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The Development of Research Skills as a Strategy for Professional Sustainability of Rural Teachers: The Experience of Kazakhstan

Abstract.

This article presents a comprehensive study of the factors influencing the professional development and sustainability of rural teachers in Kazakhstan, based on a survey of 205 educators. The analysis revealed key barriers, including limited access to training, high workload, a lack of resources, insufficient administrative support, and low motivation. It also identified teachers' demands for new professional development programs. The study notes that involvement in collaborative learning formats (Professional Learning Communities, Lesson Study, Action Research) enhances teachers' professional sustainability. The introduction justifies the research gap: there is little attention in the international literature to the development of rural teachers' own research skills and their connection to sustainability. *The article aims* to demonstrate how the accumulated experience of Kazakhstani educators can enrich the global dialogue on professional development in resource-poor environments. Practical recommendations include increasing investment in infrastructure and resources, implementing coaching and mentorship, and adapting professional development courses to teachers' real needs.

Keywords: *Research skills; professional sustainability; rural teachers; professional development; Kazakhstan; educational policy.*

Introduction

In modern conditions, the effectiveness of education in rural schools is directly linked to the quality of teacher training and support. According to UN Sustainable Development Goal 4 (SDG 4), it is essential to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, 2024).

Achieving this goal largely depends on investment in teachers, their training, and continuous development. However, there is a global shortage of educators: UNESCO estimates that approximately 44 million new primary and secondary school teachers will be needed by 2030 (UNESCO, 2024), with more than half of the current workforce expected to leave the profession by the end of the decade (UNESCO, 2023). These trends are exacerbated by the uneven distribution of qualified personnel and the widespread practice of "out-of-field teaching." These challenges are particularly acute in rural areas due to the isolation of schools, a lack of resources, and high staff turnover.

Most research on teacher professional growth focuses on urban and university settings, while the practices of rural teachers themselves in acquiring research skills remain understudied. There is a particular data deficit for Central Asia. Moreover, the link between the development of a teacher's research culture and their professional resilience is often overlooked. Meanwhile, professional resilience is viewed as a process of overcoming difficulties by relying on personal and external resources, not just an innate trait.

This article analyzes a survey completed by 205 rural teachers in Kazakhstan, which combines quantitative and qualitative data on their education, experience, course participation, professional development barriers, and demands for new programs. *The goal of the study* is to systematize the data and identify the relationship between the level of research skills and teachers'

professional sustainability. *The objectives are:* (1) to describe the demographic profile of the respondents and their working conditions; (2) to identify the main obstacles to professional development and the need for new teaching methods; (3) to compare local data with international trends and derive practical lessons.

Materials and methods

This study is based on an analysis of data obtained from a survey of 205 teachers from rural schools across five regions of Kazakhstan: Kostanay, Karaganda, Turkistan, North Kazakhstan, and Kyzylorda. This broad coverage ensures the representativeness of the sample and allows for the identification of systemic issues.

The survey included questions about the demographic characteristics of the respondents, the frequency and formats of professional development courses they attended, their assessment of the effectiveness of these courses, as well as the main obstacles and their requests for new programs. Open-ended questions allowed for the collection of qualitative data on teachers' experiences with various teaching methodologies, including Action Research.

The data analysis was of a mixed-methods nature. Quantitative data were processed using descriptive statistics, while open-ended responses were subjected to thematic analysis. For the preparation of this report, an additional, thorough verification of all numerical data in the original document was conducted. As a result, inaccuracies in the calculations were identified and corrected, which allowed for the presentation of more reliable and accurate results.

Results and Discussion

The global literature confirms that professional development for teachers in rural schools is often hindered by systemic barriers. Geographic isolation and weak infrastructure limit access to high-quality training programs. For example, in Australia, around 60% of rural residents live too far from professional development centers, while in China, remoteness restricts access to training. The survey of Kazakhstani educators noted "limited access to internet resources and online courses" and "the lack of modern digital tools," which aligns with the global picture of the digital divide.

Administrative burden and bureaucracy also increase stress and staff turnover. According to data from the OECD's TALIS study, a high administrative workload is a key source of stress for teachers. The survey questions in Kazakhstan revealed "a lack of time due to high workload" as one of the main problems, which correlates with foreign findings on the overload of rural educators (OECD, n.d.).

