Research Capabilities and Research Practices of Teacher Candidates, In-Service Teachers, and Teacher Educators in the Context of Research Capacity Building in Kazakhstan's Language Teacher Education

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Abstract

To provide high-quality instruction and make a meaningful impact in education, educators must continuously develop their research capabilities and build a researcher identity, as research considerably enhances teachers' ability to address educational challenges and consistently deliver effective instruction. This study aims to examine the research capabilities and practices of teacher educators and teacher candidates in language teacher training departments, as well as in-service K–12 language teachers in Kazakhstan. An exploratory research design was used to examine participants' practices and competencies in understanding research, planning and designing studies, knowledge of methodology, data analysis, research writing, and the ability to present and publish findings. Results revealed a clear hierarchy in research capabilities: teacher educators demonstrated the highest levels, followed by in-service teachers, while teacher candidates exhibited the lowest. Significant differences were found among the three groups in both overall research capabilities and specific dimensions. Research engagement frequency was positively correlated with research competence across all groups, emphasizing the importance of active research participation for skill development. In contrast, age had no effect on research capabilities, and academic majors had only a minor impact on teacher candidates. By identifying strengths and limitations in research practices across teacher roles, the study offers a basis for designing targeted interventions in pre-service and in-service teacher education programs.

Keywords: Teacher education programs, research capacity building, research capabilities, research engagement, teacher candidates, teachers, teacher educators

Introduction

Existing educational policies have transformed both the nature of education and the knowledge and research competencies expected of teachers in the 21st century (Lodico et al., 2006). International initiatives and reviews of teacher education and educational research stress the

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importance of building research capacity in future teachers (Cochran-Smith et al., 2020a; Furlong, 2015). Developing research skills is essential for staying informed about emerging trends and delivering high-quality education. By continually enhancing their research capabilities, educators can make meaningful contributions to their fields. However, most teacher education programs remain implicitly grounded in technical rationalism (Schön, 1987), which is based on an epistemology of professional knowledge that views novice practitioners as passive recipients of externally produced knowledge rather than as active contributors to knowledge creation. Contemporary research is exploring the impact of conceptualising teacher candidates as practical researchers—professionals who require opportunities to articulate, interpret, and analyse their own knowledge development through original research and pedagogical activities such as teacher inquiry, action research, and self-studies during practicum placements and teacher education programs (Bullock, 2016).In this context, it is essential to examine the perspectives on research capacity building within teacher education programs in the Republic of Kazakhstan, as this issue remains underexplored in the existing literature. The purpose of this study is to examine the research capabilities and practices of teacher educators and teacher candidates in language teacher training departments, as well as in-service K–12 language teachers in Kazakhstan. The study was guided by the following research questions:

RQ1: Which group—teacher educators, teacher candidates in language teacher training departments, or in-service K–12 language teachers—demonstrates the highest level of research capability, and how do these levels compare across groups? RQ2: To what extent are the research capabilities of teacher educators, in-service teachers, and future teachers associated with their research engagement, educational background, age, and teaching major?

The analysis of research capacity building in language teacher education provides valuable insights for educators, students, and policymakers, supporting more informed decision-making. A comprehensive understanding of the needs and challenges faced by teacher candidates, in-service teachers, and teacher educators in integrating research into education—along with the strengths and limitations of current language teacher education—can guide effective curriculum development. This, in turn, will support the design of educational models that align with the evolving demands and objectives of the teaching profession.

Literature Review

Research Knowledge and Skills in Teacher Education

In today's rapidly evolving educational landscape shaped by globalization, technological advancement, and neoliberal policy influences, developing research capacity among educators is more critical than ever. As Gleeson et al. (2017) and Kuzembayeva et al. (2023) claim, the effectiveness of educational systems depends largely on the quality of their teachers, highlighting the need for a highly skilled, research-literate teaching workforce. International reviews of teacher education emphasize research capacity as a cornerstone of teacher quality and systemic improvement (Cochran-Smith et al., 2020a; Dlamini & Tsotetsi, 2024; Furlong, 2015; Kutluca et al., 2024). For future teachers, research skills are essential not only for understanding pedagogical theories but also for becoming reflective practitioners who can effectively address diverse classroom challenges. In-service teachers benefit from research engagement as a form of continuous professional development, enabling them to evaluate and refine their practices using evidence-based approaches. For teacher educators, strong research capabilities are foundational to modeling effective teaching and contributing to the academic knowledge base that shapes teacher preparation. As Lodico et al. (2006) note, current educational policies have redefined the types of knowledge and research skills required of teachers, making it imperative for all educators to be prepared to engage in and contribute to educational research. Building research capacity is, therefore, not an optional enhancement but a necessary foundation for ethically strong research and educational innovation, policy responsiveness, and sustained professional growth (Chigisheva et al., 2022).

