

# Analysis of the Activities of Teacher Professional Development Institutions Based on Pedagogical Survey Data

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**ABSTRACT:** This article presents the results of an analysis of the activities of institutions providing in-service teacher training in the southern region of Kyrgyzstan. Despite the recognized importance of in-service teacher training for improving the quality of education in the country, the practical effectiveness of existing programs remains insufficiently studied. This study evaluates the activities of in-service teacher training institutions based on data from a pedagogical survey conducted among teachers in the country's southern regions. The aim of the study was to identify the strengths and weaknesses of existing programs, determine factors influencing student satisfaction, and propose ways to improve the in-service teacher training system in the context of regional specificities. The study's methodological framework utilized a systems-based and competency-based approach. Methods used included analyzing regulatory documents and educational materials from the Ministry of Education and Science of the Kyrgyz Republic, surveying 510 teachers (2022-2023), 328 teachers (2023-2024), and 250 principals of general education schools in southern Kyrgyzstan (2023-2024). The data obtained were subjected to quantitative and qualitative analysis: satisfaction indicators were calculated, and hypotheses were formulated regarding the impact of course format and content, faculty qualifications, and learning environments. These results can serve as a basis for developing organizational and methodological changes aimed at improving the effectiveness of continuing teacher education institutions and facilitating the adaptation of the education system in southern Kyrgyzstan to global challenges and labor market demands.

**Keywords:** advanced training, pedagogical survey, professional development, educational institutions, student.

## I. INTRODUCTION

In the context of globalization, one of the most pressing tasks of the system of advanced training for teachers is the development of new, more effective mechanisms for management and professional growth that correspond to the dynamic nature of modern society, changing market relations and growing demands on teaching staff [1]. The education system, particularly in the field of pedagogy, is constantly evolving and adapting to the challenges of the modern era. Given the increasing demands on teachers' professional competence, it is especially important to understand which approaches to their development are considered the most effective. Therefore, contemporary research on Teacher Professional Development (TPD) covers a

wide spectrum of issues from the conceptual understanding of lifelong learning to the analysis of specific professional development models [1, 2]. The content of advanced training courses should be differentiated taking into account the qualifications of teachers, their teaching experience and the type of educational institution in which they work. Well-designed and effectively implemented courses significantly contribute to the professional growth of teachers, allowing them to keep abreast of the latest trends in education, master innovative technologies and teaching methods, improve the quality of lessons and make their work more exciting and productive. Particular importance is attached to curricula covering both psychological and pedagogical disciplines and subject-methodological aspects of teaching, which contributes to improving the quality and relevance of teacher training [2].

Teaching is a complex and highly responsible profession requiring substantial effort, and many challenges arise independently of the teacher's actions. To maintain a high level of competence, teachers must regularly participate in professional development activities, as they are responsible for implementing programs and strategies aimed at improving student performance and overall educational quality [2]. A qualified specialist is also characterized by an understanding of the limitations within the profession. Continuous professional development helps eliminate misconceptions about professional skills and promotes the acquisition of research competencies. Koyshegulova et al. [3] emphasize that a teacher's ability to formulate hypotheses, collect observational data, process information, and draw conclusions is of significant importance. Evolving educational standards, digital transformation, and the introduction of innovative approaches require teachers to continuously update their expertise and practical skills.

With the rapid development of technologies, emerging teaching methods, and changing qualification requirements for educators, professional development institutions have become key actors within the system of lifelong education. These institutions are expected to provide teachers with relevant knowledge and skills necessary for effective work in the contemporary educational environment, in line with societal demands, innovative pedagogical approaches, and the priorities of modern schools. The main objective of Professional Development (PD) courses especially in the context of digital education is to help educators integrate new knowledge into their daily practice, ultimately transforming their instructional methods. Although such integration is recognized as a key aspect of digitalization [4], the activities of PD institutions require systematic scientific analysis to enhance their effectiveness. Nevertheless, PD programs often remain ineffective due to outdated assumptions about teacher learning and top-down approaches that overlook participants' individual needs and fail to connect with their real teaching contexts [5]. In addition, curriculum developers often lack understanding of how teachers learn, develop agency, and engage in collaborative activities. The effectiveness of PD programs, in our view, largely depends on their alignment with the actual needs of educators.