An important concept is a teacher's professional resilience, which is the ability to maintain creative potential and adaptability in difficult conditions. Framework studies show that resilience is formed through the interaction of personal characteristics and support from the school and community (Psychology Today, 2025). Support groups, such as mentors and professional communities, create a sense of belonging for the teacher and reduce the effects of stress. Studies in China and Australia show that participation in Professional Learning Communities (PLC) is associated with an increase in teacher self-efficacy and a decrease in burnout, as the collegial exchange of experience strengthens professional identity and motivation (AASA, 2021).

In response to the challenges faced by rural teachers, global pedagogy is developing new, more effective models of professional development. Collaborative approaches, such as Professional Learning Communities (PLC), Lesson Study, and Action Research (AR), are becoming key tools for ensuring continuous and reflective professional growth (The Rural Educators, 2021). Recent studies confirm that strong PLCs significantly increase teacher resilience: in a survey of 2,815 school teachers in Eastern China, participation in a PLC was a significant predictor of their level of professional resilience (Zhang, Li, Zeng, et al., 2024).

Technology and blended learning also play an important role. The Australian "grow-your-own" model combines online courses and in-person sessions directly in rural areas, which helps retain teachers in their home schools. However, the effective use of technology requires developed

infrastructure: without stable internet and equipment, online learning is useless. This is confirmed by Kazakhstani data: the lack of internet and gadgets limits the potential of distance programs.

Lesson Study and Action Research methodologies integrate research into daily pedagogical practice. They transform the teacher from a passive recipient of knowledge into an active generator of solutions to local problems. These approaches not only improve teaching methods but also increase a teacher's sense of self-efficacy, as they see the immediate results of their efforts. This learning format is "job-embedded," which makes it especially suitable for rural teachers with limited time and resources (Rutgers University, 2025).

Results: Survey Analysis and Barrier Assessment

The survey sample, as presented in Table 1, reflects a diverse group of rural educators in Kazakhstan in terms of work experience and subject specialization. The majority of the surveyed teachers had more than six years of experience. The presence of a respondent with a PhD degree confirms that highly qualified specialists are indeed working in rural schools.

Table 1

Demographic Characteristics of Respondents (N=205), April 2025

Demographic Characteristic	Sub-category	Number (n)	Percentage (%)
Education	Secondary Pedagogical Education (College)	**7**	3.41
	Bachelor of Pedagogical Sciences	149	72.68
	Master of Pedagogical Sciences	24	11.71
	Doctor of Pedagogical Sciences (PhD, EdD)	1	0.49
	Other	24	11.71
Work Experience	1–5 years	26	12.68
	6–15 years	70	34.15
	16–25 years	66	32.20
	More than 25 years	43	20.98
Subject Specialization	Primary school	41	20.0
	Mathematics	16	7.8
	Physics/Chemistry/Biology	34	16.6
	Kazakh language and literature	24	11.71
	Russian language and literature	19	9.3
	Computer science	7	3.4
	Geography	5	2.4
	Other	56	27.3

As shown in *Table 1*, the sample reflects a diverse composition of rural teachers in Kazakhstan by experience and subject specialization. Among those surveyed, teachers with more than six years of experience predominate. The presence of a respondent with a PhD degree confirms that highly qualified specialists work in rural schools.

The key barriers hindering teachers' professional growth are presented in *Table 2*. The most frequently mentioned problems were: limited access to modern teaching materials (33.7% of respondents), limited access to internet resources and online courses (20%), and lack of time due to high workload (19.5%). These findings are fully consistent with the conclusions of international studies that note similar problems in rural education worldwide.

Table 2

Frequency of Mentioned Barriers to Professional Development for Rural Teachers, April 2025

Barriers	Number of mentions (Kazakh survey)	Number of mentions (Russian survey)	Total number of mentions	Total percentage (%) of total respondents
Lack of information about opportunities/courses	3	33	36	17,6
Lack of time due to high workload	19	21	40	19,5
Limited access to internet resources and online courses	32	9	41	20,0
Limited access to modern teaching materials	54	15	69	33,7
Lack of support from administration	1	2	3	1,5
Low motivation due to a lack of career prospects	3	4	7	3,4
Limited opportunities for experience exchange	17	5	22	10,7

Note: Each respondent could select multiple options, so the total number of mentions exceeds the total number of respondents (n = 205). The percentages indicate the proportion of all respondents who selected a given barrier, not the proportion within a language group.

