedagogical universities across the country. The experience gained will facilitate the validation of achieved results, assigning qualifications based on informal education and work experience.

The study sample is limited to young scholars and educators, which does not allow for the generalization of results to university teachers with more extensive pedagogical experience. The research was conducted at the Kazakh National Pedagogical University, a leading pedagogical institution in the country with a unique local educational environment, which necessitates comparative studies with regional pedagogical universities. This research was pilot in nature,

yielding preliminary results regarding the demand for the method and its significance in enhancing research activity, indicating that further comprehensive studies in this area are needed.

V. CONCLUSION

The subject of the study was the modern trend of enhancing research activity among university educators—namely, the informal method of Action Research, its possibilities, advantages, and prospects for implementation within the higher pedagogical education system of the Republic of Kazakhstan. A significant indicator and driver for increasing research activity and competence within higher education is the shift in how activities are conducted and the content of those activities—not merely updating knowledge, but engaging in continuous investigation of one’s own practice and transforming it accordingly. The novelty of this study lies in describing the new experience of integrating the research method into the training of young scholars and educators in pedagogical universities, which had previously been primarily applied at the school education level.

ETHICS STATEMENT

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Research Ethics Board of the Abai Kazakh National Pedagogical University for research involving

people. Informed consent was obtained from all subjects participating in the study.

CREDIT AUTHOR STATEMENT

Aiman Berikkhanova, conceptualization, methodologies, data curation, formal analysis, supervision, project administration, fundraising. **Elaine Wilson**: conceptualization, methodologies, data curation, formal analysis, supervision. **Lyaziza Sarsenbayeva**: conceptualization, methodologies, data curation, formal analysis, initial draft preparation, writing, reviewing and editing. **Bayan Sapargaliyeva**: writing, reviewing and editing, fundraising. **Fatima Assilbayeva**: data curation. **Aigul Iskakova**: data curation. All authors have read and agreed to the published version of the manuscript.

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DECLARATION OF COMPETING INTERESTS

The authors state that they possess no known competing financial interests or personal relationships that may have influenced the work presented in this paper.

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