The modern education system of Kyrgyzstan, as in many other countries, faces the need for continuous renewal of educational content, teaching methods, and organizational forms. Under these conditions, the importance of sustained professional growth among teaching staff becomes increasingly evident. In developing countries, TPD plays a particularly significant role in addressing disparities between urban and rural schools, supporting curriculum reforms, and strengthening teachers' digital competencies (UNESCO, 2023) [6]. However, in Kyrgyzstan, systematic empirical data on the effectiveness of regional TPD institutions remain limited. Existing institutes for teacher professional development face a number of challenges that hinder their ability to function effectively and adapt to modern requirements. At present, Kyrgyzstan lacks a unified institutional tool for the objective assessment of teachers' professional competence. Course design often relies primarily on formal requirements of national or regional standards, while teachers' own perceptions and needs are insufficiently considered [7]. Assessment is typically limited to voluntary certification and exam performance. The absence of differentiated criteria and assessment rubrics prevents the identification of strengths and weaknesses in teachers' professional growth and complicates the development of individualized learning trajectories.

Educational reforms in Kyrgyzstan were examined in the studies of R. Dzharparova [8], A. Sultanova, Zh., Anarbaeva [9]. However, a comprehensive regional analysis of professional development institutions, based on large-scale surveys of teachers and school principals, has not yet been conducted. This study fills this gap

by providing comparative data from the Osh, Jalal-Abad, and Batken regions of Kyrgyzstan. The research analyzes the activities of organizations providing professional development services based on a large-scale survey of teachers and school principals who have completed PD courses in these regions. The present study examines the activities of PD institutions drawing on survey data collected in 2022–2024 among educators from several southern regions of Kyrgyzstan. The survey method enables the collection of objective data on course content, formats, and organization, while also assessing participant satisfaction and identifying weaknesses and areas for improvement. The study pursued the following objectives:

- To analyze the legal framework governing the activities of professional development institutions in the Kyrgyz Republic.
- To develop a data collection tool (questionnaire), describe the sample, and conduct a survey among teaching staff in the Osh, Jalal-Abad, and Batken regions.
- To identify the features of training organization and professional development within regional PD institutions.
- To determine teachers' professional development needs with consideration of regional specificities.
- To formulate recommendations for improving the activities of PD institutions in the Osh, Jalal-Abad, and Batken regions.

## II. LITERATURE REVIEW

Many researchers argue that traditional approaches to teacher training require revision in order to meet the demands of the information society and the challenges faced by contemporary education systems. In recent years, the accelerated transformation of the educational environment has turned the professional development of teachers into one of the key priorities of both educational policy and practice.

Fundamental contributions to the theory of professional development were made by B. S. Gershunsky [8], P. V. Khudominsky [9], and Yu. N. Kulyutkin [10]. Khudominsky emphasized a systems approach to developing retraining programs and the need to harmonize their components. Gershunsky analyzed the concept of continuous education from a philosophical-axiological and axiological perspective, linking it to the comprehensive development of the individual. Kulyutkin emphasized the role of postgraduate education in shaping teachers' professional identity. M. Postholm [11] notes that effective professional development should combine formal education with opportunities for independent and collaborative professional growth.

European researchers demonstrate the contribution of professional development to the development of competencies in higher education. Their research emphasizes the importance of adapting PD programs to the regional context, teachers' digital competencies, and the needs of specific educational organizations. The expansion of the digital environment and transformative changes in pedagogy make teacher professional development a central focus of both educational policy and practice. Thus, O. Berezhnaya [12], van Dijk [13], Higuera-Rodriguez et al. [14], S. Sims [15], L. Darling-Hammond [1], S. Fernandez [16] analyze the effectiveness of professional development, modern methodological approaches, and digital literacy. E. Kennedy [17] points to the potential of Massive Open Online Courses (MOOCs) and blended learning formats to increase teacher engagement. F. Korthagen [5] examines "Professional Development 3.0," emphasizing the need for practice-oriented, reflective, and networked teacher learning. Bennett et al. [18] show that involving teachers in the processes of developing and integrating technologies into teaching improves their professional competencies. From a sociocultural perspective, E. Abakah [19] identifies three ways for teachers to engage in professional development: formal training, informal learning, and independent professional development. The effectiveness of professional development is closely linked to reflective practice, collaboration, and active participation of teachers in decision-making. However, Sims et al. [15] note that empirical evidence demonstrates only moderate improvement in student learning outcomes, which is partly due to the lack of a unified model of effective professional development.