Teachers reported a number of interconnected obstacles to their professional growth. The most frequently mentioned barriers include:

- *Lack of time:* A high workload and extensive administrative duties leave teachers with little to no time for self-education or additional training.
- *Limited access to resources:* Teachers in rural areas lack reliable internet and modern online platforms, making it difficult to participate in online courses. They also report a shortage of modern textbooks and teaching materials, which hinders the implementation of new teaching methods.
- *Insufficient administrative support:* Some respondents noted that school leaders do not provide enough assistance for their professional development. The lack of systemic motivation and mentorship reduces a teacher's interest in growth.
- *Low motivation:* Due to weak financial support and limited career prospects, many teachers feel professionally "stuck." These barriers mutually reinforce each other, creating a vicious cycle: a lack of time and resources prevents the introduction of innovations, which, in turn, reduces motivation and increases the risk of professional burnout. This situation aligns with international data on the difficulties of professional development in rural schools (Rutgers University, 2025).

At the same time, it is important to emphasize that teachers are not passive observers. On the contrary, they clearly articulate their own professional needs and demands for new training programs that directly reflect the identified difficulties. These expectations show the teachers' readiness for development and their desire to find solutions to existing problems. Among the most sought-after areas for continuous professional development programs are:

- *The use of digital technologies in teaching:* Teachers want to master modern digital tools and integrate them into their practice, which is directly related to the problem of limited access to technology.
- *Modern teaching methods:* Teachers are interested in learning interactive and effective work formats that allow them to move away from the traditional lecture model of teaching.

- *Classroom management and inclusion:* Skills for working with diverse groups of students and those with special educational needs are particularly in demand, reflecting the real challenges of rural schools.
- *Psychology and stress management:* The high emotional load and risk of burnout create a demand for training in psychological support methods and stress management.

The survey results revealed a clear demand from teachers to master modern teaching methods, which is a direct consequence of the existing barriers. As shown in Table 3, the most requested topics for professional development courses were "Modern Teaching Methods" (49.3% of responses) and "The Use of Digital Technologies in Teaching" (45.4% of responses).

Table 3
Frequency of Mentioned Priority Areas for Professional Development, April 2025

Program Name	Number of mentions (Kazakh survey)	Number of mentions (Russian survey)	Total number of mentions	Total percentage of mentions from total respondents, %
Modern teaching methods	66	35	101	49.3
Use of digital technologies in teaching	77	16	93	45.4
Classroom management and working with students with special educational needs (SEN)	14	28	42	20.5
Psychology and stress management for teachers	10	16	26	12.7
Developing skills for working with multi-level student groups	27	16	43	21.0
Training in distance and blended learning	6	7	13	6.3
Methods for assessing and monitoring knowledge in resource-limited conditions	9	8	17	8.3
Developing skills for working with parents and the local community	17	6	23	11.2
Leadership and management in a rural school setting	25	6	31	15.1
Assistance in conducting research on one's own practice (Action Research)	10	5	15	7.3
Methodological assistance with publishing an article in journals	11	8	19	9.3
Methodological assistance with planning for certification	21	15	36	17.6

The analysis of the survey results and the identified barriers and needs of rural teachers in Kazakhstan has revealed a clear picture: educators are actively seeking professional development that is directly relevant to their daily challenges. While they face systemic obstacles like lack of

resources and time, their strong interest in modern teaching methods and digital technologies indicates a readiness to improve.

This readiness, combined with the practical, problem-oriented nature of their needs, highlights the potential of a specific professional development model: **Action Research (AR)**. Unlike traditional top-down training, AR empowers teachers to investigate and solve their own classroom issues. This approach offers a powerful way to not only address the barriers identified in this study but also to directly meet the teachers' expressed demands for relevant, hands-on learning. It is therefore a crucial strategy for building professional sustainability.

The Experience of Action Research

A central part of the analysis was an investigation into teachers' experience with the *Action Research (AR)* methodology. The data revealed a polarization of opinions.