Understanding the differences in research capabilities among teacher candidates, in-service teachers, and teacher educators requires a theoretical foundation in teacher development and professional learning. Various frameworks conceptualize these differences as shaped by developmental stages, contextual factors, and institutional structures. Drawing on the Dreyfus and Dreyfus (1986) model of skill acquisition, teacher candidates are positioned at the novice or advanced beginner stage, where learning is guided primarily by rules and external instruction, and research engagement is typically theoretical and coursework-based. In-service teachers generally function at a competent or proficient level, relying on experiential knowledge and classroom-based practices, though their research engagement is often influenced by school culture and institutional support. Teacher educators, as experts, integrate research production into their professional

identity and play a key role in mentoring others in research practices. From a sociocultural perspective, Wenger's (1998) Communities of Practice theory offers valuable insight into how each group engages in professional learning communities. Teacher candidates are peripheral participants in academic or school-based research, typically under the guidance of supervisors. In-service teachers, while fully integrated into school communities, often lack structured opportunities for research unless involved in collaborative inquiry initiatives. In contrast, teacher educators are core members of academic research communities, with institutional expectations to produce and disseminate scholarly work. Additionally, the Cultural-Historical Activity Theory (CHAT) (Engeström, 1987) helps explain how systemic and institutional factors shape each group's engagement with research. Each operates within distinct "activity systems" defined by their objectives, tools, rules, and division of labor. Teacher candidates function within university settings focused on acquiring research knowledge. In-service teachers primarily engage in instructional tasks where research is not a central focus. Teacher educators, meanwhile, are situated in research-intensive institutions that offer greater autonomy, resources, and institutional support for research. Together, these theoretical perspectives demonstrate that differences in research capabilities stem not only from individual development but also from differing roles, contexts, and institutional expectations. Effective teacher education and professional development must, therefore, account for these distinctions and offer tailored support aligned with the unique needs and structures surrounding each group.

Several patterns emerge in the literature on educational research practices. Before examining these patterns, it is important to establish a definition for research. Pring (2015) defines research as any methodical, analytical, and self-critical inquiry aimed at advancing knowledge. Such inquiry must consider the techniques and procedures employed—such as what is measured and how—and how these choices affect the research's quality and impact. One common pattern in educator research is the predominant use of qualitative and action research approaches in teacher preparation studies. While these methods are valuable for supporting teacher learning and development, they are often undervalued beyond their immediate contexts and face questions regarding their validity (Beckett, 2020). Recent literature has begun to explore when, how, and why teacher educators and teachers engage in research, either as producers or consumers. The BERA-RSA (2014) report on teacher education research in the UK outlines three primary modes of research engagement: (1) using research to inform program design, positioning teacher educators as consumers; (2) integrating

research findings into program content, again positioning them as consumers; and (3) active research involvement and knowledge production, positioning them as producers. As Murray and Vanassche (2019) note, research plays a critical role in enhancing support for practising teachers, student teachers, and teacher educators across both pre-service and in-service programs. However, while the importance of research in teacher education is emphasised, the development of research capacity within this field remains insufficiently addressed. In particular, the role of teacher educators as research producers and the implications of this role for their practice, identity, and work in higher education requires further investigation.