In Kyrgyzstan, studies by M. R. Baltabaev [20], L. P. Kibardina [21], I. B. Bekboev [22], B. A. Apyshev [23], K. Kimsanov and K. Akmatov [24], B. Zuluiev [25], and S. Iptarov [26] address the issues of professional development in the post-Soviet context, paying particular attention to teacher motivation, quality control, and regional differences. For example, Apyshev [23] notes that a lack of self-development or ineffective

participation in professional development courses often leads to professional stagnation. Bekboev [22] emphasized the need to integrate internal quality indicators into professional development planning, rather than relying solely on formal standards. Regional specificity is a key factor. A study by K. Akmatov and T. Temiralieva [27] demonstrates the importance of considering the socio-cultural and economic conditions of southern regions when developing professional education programs.

Thus, the literature notes a shift from rigid, standardized models of professional education to flexible, interactive, and context-adapted strategies. This approach forms the conceptual basis of the current study, which aims to evaluate the performance of teacher training institutions, taking into account regional characteristics, digital competence, and the practical focus of the courses.

### III. MATERIAL AND METHOD

The methodology of this study is based on the principles of empirical pedagogical analysis and the integration of quantitative and qualitative methods for a comprehensive study of the PD processes of teaching staff. Primary data for this study were collected through a survey conducted among teachers and school administrators in the southern regions of Kyrgyzstan Osh, Jalal-Abad, and Batken oblasts. The purpose of the survey was to identify the experiences of participants in professional development programs. A combination of methods was used to analyze the responses: descriptive statistics were used to process quantitative data, interregional comparisons revealed differences between regions, and qualitative content analysis was aimed at interpreting open-ended responses.

#### 1. DATA COLLECTION AND INSTRUMENTS

The questionnaire consisted of closed-ended and open-ended questions covering:

- Accessibility and organization of courses: respondents were asked to rate how easily they could access relevant training programs.
- Satisfaction with program content: the focus was on the perception of relevance, practical significance and overall quality of the training materials.
- Applicability of acquired knowledge to practice: participants assessed the extent to which new knowledge and skills could be used in their professional activities.
- Quality of interaction with teachers: this part of the questionnaire examined how effectively teachers interacted with participants and supported them during the learning process.
- Needs for new forms of professional learning identification of the most in-demand and promising forms of PD.

A comparative analysis was conducted across regions and teacher profiles including subject specializations, allowing for the identification of regional differences in perceptions of PD programs and pinpointing critical gaps in the current system. The use of this methodology made it possible to conduct a comprehensive study based on reliable empirical data, which became the basis for formulating well-founded conclusions and developing proposals for optimizing the system of professional growth of teachers. Quantitative data were processed using specialized statistical procedures in SPSS 23.0 including descriptive statistics, correlation analysis, and reliability checks and descriptive statistics and cross-regional comparisons. Open-ended responses were analyzed using thematic content analysis. Ethical standards of consent, anonymity, and confidentiality were strictly observed.

#### 2. RESEARCH SAMPLE

The total sample consisted of 838 teacher- respondents and 450 school principals or their deputies. The sample was stratified by region and job title to ensure representativeness. The primary dataset was collected during the 2022–2023 and 2023–2024 academic years as part of an original research project and pilot implementation conducted at the Osh Institute of Education, the Batken and Jalal-Abad regional methodological centers, and more than 100 secondary schools in these regions. Particular attention was paid

to higher education institutions such as Osh State University (OshSU) and Osh State Pedagogical University named after A. Myrsabekov (OshPU), which are actively involved in teacher training.

### 3. VALIDITY AND RELIABILITY

To ensure methodological rigor:

- standardized pedagogical indicators described by Yu. K. Babansky [28] and E. V. Kiseleva [29] were incorporated to strengthen interpretive accuracy.
- Babansky's framework (target, content, and operational components) and Kiseleva's criteria (planning, methodological competence, classroom management, learning outcomes, reflective practice) provided theoretical grounding for interpreting the empirical findings.

These methodologies are widely recognized in pedagogical research and have proven effective in assessing the quality and effectiveness of educational processes.

Yu. Babansky's methodology offers a developed and comprehensive system for assessing the effectiveness of teaching activities based on three main components. The first, target-based, analyzes the conformity of stated educational goals with actual results, ensuring the purposefulness of the entire learning process. The second, content-based, evaluates the scientific validity and didactic adequacy of teaching materials, verifying their compliance with modern standards and the age characteristics of students. The third, operational-activity-based approach, critically analyzes the suitability, effectiveness, and efficiency of teaching methods, techniques, and tools used in practical pedagogy. This approach utilizes a number of measurable indicators, including student motivation and engagement, the percentage of goal achievement, and the efficient use of allotted teaching time [28]. Similarly, A. Kiseleva's methodology offers a structured system for quantitatively assessing teachers' professional performance. It covers several key aspects, such as lesson planning, methodological competence, classroom and team management, learning outcomes, and student achievement. Importantly, it also emphasizes teachers' capacity for self-reflection and reflection on their professional practice [29]. Together, these two approaches provide both a solid theoretical foundation and a reliable practical base. They facilitate the development of effective research instruments and enable a thorough interpretation of results, reflecting both the current professional level of teachers and their dynamic growth over time within the broader context of professional development.