As shown in Table 4, about 38% of the surveyed teachers directly stated that they had no experience using the AR method, which indicates a lack of awareness and training. However, about 62% of respondents reported using the method, and approximately a quarter of them (collectively) noted specific positive changes, which points to the high potential of this practice. Their feedback can be categorized as follows:

- *Improved personal teaching practice***:** Teachers reported that AR helped them analyze and improve their own teaching, leading to better lesson planning and increased self-reflection.
- *Increased student motivation and engagement:* Around *17%* of all respondents noted that AR helped solve problems with low student motivation and engagement, increasing students' interest in the subject.
- *Improved learning outcomes:* A small number of teachers (approximately **2%**) directly linked the use of AR to a measurable increase in student academic performance.

While some teachers noted that the potential of AR is limited by a lack of administrative support, the general consensus among those who have used it is that it is an effective, practice-oriented approach that improves both teaching and learning. The distribution of responses by category is presented in *Table 4.*

Table 4

Thematic Categories of Teacher Responses on the Use of Action Research (N = 205), April 2025

Response Category	Number of Respondents	% of Total
Did not use the AR method (no experience)	78	38,0%
Used it, the effect was improved teaching (reflection, methods)	25	12,2%
Used it, the effect was improved learning (motivation, student performance)	35	17,1%
The other respondents used AR but did not specify the details	≈67	32,7%

Note: The last row was calculated by subtraction and reflects responses in which teachers confirmed the use of AR but did not describe specific results (for example, they only wrote "I used it"). Such responses are not assigned to any problematic category but are included for the sake of a complete picture.

These findings show that teachers perceive Action Research as a practice-oriented tool that not only improves their personal skills but also yields tangible, specific results in their work with students.

Regional Differences in AR Implementation

The data also showed interesting results when analyzed by region. The implementation of AR varies significantly across regions. For example, nearly 79% of teachers in the Turkistan region reported using this method, whereas in the North Kazakhstan region, less than half did. This may be due to differences in how professional development and methodological work are organized in these regions.

Despite the differences in adoption rates, the nature of the effects of AR is generally similar across all regions—in each, there are examples of both professional growth for the teacher and increased student motivation. This suggests that while some regions have been more successful at introducing this innovative method, its positive perception and impact remain consistent. A direct comparison of AR usage across regions reveals significant differences in adoption rates. As shown in the *Table 5* below, the percentage of teachers using Action Research varies considerably by location.

Table 5

Percentage of Teachers Using and Not Using the Action Research Method, by Region (% of Respondents), April 2025

Region	Use AR, %	Do not use AR, %
Karaganda Region	50,0	50,0
Kostanay Region	60,5	39,5
North Kazakhstan Region	48,3	51,7
Turkistan Region	78,9	21,1
Kyzylorda Region	65,2	34,8

As the data shows, there are significant regional differences in the adoption of Action Research (AR). The Turkistan region has the highest number of AR practitioners, with nearly 4 out of 5 teachers using the method. In contrast, the North Kazakhstan region has the lowest rate, at less than half. The other regions fall somewhere in between, with adoption rates around 50–60%.

It's important to note that even in the most "advanced" region, over 20% of teachers are still unfamiliar with the method. Conversely, in the region with the lowest adoption rate, nearly half of the teachers have already tried it. This indicates that Action Research is gradually penetrating the pedagogical community across all regions, though the pace and level of implementation vary. To further spread the method in regions with low adoption, targeted methodological support will likely be needed.

The data presented in *Table 5* is visualized in *Figure 1*, which shows the proportions of teachers who use and do not use AR by region in a stacked bar chart. This visual representation highlights the regional differences in the level of AR implementation, underscoring the positive progress in the Turkistan and Kyzylorda regions as well as the relative inactivity in North Kazakhstan. Using proportional columns makes it easy to compare the adoption rates within each region and to compare the regions to each other. This makes the chart a useful analytical tool for making decisions at the level of methodological services and school administration. To visually

represent the regional differences in the use of Action Research, the data is presented in the diagram below.