To stay up to date with current developments and provide students with a high-quality education, educators must continually refine their research skills (Kuzembayeva et al., 2022). By consistently developing these skills, educators can enhance their instructional effectiveness and make a meaningful contribution to the field of education (Kuzembayeva et al., 2024). Tatto (2021) emphasises the need for teachers and teacher educators to deepen their understanding of research procedures and methodologies to effectively examine and interpret their own practices, as well as those of others. It is crucial that future teachers are not limited in their ability to engage with diverse types of research and methodologies, which are essential for meaningful participation in the study of teaching, learning, and teacher preparation (Labaree, 1998; Guo & Nitko, 1996). Researchers generally agree that strengthening educators' preparation in research methodologies would considerably affect the collective research culture in education (Capraro & Thompson, 2008; Levine, 2007). While this emphasis on research is gaining momentum globally, evidence suggests that some Asian countries may lag. Educational systems in these regions often show limited focus on research methodologies and place insufficient value on the complex processes involved in producing and disseminating scholarly work (Ahmed & Pinto, 2020). This gap is concerning, as a lack of up-to-date research knowledge and methodological expertise undermines the development of a robust educational research culture (Henson et al., 2010).

Research Capacity Building and Teachers' Involvement in Educational Research
Research capacity building in education refers to the systematic development of individual, institutional, and systemic capabilities to engage in, apply, and sustain high-quality research practices. Rooted in sociocultural theory (Vygotsky, 1978) and the concept of communities of practice (Wenger, 1998), it goes beyond the mere acquisition of technical research skills,

emphasizing instead a dynamic process of learning through participation, mentorship, and collaboration within research-rich environments. This perspective emphasizes that individuals best develop research capabilities when situated in authentic contexts that value inquiry, promote critical thinking, and provide access to research tools and discourse. In teacher education, research capacity building involves the ability to understand, conduct, interpret, and apply research to inform practice and support professional learning (Cochran-Smith et al., 2020b; Christie & Menter, 2009). It is inherently relational and developmental, requiring sustained support from institutions and experienced mentors who model and scaffold research engagement. From a capacity-building perspective, research development should be understood across three interconnected levels: the individual, the institution, and the system (Boaz & Nutley, 2019). At the individual level, teacher educators, in-service teachers, and future teachers need opportunities to build methodological knowledge, confidence, and motivation. At the institutional level, universities and professional development organizations must foster a culture that values inquiry through mentorship, research funding, and curricular integration. At the systemic level, national education policies and teacher standards must create sustainable structures that promote research engagement across the teaching career continuum. By situating research capacity building within this multilevel, sociocultural framework, teacher education programs can move beyond technical training to cultivate a lasting culture of inquiry, reflection, and professional growth.

Teacher education is increasingly being repositioned within higher education, with teachers' roles envisioned as more entrepreneurial and research-intensive (Barnett, 2011). In recent years, there has been a growing emphasis on research-informed teacher education, reflected in terms such as 'research-driven,' 'research-based,' and 'research-informed practice.' Oancea et al. (2021) argue that a robust, research-rich teacher education system requires the involvement of multiple stakeholders, including teacher educators in higher education institutions, students, school administrators, policymakers, research funders, and publishers. Such a system also necessitates a principled approach to public investment in capacity-building initiatives that support collaborative, research-rich professional practice and development throughout all stages of a teaching career. Research is widely regarded as essential for enhancing teachers' ability to address educational challenges and deliver consistently high-quality instruction (Sarsenbayeva et al., 2024; Yermekbayeva et al., 2024).

The significant lack of opportunities for prospective and early career teachers to acquire and apply research skills, as reported both domestically and internationally, must be addressed through revised curricula (Tatto, 2021). Teacher education programs should be redesigned to include comprehensive training in research methodologies, ensuring that teachers learn not only to interpret research but also to conduct it. Current university mandates often force teacher educators to navigate a tension between their responsibilities to the teaching profession and the pressures of advancing academic careers, particularly through securing research funding and increasing publication output (Furlong, 2013). In this context, teacher educators operate within a complex framework of competing and sometimes conflicting demands from educational reforms and institutional expectations. Consequently, the lived experiences and challenges faced by teacher educators are frequently overlooked or marginalized in broader policy and institutional discourses (Sugrue & Solbrekke, 2015). The research capacity-building perspectives of teacher education programs play a crucial role in shaping the research capabilities and practices of teacher educators, in-service teachers, and future teachers. Programs that embed inquiry-based learning and research training into teacher preparation equip future teachers with essential skills for reflective and evidence-informed practice (Cochran-Smith et al., 2020b). When these perspectives are extended into ongoing professional development, in-service teachers are more likely to engage in classroom-based research and pursue continuous learning (Furlong, 2015). For teacher educators, institutional support for research enhances their dual role as researchers and mentors, allowing them to model and facilitate scholarly inquiry (Goodwin et al., 2014). Such capacity-building efforts are vital for fostering a sustainable, research-informed culture across all levels of the teaching profession. In Kazakhstan, where educational reforms are progressing in alignment with global standards, the development of educators' research capacity is especially urgent. However, there is a lack of empirical research examining how research capability is distributed and experienced across different stages of teacher development within the local context.