## IV. RESULTS

At the current stage of educational development in Kyrgyzstan, demands on teachers' performance are growing, accompanied by active government initiatives to improve their professional conditions. These measures include salary increases, reduction of bureaucratic burdens, provision of housing through mortgage programs, development of international cooperation, and financial support for participation in international internships. Such initiatives aim to stimulate teachers' motivation for lifelong learning, Continuous Professional Development (CPD), and professional development, which, in turn, positively impacts the overall quality of education.

It is generally recognized that a teacher's professional development does not end with higher education but continues throughout their working career. According to national regulations, teachers in Kyrgyzstan are required to undergo professional development and retraining courses every five years, which are typically organized by professional development institutes or departments of pedagogical universities [30]. Thus, continuous pedagogical education is viewed as a systemic process aimed at maintaining, updating, and developing teachers' professional competencies throughout their working careers. In accordance with the State Educational Standard (SES) of the Kyrgyz Republic, all teachers are required to annually confirm their qualifications by completing at least 72 academic hours of certified training [30]. The institutional framework for teacher professional development addresses the following objectives:

- Promptly informing teachers about newly adopted educational policies and regulations.
- Promoting the implementation of modern teaching methods and educational technologies.
- Supporting peer learning and the exchange of best practices.

- Stimulating the professional and personal growth of teaching staff [31].

To improve the effectiveness of professional development institutions and centers, a comprehensive scientific analysis is necessary. This includes an assessment of existing teaching methods, an analysis of teachers' needs, and the identification of gaps in their knowledge and skills. A scientific approach allows not only to identify existing problems but also to develop sound strategies for addressing them. Analyzing the effectiveness of professional development programs helps identify successful approaches and those that require improvement. For example, empirical research may reveal that some teaching methods do not meet teachers' expectations or do not lead to the desired learning outcomes. The obtained results serve as a basis for adjusting the design and implementation of the training courses.

To date, no comprehensive regional analysis of teacher professional development institutions has been conducted based on large-scale surveys of teachers and school principals in southern Kyrgyzstan. This study attempts to address this gap by providing comparative information on the situation in Osh, Jalal-Abad and Batken regions of Kyrgyzstan. Table 1 clearly illustrates existing gaps (for example, limited access to professional development, weak integration of digital technologies) and how these gaps impact specific research objectives. This enhances the study's clarity.

**Table 1.** Conceptual framework of the study.

Section	Content
Theory	Modern PD approaches (Darling-Hammond, 2017; Postholm, 2012); Digitalization in education (UNESCO, 2023); Individualization and practice-oriented programs (Kulyutkin & Sukhobskaya, 2003); Regional specifics (Kudaiberdieva, 2025). Built on global consensus on continuous, practice-oriented, digitally infused PD (Darling-Hammond, Korthagen), considering socio-cultural and regional specifics of Kyrgyzstan (Baltabaev, Apyshhev, Akmatov).
Gaps	Insufficient digital integration; Limited regional PD access; Weak theory–practice link. Reveals gap: no comprehensive regional analysis of PD institutions based on empirical data from teachers and school principals in Osh, Jalal-Abad, and Batken.
Objectives	Analyze current PD state in southern Kyrgyzstan; Identify preferences for 72-hour courses; Determine regional differences and needs; Develop practical recommendations. This stage addresses the identified gap.

### 1. ANALYSIS OF TEACHERS' PREFERENCES FOR CONTINUING TRAINING COURSES IN THE 2022-23 ACADEMIC YEAR

In the 2022–2023 academic year, 510 respondents participated in the survey, including 248 teachers from the Osh region, 162 from the Jalal-Abad region and 100 from the Batken region (Table 2). The survey sample included teachers of primary education, Russian language and literature, geography, mathematics, Kyrgyz language and literature, computer science, history, music, chemistry and biology, foreign languages, fine arts, social studies, physical education, and physics. Despite the diversity of subject areas, the responses were generally consistent in meaning and content, allowing the researchers to refrain from subject-specific data analysis.