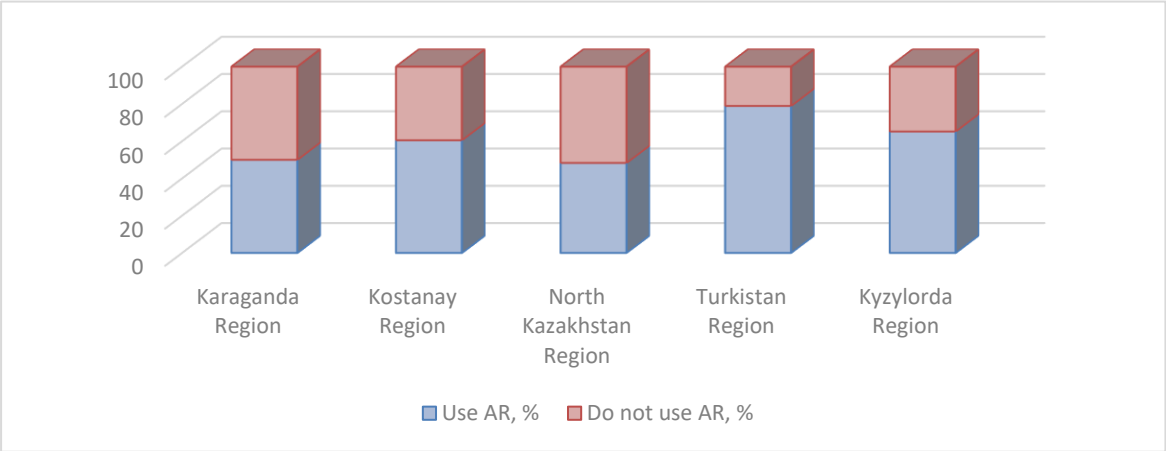

Figure 1
Diagram Reflecting the Proportion of Teachers Using and Not Using Action Research by Region, April 2025

Analysis by Experience Level

A comparison of groups by work experience did not reveal a significant difference in the level of Action Research (AR) application. Young teachers (with <5 years of experience) reported using AR in 57.1% of cases, while among the most experienced (≥16 years), this figure was 59.2%—practically the same (Table 3.11). In other words, new teachers and veterans are almost equally likely to have tried the method or not. A slight superiority is noticeable in the group with an average experience level (6–15 years: ~65% using it), though the focus of the task was on the extreme groups.

It can be assumed that young teachers learn about Action Research during their studies or on introductory courses and therefore try it quite actively, while some older teachers may have compensated for their initial unfamiliarity through courses on new technologies. As a result, there are virtually no differences based on experience level—the method is being adopted by teachers of all age groups.

Slight differences appear in the nature of the effects: experienced teachers mentioned using AR for analysis and changing their own methods slightly more often (of the 59% who used it, ~22% noted this effect, versus ~6% of young teachers), while beginners somewhat more often emphasized the benefit for students (about 31% of young teachers mentioned an increase in children's motivation, versus ~30% of experienced teachers, a negligible difference). These observations align with expectations: the most experienced teachers are more inclined to use AR for reflection and improving professional approaches, while young teachers see it as a way to engage students. Nevertheless, it should be reiterated that the differences are small, and overall engagement with the method is virtually identical.

To better understand how Action Research (AR) is adopted across different career stages, the following table compares its usage among young and experienced teachers.

Table 6
Use of Action Research Among Young and Experienced Teachers (Share of Respondents in Group)

Group of Teachers	Use AR, %	Do not use AR, %
Experience <5 years (n=28*))	57,1%	42,9%

Experience ≥16 years (n=103*)	59,2%	40,8%

**Note: The analysis presented in Table 6 includes only two groups of respondents — teachers with minimal work experience (1–5 years, N = 28) and those with maximal work experience (more than 25 years, N = 103). This selection was made deliberately in order to compare the most "vulnerable" and the most "resilient" teachers in terms of professional development. The intermediate groups (6–15 years and 16–25 years) were not included in this table, as their responses were analyzed separately and did not form part of the comparative section. The overall sample of the study remains N = 205 respondents.*

The survey on Action Research (AR) reveals that approximately two-thirds of the rural educators surveyed have used this method, and about half of them report positive outcomes. Teachers believe the main benefits of AR are improving their teaching skills through analysis and method refinement, and increasing student engagement through higher interest, motivation, and academic performance. These effects are complementary and lead to an overall increase in teaching effectiveness.