This study is thus justified by its potential to address a critical gap in the literature and inform teacher education policy and practice in Kazakhstan. Identifying the strengths and limitations in research capabilities and practices across teacher roles offers a basis for designing targeted interventions in both pre-service and in-service teacher education programs. Furthermore, the study contributes to the broader international discourse on teacher professionalism by providing context-specific insights into how research engagement can be supported within diverse

educational systems. The rationale for this research is grounded in the belief that cultivating a research-active teaching workforce is not merely a response to policy demands but a necessary condition for fostering innovation, promoting equity, and achieving sustained educational improvement.

Method

Research Design

The purpose of this study is to explore the research capabilities and practices of teacher educators and teacher candidates in language teacher training departments, as well as in-service K–12 language teachers in Kazakhstan. An exploratory research design, suitable for examining quantitative data (Creswell, 2015), was employed to investigate participants' research practices and capabilities in relation to their understanding of research, ability to plan and design studies, knowledge of research methodology, data analysis skills, research writing proficiency, and ability to publish and present findings.

Study Sample

In this study, we refer to university students enrolled in a language teacher education programme with the aim of becoming elementary or secondary (K–12) teachers as *teacher candidates*, and to current K–12 language teachers as *in-service teachers*. Professors and instructors working on a continuing basis in university-based language teacher education programs are referred to as *teacher educators*. The research was conducted among teacher candidates, in-service teachers, and teacher educators of Kazakh, Russian, and English languages in Aktobe, Republic of Kazakhstan. The teacher candidates included 120 postgraduate (master's level) students from language teacher education departments. A probability random sampling technique, accounting for existing strata in the population, was used to select a representative sample of teacher candidates. In contrast, in-service teachers (n = 77) and teacher educators (n = 41) were selected using a snowball sampling method.

Table 1 presents the demographic information of the participants.

Table 1

Participants' Demographic Information (N=238)

Categories	Teacher Educators	In-Service Teachers	Teacher Candidates
	N (%)	N (%)	N (%)
Gender			
Male	4 (9.8)	2 (2.6)	25 (20.8)
Female	37 (90.2)	75 (97.4)	95 (79.2)
Age			
20-30	3 (7.3)	19 (24.7)	98 (81.7)
30-40	11 (26.8)	21 (27.3)	19 (15.8)
40-50	11 (26.8)	16 (20.8)	2 (1.7)
50-60	10 (24.4)	17 (22.1)	1 (0.8)
60+	6 (14.6)	4 (5.2)	-
Level of Education			
Bachelor	-	44 (57.1)	-
Specialist	2 (4.9)	17 (22.1)	-
Master	17 (41.5)	16 (20.8)	120 (100)
Cand. Sci.	14 (34.1)	-	-
Ph.D.	4 (9.8)	-	-
Dr. Sci.	4 (9.8)	-	-
Major / Subject They Teach			
Kazakh Language and Literature	11 (26.8)	21 (27.3)	30 (25)
Russian Language and Literature	8 (19.5)	24 (31.2)	18 (15)
Foreign Language: Two Foreign Languages	22 (53.7)	32 (41.6)	72 (60)
Total	41 (100)	77 (100)	120 (100)

Instrument

A questionnaire survey was administered to teacher educators, in-service teachers, and future teachers to assess their research capabilities and practices. The survey consisted of a 30-item research capacity questionnaire, adapted from Perez et al. (2022), using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire included items on participants' demographics, research engagement and practices, and various dimensions of research capability, such as understanding research, planning and designing studies, knowledge of research methodology, data analysis skills, research writing skills, and the ability to publish and present research. These components represent key individual-level competencies required for active participation in and contribution to educational research. The reliability of the questionnaire

was tested by George and Mallery (2019), yielding a high Cronbach's alpha of 0.89. The instrument was validated through concept, criterion, content (expert), and face validity (Perez et al., 2022).