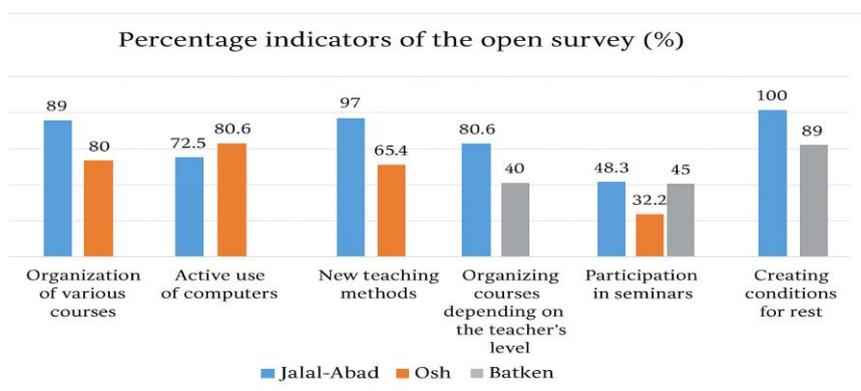
The survey included both closed and open-ended questions addressed to teachers of general education institutions. Among the open-ended items, the following question proved to be the most significant: “What should be prioritized in enhancing teachers’ professional competencies?” All participants actively responded to this question. Thus, 85% of teachers in the Batken and Jalal-Abad regions noted the need to increase the number of professional development courses. Meanwhile, 80,6 % of teachers in the Osh region emphasized the need to use modern technology, actively utilize computers, implement new teaching methods, tailor courses to each teacher's level of preparedness, work individually with teachers, participate in various seminars, and create conditions for recreation and self-education. Based on these responses, it can be concluded that teachers in the Osh region are more actively participating in professional development

courses and are well informed about their implementation. The following tables can be used to visualize the data: the first shows the quantitative indicators of teacher participation in the three regions, and the second shows the percentage distribution of responses to the question "What should be considered when improving teachers' professional competencies?".

**Table 2.** Number of surveyed teachers by region (2022–2023).

Region	Number of Respondents
Osh Region	248
Jalal-Abad Region	162
Batken Region	100

Analysis of the responses from teachers in the Jalal-Abad and Batken regions revealed that they place particular emphasis on the need for professional development courses. In response to the question, "What determines the accessibility of quality education for students?" Across all three regions, 99% of teachers identified teachers' professional competence and the adequate availability of educational materials as the main factors.



**FIGURE 1.** Percentage of responses to questions on improving teachers' professional qualifications.

Special attention should be given to the issue of mastering computer technologies, which was highlighted by 74% of respondents. Addressing this issue should be a priority not only for professional development institutions but also for the general education schools themselves. One of the modern requirements for teachers is the ability to effectively use computer technologies in the classroom. Equally important, however, is that teachers can apply these skills in practice within their own schools.

The advantages of proficiency in computer technologies are evident: they significantly reduce the time required for lesson and lecture preparation and open up opportunities for introducing creative ideas into the educational process. For example, skills in SMM technologies (social media marketing) can be useful for a teacher who wants to create their own blog, plan content, or write engaging and attention-grabbing texts for their audience. To achieve this, it is necessary that subject classrooms in professional development institutions, as well as the schools themselves, are equipped with modern computer technologies. This will be an important step toward preparing highly qualified teachers.

## 2. RESULTS OF A SURVEY OF SCHOOL PRINCIPALS IN AREAS OF PROFESSIONAL DEVELOPMENT

The administrative corps is mostly oriented only towards performing departmental tasks. Therefore, there are two main directions for professional development of leaders and employees of the educational system: mastering new technologies for managing the educational process, principles, strategies, and practices, as well as preparing managers for the strategic development of the industry. Consequently,

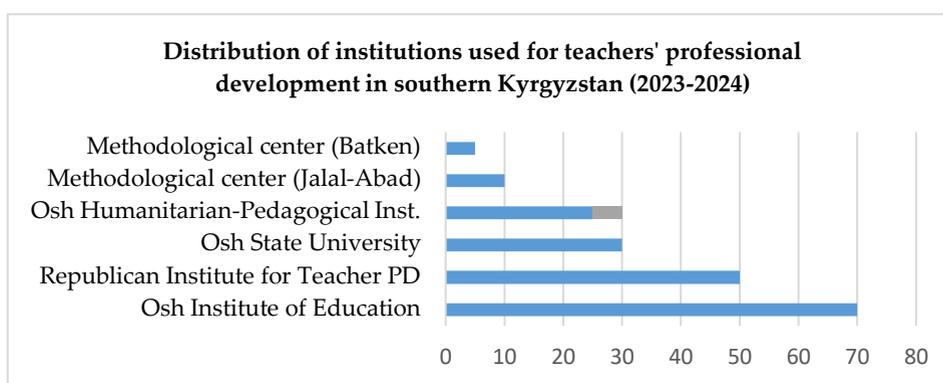
educational institutes and regional methodological centers must make radical changes in the topics and directions of professional development courses for school leaders. In the 2023–2024 academic year, a set of questions was prepared and distributed to conduct a survey among school directors, covering 250 from Osh Oblast, 120 from Jalal-Abad Oblast, and 80 from Batken Oblast, respectively.