While a significant portion of teachers did not specify concrete results, which suggests a need for a clearer understanding of the AR methodology and how to evaluate its impact, no major differences were found in usage between regions or different experience levels. Both young and experienced teachers show a comparable level of engagement. However, in some regions, such as Turkistan, the implementation of AR is noticeably more active, while in others, there's a clear need to strengthen methodological support.

Overall, the findings point to the positive potential of Action Research for rural schools and the importance of promoting this approach through professional development programs.

The Vicious Cycle of Rural Education Problems

The analysis of the research results allows for a holistic view of the interrelationship between the identified problems. The lack of adequate material and technical resources and limited access to high-quality materials (as noted by the majority of respondents) amplifies the feeling of professional isolation, which is particularly characteristic of rural schools (MacDonald & Shirley, 2024). This, in turn, leads to a decrease in motivation and professional burnout, a key factor contributing to teacher turnover. This situation creates a vicious cycle: systemic barriers undermine professional sustainability, which ultimately prevents the achievement of global educational goals (International Baccalaureate, 2024).

Action Research as a Catalyst for Professional Sustainability

The data convincingly shows that collaborative, practice-oriented methods such as *Action Research (AR)* are a powerful antidote to the problems described above. The key advantage of AR is that it makes professional development a part of a teacher's daily work, not an additional burden, as is the case with one-off seminars. This directly addresses the problem of a lack of time, as learning occurs directly in the process of teaching (Rutgers University, 2025).

When a teacher uses AR to solve specific problems in their classroom (e.g., low motivation), they cease to be a passive recipient of instructions and become an active participant in the pedagogical process. This contributes to a growth in their self-efficacy and strengthens their professional identity, which, as a study by Zhang et al. shows, is directly related to increased professional sustainability. Thus, Action Research not only improves skills but also transforms a teacher's attitude towards their work, turning it from a source of stress into a source of growth and creativity (The Rural Educator, 2021).

Unfortunately, the implementation of such approaches faces additional barriers. The lone comment from one respondent about a "lack of understanding from administration" indicates that success depends not only on the teacher's motivation. A supportive administration that creates a culture of trust and encourages innovative initiatives is a necessary condition for scaling up such practices. The gap in the perception of professional development quality between teachers and

administration, as revealed in similar studies, underscores the critical importance of creating a unified vision at the school level.

Conclusion

This study convincingly demonstrates that the development of research skills and reflective practice in rural teachers directly contributes to an increase in their professional sustainability. The case of Kazakhstan confirms that, despite global systemic challenges, teachers are ready for change and can become drivers of positive transformations in their schools.

Based on the analysis conducted, the following multi-level recommendations can be formulated to create a sustainable educational ecosystem:

1. At the Level of State Educational Policy:

- ✓ *Investment in infrastructure:* It is essential to urgently bridge the digital divide by providing rural schools with stable, high-speed internet and modern equipment. This is a prerequisite for the effective implementation of any distance learning programs and the integration of digital technologies into the learning process.
- ✓ *Reforming professional development programs:* The cycles of certification and professional development should be revised to shift the focus from formal, one-off courses to continuous, collaborative, and job-embedded learning. Policy should encourage and recognize participation in PLCs, Lesson Study, and Action Research as a valid form of professional development.
- ✓ *Reducing bureaucracy:* Optimizing administrative workload and excessive reporting will free up teachers' time for self-education, collaborative work, and classroom experimentation.

2. At the Level of School Leadership and Methodological Services:

✓ *Developing mentorship and coaching***:** It is necessary to institutionalize mentorship programs for young specialists and create professional learning communities (PLCs) that will provide ongoing support and knowledge exchange among colleagues.

✓ *Fostering a culture of trust and support:* School administration must become a catalyst for change by encouraging teachers' research initiatives and providing them with the necessary methodological and organizational support so that innovative methods are not perceived as an additional source of stress.

3. At the Individual Level:

✓ *Attention to teacher well-being:* It is important to implement programs for stress management, psycho-emotional support, and burnout prevention, recognizing the high emotional burden that is a key factor undermining professional sustainability (International Baccalaureate, 2024).