Data Collection

Google Forms was used to administer the survey to enhance accessibility and broaden the study's reach. Data were collected over an extended period, from September to October 2024. This prolonged timeframe allowed for careful and precise data collection, contributing to a representative and diverse sample and enhancing the study's reliability and robustness. Survey responses were exported from Google Forms into Excel files for analysis. The data were organised according to participants' demographics, research engagement and practices, and various dimensions of research capability, including understanding research, planning and designing studies, knowledge of research methodology, data analysis skills, research writing skills, and the ability to publish and present research.

Data Analysis

Data analysis was conducted using RStudio. Descriptive statistics were employed to assess the quantitative data, with results presented in terms of frequencies and percentages. Assumption tests were conducted to ensure the validity of the analysis, including checks for normality and homogeneity of variances. Normality was assessed through visual inspection of Q–Q plots and the Shapiro–Wilk test, while Levene's test was used to evaluate the equality of variances across groups (Field, 2018). A one-way ANOVA was performed to determine whether research capabilities differed among the three subject groups: teacher educators (n = 41), in-service teachers (n = 77), and future teachers (n = 120). Multiple pairwise comparisons were conducted to identify which groups differed significantly in their research capabilities. Additionally, correlation analysis was carried out to examine the relationships between research capabilities and participants' age, level of education, and teaching majors. Spearman's rank correlation coefficient, which does not assume a normal distribution of the data, was used (McDonald, 2014), and correlations were considered significant at $p < 0.05$.

Research Ethics

The research protocol was submitted to the K. Zhubanov Aktobe Regional University Ethics Committee for ethical approval following peer review by the Department of Research and Innovation (2023). All participants provided written informed consent after being fully informed about the study. The research did not involve participants under the age of 18 or individuals with intellectual disabilities.

Results and Discussion

Differences in Research Capability Levels in Teacher Educators, Teacher Candidates in Language Teacher Training Departments, and In-Service K-12 Language Teachers

Table 2 presents the descriptive statistics for the overall research capabilities of teacher candidates, in-service teachers, and teacher educators.

Table 2

Descriptive Statistics of Overall Research Capabilities of Teacher Candidates, In-Service Teachers, and Teacher Educators

Group	N	Mean	SD
Teacher Candidates	120	3.16	0.19
In-Service Teachers	77	3.62	0.52
Teacher Educators	41	4.09	0.53

Descriptive statistical analysis shows that teacher educators possess the highest level of research capabilities. Future teachers exhibit lower research capability levels than both in-service teachers and teacher educators. Prior to conducting the one-way ANOVA, assumption tests for normality and homogeneity of variances were performed to validate the analysis. The assumptions were adequately met, allowing the use of ANOVA. Table 3 presents the results of the one-way ANOVA, examining differences in research capability levels among future teachers, in-service teachers, and teacher educators.

Table 3

Analysis of Variance (ANOVA) Between the Groups of Future Teachers, In-Service Teachers, and Teacher Educators

	Effect	DFn	DFd	F	p	p<.05	Ges
1	Groups	2	235	94.664	7.01e-31	*	0.446

Table 3 shows that there are significant differences in research capability levels between the groups, $F(2, 235) = 94.664$, $p = 0.001$, with a generalised eta squared of 0.45, indicating a large effect size. These differences are marked with an asterisk (*). Research capabilities are significantly lower in future teachers (M = 3.16, SD = 0.19) compared to in-service teachers (M = 3.62, SD = 0.52), and teacher educators exhibit the highest levels (M = 4.09, SD = 0.53), surpassing both in-service teachers and future teachers.

Table 4 presents the results of the Tukey post-hoc test, which was used to conduct multiple pairwise comparisons between the three groups.