70% of respondents indicated that they rely on the Osh Institute of Education for teachers’ professional development, 30% on Osh State University, 25% on the Osh Humanitarian-Pedagogical Institute, 50% on the Republican Institute for Teacher Professional Development, 10% on the methodological center of education in Jalal-Abad Oblast, and 5% on the methodological center of education in Batken Oblast. Nearly all respondents reported that mentors are appointed in schools to support young teachers according to an approved plan. It is expected that no more than 10% of teachers in each school will participate in professional development annually, and within five years, 80% of teachers will have undergone professional development courses. All respondents stated that after completing courses, teachers are expected to share the knowledge gained with colleagues, primarily through open lessons. The interest of school leaders in teachers’ professional development is largely driven by the “requirement of mandatory course completion” [32].

**Table 3.** Distribution of school principal respondents by region (n = 450).

Osh Oblast	Jalal-Abad Oblast	Batken Oblast
250	120	80

This diagram illustrates the results of a survey of school principals and teachers, demonstrating that the Osh Institute of Education is currently the only institution in the southern region fulfilling this task. Compared to other methodological centers, the Osh Institute of Education offered a specialized course for creative teachers, organized by the Innovation Office, which made it somewhat distinctive. The Institute can be viewed as a unified space for teachers to share experiences, collaborate, and discuss innovations and changes in the pedagogical field. The local methodological centers, apparently, are not sufficiently utilized compared to it.



**FIGURE 2.** Educational institutions focused on teacher professional development.

Almost 100% of respondents indicated that schools are assigned mentors to enhance the professional skills of young teachers, who implement this work according to an approved plan. It is expected that within one academic year, the level of professional development in each school will reach a maximum of 10%, and within five years, 80% of teachers will have completed professional development courses. 100% of respondents indicated that after completing the courses, teachers would share their acquired knowledge with colleagues, primarily through open lessons. As D. Grak argues, the pedagogical field needs to be

granted more freedom and independence in decision-making, and this should encompass all areas and fields [33].

### 3. ANALYSIS OF TEACHER ENGAGEMENT IN PROFESSIONAL DEVELOPMENT FOR 2024

As of 2024, the population of Batken Region was 29,579, Osh Region 1,114,000, and Jalal-Abad Region 1,311,007. A significant number of educational professional's work in these regions, contributing daily to the teaching and upbringing of the younger generation, while continuously improving their own professional skills. At the time of the study, several hundred schools operated across the three regions, employing thousands of teachers. The survey was conducted in three stages:

- In the first stage, respondents were asked to evaluate the five main areas of professional development courses.
- The second stage focused on questions related to improving the educational process within the courses.
- The third stage examined aspects of interaction between general education institutions and organizations conducting the courses, as well as the experiences of teachers who had already completed professional development training.

In the 2024 survey, 328 respondents participated, expressing their opinions on the following components of the 72-hour courses:

- Legislative and regulatory acts of the education system of the Kyrgyz Republic (6 hours).
- Pedagogical and psychological aspects of education (6 hours).
- Digitalization of the educational process (6 hours).
- Theory and methodology of teaching subjects (54 hours).
- Final conference (2 hours).

Responses from participants, collected in both online and offline formats, were distributed as follows: 34% of respondents preferred the third direction digitization of the learning process. At the same time, 30% of respondents favored the fourth area "Theory and Methodology of Teaching Subjects (54 hours)" noting the importance of updating course programs, increasing the number of practical sessions, and participating in open lessons to exchange experience. These data indicate that teachers are particularly interested in the practical aspects of teaching and strive to engage actively in such activities. This emphasizes the need to further develop curricula that integrate both theoretical and practical teacher training, requiring teacher training institutes to revise programs for deeper immersion in teaching methodology and subject theory. Additionally, 25% of respondents highlighted the importance of psychological and pedagogical preparation. This module proved relevant not only for teachers but also for social educators and school administrators. The high level of interest in this area underscores its significance for organizing the educational process, conducting educational work, and fostering effective interaction with students, parents, and colleagues.