These measures are designed not only to improve teachers' skills but also to create conditions for their professional well-being and job satisfaction. In a broader context, such an approach to supporting educators from within will strengthen the resilience of the entire education system in rural regions worldwide, as the case of Kazakhstan reflects global challenges and solutions.

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Conflict of Interest

The author confirms that there is no conflict of interest, financial, professional, or personal, that could have influenced the interpretation of the data presented in this article.

References

AASA (2021). *Developing Teacher Resilience and Resilient School Cultures*. AASA Journal of Scholarship and Practice, 18(1). https://www.aasa.org/docs/default-source/publications/journal-of-scholarship-and-practice/2021-jsp/developing-teacher-resilience-and-resilient-school-cultures.pdf

Blaine County School District (2024). *What is a professional learning community?*. https://www.blaineschools.org/domain/1456

Education International (2024). *On World Teachers' Day, educators demand urgent action to address the global teacher shortage*. https://www.ei-ie.org/en/item/29057:on-world-teachers-day-educators-demand-urgent-action-to-address-the-global-teacher-shortage

International Baccalaureate (2024). *Well-being for schoolteachers (2024 https://www.ibo.org/research/wellbeing-research/well-being-for-schoolteachers-2024/)*.

Nuffield Foundation (2021). *School accountability and teacher stress*. https://www.nuffieldfoundation.org/wp-content/uploads/2021/03/School-accountability-and-teacher-stress.pdf

OECD (2022). *Mending the Education Divide: Getting Strong Teachers to the Schools That Need Them Most*. https://www.slideshare.net/slideshow/mending-the-education-divide-getting-strong-teachers-to-the-schools-that-need-them-most-251360965/251360965

Psychology Today (2025). *Why Teacher Resilience Matters Now More Than Ever*. https://www.psychologytoday.com/us/blog/healing-through-the-art-of-navigating-light-and-shadow/202506/why-teacher-resilience-matters

Reyes-Araya, A., Riquelme-Pacheco, M., Morales-Varela, S. & Valdebenito-Vera, F. (2023). Qualitative Study of the Factors that Contribute to the Professional Resilience of Teachers in Chile. *International Journal of Environmental Research and Public Health*, 20(24), Article 7380. https://pmc.ncbi.nlm.nih.gov/articles/PMC11939180/

Rutgers University (2025). *Bridging the Professional Learning Gap in Rural Schools*. https://cesp.rutgers.edu/news/bridging-the-professional-learning-gap-in-rural-schools

Ryan, S.V. et al. (2017). *Accountability policies may affect teacher stress*. Nuffield Foundation. https://www.nuffieldfoundation.org/wp-content/uploads/2021/03/School-accountability-and-teacher-stress.pdf

The Rural Educator (2021). *Collaborative Professionalism: A Virtual Professional Development Program for Rural Teachers*. 43(2). https://scholarsjunction.msstate.edu/cgi/viewcontent.cgi?article=1313&context=ruraleducator

Thomson, S. (2020). TALIS: Stress levels among Australian teachers. *Teacher Magazine*. https://research.acer.edu.au/columnists_sue_thomson/6/

UNESCO (2024). *Global report on teachers: addressing teacher shortages and transforming the profession*. https://www.unesco.org/en/articles/global-report-teachers-addressing-teacher-shortages-and-transforming-profession

UNESCO (2025). *Supporting teacher wellbeing and school resilience following devastating floods in Brazil*. https://www.unesco.org/en/articles/supporting-teacher-wellbeing-and-school-resilience-following-devastating-floods-brazil

U.S. Department of Education (2024). *Raise the Bar: Supporting Rural Communities — Boldly Improve Learning Conditions, Eliminate Educator Shortages*. https://blog.csba.org/rural-educator-prep/

World Bank Group (2021). *Successful Teachers, Successful Students: Recruiting and Supporting Society's Most Crucial Profession*. https://openknowledge.worldbank.org/entities/publication/eeb77c72-5835-526a-b91f-dc17c60cd11a

Zhang, J., Li, Y., Zeng, Y. & Lu, J. (2024). Exploring the mediating role of teacher identity between professional learning community and teacher resilience: evidence from Eastern China. *Humanities and Social Sciences Communications*, 11, Article 1290. https://www.researchgate.net/publication/387305124_Teacher_Professional_Development_in_Rural_China_Opportunities_and_Barriers

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