Table 4

Tukey Post-Hoc Test Results for Pairwise Comparisons Between Groups of Subjects

Group 1	Group 2	null.value	estimate	conf.low	conf.high	p.adj
Teacher Candidates	In-Service teachers	0	0.463	0.328	0.598	1.35e-13
Teacher Candidates	Teacher Educators	0	0.930	0.763	1.10	4.44e-15
In-Service Teachers	Teacher Educators	0	0.468	0.289	0.647	8.84e-9

Tukey post-hoc analyses revealed statistically significant differences in research capabilities among all three groups. The difference between future teachers and in-service teachers was 0.46 (95% CI [0.33, 0.60]), between in-service teachers and teacher educators was 0.47 (95% CI [0.29, 0.65]), and between future teachers and teacher educators was 0.93 (95% CI [0.76, 1.10]). All differences were statistically significant (p = 0.001).

Relationship of Research Capabilities of Teacher Educators, In-Service Teachers, and Future Teachers Associated with their Research Engagement, Educational Background, Age, and Teaching Major

Table 5 presents the results of Spearman's rank correlation analysis examining the relationship between future teachers' research capabilities and their age, level of education, majors, and research engagement frequency.

Table 5

Spearman Rank Correlation Coefficient for the Future Teachers' Research Capabilities and Their Ages, Levels of Education, Majors, and Research Engagement Frequency

Research Capability Dimensions	Overall Research Capabilities	Major	Age	Research Engagement Frequency
Understanding Research	0.869**	0.576**	-0.105	0.603**
Planning and Designing Research	0.916**	0.520**	-0.103	0.554**
Research Methodology	0.854**	0.529**	-0.154	0.566**
Data Analysis	0.909**	0.655**	-0.161	0.613**
Writing Research	0.821**	0.492**	-0.112	0.511**
Publishing and Presenting Research	0.702**	0.5144**	-0.043	0.459**

** Correlation is significant at $p < 0.05$ level (2-tailed)

Correlation analysis shows a very strong relationship between future teachers' overall research capabilities and specific research dimensions, including understanding research, planning and designing research, knowledge of research methodology, data analysis skills, research writing skills, and the ability to publish and present research. A strong correlation was also found between research engagement frequency and capabilities such as understanding research and data analysis, while moderate correlations were observed with planning and designing research, methodological knowledge, research writing, and publishing and presenting research. No significant relationship was observed between research capabilities and age. However, research capabilities were significantly correlated with participants' majors, with future teachers of English demonstrating higher levels of research capabilities compared to those specialising in Kazakh and Russian.

Table 6 presents Spearman's rank correlation coefficient for the Teachers' Research Capabilities and Their Ages, Levels of Education, Majors, and Research Engagement Frequency.

Table 6

Spearman Rank Correlation Coefficient for the In-Service Teachers' Research Capabilities and Their Ages, Levels of Education, Majors, and Research Engagement Frequency

Research Capability Dimensions	Overall Research Capabilities	Level of Education	Major	Age	Research Engagement Frequency
Understanding Research	0.799**	0.338**	-0.345**	0.166	0.486**
Planning and Designing Research	0.878**	0.255**	-0.282**	0.164	0.494**
Research Methodology	0.929**	0.138	-0.311**	0.110	0.432**
Data Analysis	0.880**	0.217**	-0.236**	-0.066	0.407**
Writing Research	0.856**	0.153	-0.344**	0.144	0.378**
Publishing and Presenting Research	0.802**	0.295**	-0.251**	0.184	0.360**

** Correlation is significant at $p < 0.05$ level (2-tailed)

No statistically significant correlation was observed between the research capability dimensions of in-service teachers and their levels of education, majors, or age. This indicates that neither the subject taught (Kazakh, Russian, or English) nor the level of education attained (bachelor's or master's) is associated with overall research capabilities or specific dimensions such as understanding research, planning and designing research, knowledge of research methodology, data analysis skills, research writing skills, and the ability to publish and present research. However, a moderate correlation exists between in-service teachers' research engagement frequency and certain research capability dimensions, including understanding research, planning and designing research, knowledge of research methodology, and data analysis skills.