Regarding the area "Legislative and Regulatory Acts of the Education System of the Kyrgyz Republic (6 hours)", only 6% of surveyed teachers expressed interest. This relatively low engagement suggests limited awareness of the role of legal literacy in professional practice. Many teachers may not fully recognize the importance of legal knowledge, which can negatively affect the quality of educational services. Nevertheless, in the context of a rapidly evolving educational paradigm and constant updates to legislation, familiarity with regulatory acts has become an essential requirement for teachers. Adequate understanding of legal norms allows educators to protect their rights, comprehend professional responsibilities, and ensure high-quality teaching.

As for the fifth area "Final Conference (2 hours)" only 5% of respondents showed active participation. This may be because such sessions are often perceived as formal conclusions to the courses and do not always engage teachers. In many cases, these sessions are limited to completing questionnaires or submitting brief written feedback, which reduces participant involvement.

**Table 4.** Teachers' preferences for 72-hour professional development courses (2024 survey, n = 328).

Course Area	Duration	% of Respondents	Key Aspects Highlighted by Teachers
Legislative and regulatory acts of the education system of the Kyrgyz Republic	6 hours	6%	Limited awareness of legal literacy; importance for understanding professional responsibilities
Pedagogical and psychological aspects of education	6 hours	25%	Relevant for teachers, social educators, and school administrators; supports organization of educational process and interaction with students and colleagues
Digitalization of the educational process	6 hours	34%	Searching for information online; using technologies for online learning; basics of electronic document management; working with interactive boards and other digital teaching tools
Theory and methodology of teaching subjects	54 hours	30%	Updating course programs; increasing practical sessions; participation in open lessons; combining theoretical and practical training
Final conference	2 hours	5%	Formal conclusion of courses; limited engagement through surveys or brief reflections

This result highlights the importance of developing the information and communication environment in education and demonstrates that teachers recognize the need to integrate modern technologies into their teaching practice.

Within this area, educators emphasized the following aspects:

- Searching for information on current issues on the Internet.
- Using technologies for effective participation in online learning.
- Fundamentals of electronic document management.
- Working with interactive boards and other digital teaching tools.

These findings underscore the need for further digital transformation of the educational environment, which aligns with contemporary challenges and requirements of the education system. Therefore, in the current context of school education digitization, the preference for this area by the majority of teachers appears natural.

## V. DISCUSSION AND FUTURE RESEARCH

The analysis of the obtained data allowed us to identify several key areas for interpretation and discussion. First of all, the prevailing interest in the digitalization of the educational process reflects not only the general technological trend in pedagogy, but also the growing understanding among teachers of the need to adapt to the requirements of the digital environment. However, despite the high level of interest, many teachers are still not sufficiently prepared to effectively use digital tools, which indicates the need for systemic support from advanced training institutions. The problem of practice-oriented training is also clearly visible in the preferences of respondents. Teachers expect advanced training courses to include not just lecture material, but active discussions of real situations, model lessons, and the exchange of professional experience among colleagues. This indicates the need to move from traditional training formats to more interactive, project-based, and flexible models of training specialists. The identified regional disparities warrant special attention. While educators in the Osh region exhibit a relatively high level of readiness to embrace innovation and digital practices, respondents from the Jalal-Abad and Batken regions emphasize the need for material support and greater accessibility to training. These findings underscore the necessity of a differentiated approach to the design of professional development programs one that takes into account both regional resource constraints and the level of teachers' digital literacy.

Interviews with school administrators confirmed that the formal completion of training requirements does not always lead to improvements in the quality of the educational process. One major reason is the

absence of mechanisms for consolidating and applying newly acquired knowledge in practice. This highlights a critical gap in post-training support systems and indicates weak coordination between teacher training institutions and schools. The key contradictions identified in the course of the study include the following:

- A mismatch between the high motivation of teachers and their limited opportunities to fully participate in contemporary training programs.
- A disconnect between course content and the actual professional needs of teachers in different regions.
- Weak integration of digitalization into everyday teaching practices.
- Insufficient involvement of school administrations in developing individual educational trajectories for teachers.

These issues point to the need for a comprehensive rethinking of strategies for organizing teacher professional development. This should prioritize personalization, practical relevance, digital transformation, and regional adaptation of educational programs.