Table 7 presents Spearman's rank correlation coefficients for teacher educators' research capabilities in relation to their age, level of education, majors, and research engagement frequency.

Table 7

Spearman Rank Correlation Coefficient for the Teacher Educators' Research Capabilities and Their Ages, Levels of Education, Majors, and Research Engagement Frequency

Research Capability Dimensions	Overall Research Capabilities	Level of Education	Major	Age	Research Engagement Frequency
Understanding Research	0.755**	0.201	0.013	-0.093	0.282

Planning and Designing Research	0.897**	0.447**	-0.143	0.168	0.472**
Research Methodology	0.939**	0.353**	-0.054	0.108	0.382**
Data Analysis	0.882**	0.259	-0.163	0.253	0.325**
Writing Research	0.884**	0.471**	-0.125	0.186	0.493**
Publishing and Presenting Research	0.891**	0.310**	-0.027	0.207	0.442**

** Correlation is significant at p < 0.05 level (2-tailed)

Research capability dimensions of teacher educators such as planning and designing research, writing research, and publishing and presenting research show moderate correlations with their research engagement frequency. Additionally, there is a moderate correlation between teacher educators' levels of education and their abilities to plan and design research, as well as to write research.

A correlation matrix constructed to calculate Spearman's rank correlation coefficients confirmed statistically significant associations between research capability dimensions, overall research capabilities, and research engagement frequency across all three groups: teacher educators, in-service teachers, and future teachers. However, no significant correlations were found between age and research capabilities in any group, and no significant correlation was observed between majors and research capabilities for teacher educators.

Discussion

The findings of this study provide critical insight into the research capabilities of teacher educators, in-service teachers, and future teachers, revealing both shared patterns and distinct group-level differences. These results align with and extend previous research in the field, particularly emphasising the importance of sustained research engagement and the influence of institutional context in shaping research skills. A very strong correlation was identified between future teachers' overall research capabilities and core research dimensions, including understanding research, planning and designing research, knowledge of research methodology, data analysis, research writing, and the ability to publish and present. This interdependence of research skills supports the conclusions of Henson et al. (2010), who assert that research competence develops holistically and should be embedded throughout teacher education. However, only moderate correlations were found between future teachers' research engagement frequency and several of these research dimensions, indicating that while engagement does contribute to capability

development, its effectiveness varies across specific skill areas. These findings also reinforce Aiken et al. (2008) concerns that emerging advancements in research methodology are not being sufficiently integrated into many teacher preparation programs, especially at the undergraduate level.

The study further revealed that future teachers' research capabilities were not related to age but were significantly associated with their majors. Specifically, future teachers of English demonstrated higher levels of research capability compared to those studying Kazakh or Russian. This finding supports the conclusions of Nguyen et al. (2021), who observed that English-medium instruction often grants greater access to global research literature and methodologies, potentially enhancing students' research preparedness. The language of instruction and accessibility of academic resources in English appear to be critical factors contributing to these disparities. In contrast, no statistically significant correlation was found between in-service teachers' research capabilities and demographic variables such as age, major, or level of education. This aligns with the findings of Cochran-Smith and Lytle (2009), who argue that professional experience alone is insufficient for developing research competence; instead, intentional opportunities for research engagement and critical reflection are essential. Still, the moderate correlation identified between in-service teachers' research engagement frequency and specific dimensions—such as understanding research, planning, methodology, and data analysis—highlights the value of sustained involvement in research activities. This conclusion is further supported by Kelchtermans (2009), who emphasised the transformative potential of ongoing research participation in enhancing teacher professionalism.

Among teacher educators, research engagement frequency was moderately correlated with several key research capabilities, including planning, writing, and dissemination. Additionally, level of education showed a moderate correlation with capabilities in research planning and writing. These findings are consistent with Goodwin et al. (2014), who emphasised that teacher educators' ability to model effective research practices depends on both advanced academic training and active involvement in scholarly inquiry. The observed hierarchy in research capabilities—highest among teacher educators, followed by in-service teachers, and lowest among future teachers—aligns with existing literature. Tatto (2021) noted that teacher education systems often reinforce a divide between academic researchers and classroom practitioners, resulting in uneven research capacity across professional roles. The present study supports this perspective, suggesting that limited

collaboration between universities and schools may hinder the development of a cohesive, research-rich professional culture. Importantly, the statistically significant associations between research engagement frequency and nearly all research capability dimensions across groups, excluding age and, for teacher educators, academic major, underscore the essential role of active research participation. This supports the argument by Darling-Hammond et al. (2017), who advocate for clinical, inquiry-based teacher education models that integrate research into professional practice, enabling educators at all levels to cultivate deeper research expertise.

In this context, establishing an inquiry culture within educational institutions is essential for developing long-term research capacity. As Zeichner (2005) underlined, teacher education must foster not only individual research development but also systemic collaboration among faculty, practitioners, and students. This institutional culture, when combined with rules and incentives, has the potential to strengthen long-term research participation. Murray and Male (2005) also suggest that for teacher educators, research capacity building is inextricably linked to their dual identities as researchers and practitioners. Developing their intellectual knowledge necessitates time, support, and recognition of research as an essential component of their professional responsibilities. When these prerequisites are realized, teacher educators can better model inquiry, establish research collaborations, and mentor emerging researchers. Mockler and Groundwater-Smith (2015) found that professional learning communities and practitioner inquiry models greatly increase research involvement. These collaborative frameworks encourage instructors to view research as an essential component of reflective teaching and professional development rather than an external imposition.

In summary, this study reinforces the growing consensus that research capability is not determined solely by academic qualifications or demographic factors but is significantly shaped by sustained engagement in research and access to collaborative, inquiry-oriented environments. To effectively build research capacity, teacher education programs must offer meaningful, continuous opportunities for research practice, supported through mentorship, collaboration, and appropriate resources. Integrating these strategies, fostering an inquiry culture, reframing institutional responsibilities, and promoting teacher-led research, can result in stronger and more equal research capability at all levels of the profession.

Limitations and Implications of Research

Although this study provides valuable insights, it has certain limitations related to its methodology and data. The use of self-perceived questionnaire surveys to assess research capacity dimensions may have led to superficial or biased responses from participants. To address this limitation, data triangulation was employed through a review of relevant literature and interviews with teacher educators, in-service teachers, and future teachers, thereby enhancing the validity of the findings. The study's conclusions carry important implications for both higher education and broader educational practice. Academics, researchers, and teacher training departments may need to revise curricula and adjust learning objectives to better support the development of research capacity, enabling teachers to become more active and competent participants in the educational research community.

Conclusion

This study aimed to explore the research capabilities and practices of teacher educators, in-service K–12 language teachers, and teacher candidates in language teacher training departments in Kazakhstan. Guided by two primary research questions, the study first examined which group, teacher educators, in-service teachers, or teacher candidates, demonstrates the highest level of research capability and how these levels compare across groups (RQ1). Second, it investigated the extent to which research capabilities among the three groups are associated with factors such as research engagement, educational background, age, and teaching major (RQ2). These questions were designed to provide a comprehensive understanding of how research competence differs across professional stages and what affects its development within the context of teacher education.

The findings reveal a clear stratification in research capability levels: teacher educators demonstrated the highest levels, followed by in-service teachers, while future teachers exhibited the lowest levels of research competence. Statistically significant differences were observed between the three groups in both overall research capabilities and across multiple research dimensions. Notably, research engagement frequency was positively associated with research capabilities across all groups, highlighting the central role of active research participation in developing competence. In contrast, age did not significantly influence research capability, and

academic majors had a limited effect, significant only among future teachers, but not among in-service teachers or teacher educators.

These results underscore the critical need to position research capacity building and engagement as foundational elements of teacher education programs. Strengthening research capabilities should be viewed not as an isolated academic objective, but as a strategic priority for cultivating reflective, inquiry-oriented educators. To support this goal, language teacher education programs should provide structured and sustained opportunities for teacher candidates and in-service teachers to engage in meaningful research activities, including action research, collaborative inquiry, and classroom-based investigations. Integrating research practice into coursework, practicum placements, and professional development initiatives can help foster a professional culture where research is both expected and fully supported as a central aspect of teaching practice.

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