### 1. PRACTICAL RECOMMENDATIONS

Considering the identified results and the current situation with advanced training of teachers in the southern regions of the Kyrgyz Republic, the following practical measures are proposed:

- Development of modular programs taking into account regional characteristics. Courses should reflect the specifics of the educational environment, the level of material and technical equipment and digital literacy of teachers in different territories. Particular attention should be paid to the adaptability of programs and the possibility of forming individual educational trajectories.
- Introduction of hybrid and online learning formats. The use of distance technologies, video conferencing and electronic resources will allow reaching a larger number of teachers, especially in remote areas, while reducing the costs of logistics and organizing courses.
- Increasing the practical focus of courses. It is necessary to expand the volume of practical classes, master classes, lesson modeling, case methods and project activities. It will be effective to involve mentors - experienced teachers implementing modern methods.
- Creation of a support system after completion of the courses. It is necessary to implement mechanisms to support teachers after training, including consultations, webinars, supervision and mentoring programs aimed at consolidating knowledge and integrating it into the educational process.
- Developing a digital platform for monitoring professional development. An information portal can be created on the basis of the Ministry of Education or regional institutes to record teachers' participation in programs, record results, provide recommendations, access materials and generate reports.
- Actively involve heads of educational organizations in course planning. School administrations should be given the opportunity to formulate their needs and participate in the development of educational modules, including topics on management, strategic planning and team building.
- Integrating digital pedagogy and legal literacy. The content of courses should include not only teaching methods, but also mandatory modules on digital security, working with electronic educational platforms and legal aspects of pedagogical activity.
- Creating regional centers of pedagogical excellence. Such centers, operating at universities and institutes for advanced training, can become platforms for exchanging experiences, holding seminars, open lessons and professional excellence competitions.

It should be noted that the primary goal of these professional development activities is to develop a system of teacher professional development capable of supporting a results-oriented education model [34]. Researchers note that new approaches to teacher training, retraining, and professional development are being explored worldwide; however, there is no consensus regarding the content, organizational forms, and teaching methods in this area. In Kyrgyzstan, this means that both institutes and methodological centers operating within the national education system have the flexibility and right to seek innovative approaches to professional development that best meet the needs of local schools and teachers. Teacher professional development courses should utilize innovative methods and effective formats, and create conditions for

highly qualified teaching, taking into account new educational technologies. Questions such as, "What will happen to teachers after completing the course? Will they be able to apply the knowledge they have acquired?" should be raised by every educational institution offering the courses and their instructors. After all, a teacher who has completed the course should be able to report on the results of their work. In our view, teachers may need not only good teachers but also trainers who can apply acquired knowledge in practice and offer constructive criticism. Implementing these recommendations will improve the effectiveness of the professional development system, enhance teacher motivation, and create a sustainable foundation for qualitative changes in school education in the southern region of Kyrgyzstan. The current study provides reliable information on teachers' perceptions of PD in southern Kyrgyzstan. However, several limitations inherent in the study design and sampling methodology require careful consideration when interpreting the results. The primary data were collected through a cross-sectional survey. Consequently, this methodology captures participants' perceptions and attitudes toward PD programs only at a specific point in time, precluding the possibility of assessing the long-term impact and growth dynamics of teachers after training.

## VI. CONCLUSION

The study identified key aspects and problems associated with the activities of advanced training institutions in the southern regions of the Kyrgyz Republic. The analysis of the survey data revealed a number of urgent needs, including the desire to master digital tools, receive practice-oriented training, and more personalized forms of professional development. The results also revealed significant regional differences in the perception of and access to professional development opportunities, as well as weak integration of learning outcomes into everyday teaching practice. The study revealed the need to create post-course support mechanisms and more active involvement of school leaders in planning professional development programs, which indicates systemic problems in the field of teacher professional development. The practical recommendations developed during the study contain specific measures aimed at modernizing and optimizing the existing professional development system. Their implementation will increase teacher motivation, improve the quality of the educational process, and ensure more sustainable long-term results. Further investigation should focus on in-depth assessment of the effectiveness of post-course support strategies; comparative analysis of regional professional development programs; development of a digital platform for monitoring and supporting teacher professional growth; and evaluation of the impact of professional development on student learning outcomes. Thus, the results of this study may serve as both a theoretical and empirical foundation for improving educational policy in the field of teacher professional development an area of growing significance in light of the ongoing transformation of the education system and rising expectations for teaching quality.

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### Author Contributions

All authors made an equal contribution to the development and planning of the study.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

The data are available from the authors upon request.

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