

**TEACHER EDUCATION RESEARCH IN CENTRAL ASIA:
AN ANALYSIS OF JOURNAL PUBLICATIONS (2006-2016),
THE CASE OF KAZAKHSTAN**

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ABSTRACT

Educators around the world are concerned about the role research could or should play in determining teacher education (TE) policy and practice. After the collapse of the USSR in 1991, Kazakhstan embarked on an educational transformation. During a time when TE policy and science are in the process of active development in Kazakhstan, a vital question is how research in TE can be advanced. Still, little is known about the recent trends in the literature on Kazakhstani pedagogy or TE has arisen in the last decade. This analysis examines TE research in Kazakhstan published in academic journals from January 2006 to December 2016 and reviews the latest trends and patterns that have characterized TE research during this period.

Keywords: teacher education, research, in-service, pre-service, policy, Kazakhstan

INTRODUCTION

Educators around the world are concerned about “the role research could or should play in determining teacher education policy and practice” (Cochran-Smith and Zeichner, 2009). Teacher education practice, policy and research are both intertwined and interconnected. This connection is well-described in a report of the British Educational Research Association (BERA) and the Rehabilitation Services Administration (RSA) (2014) on the role of research in TE, suggesting it contributes to teacher education policy in several ways (where the content, design, and structure of TE programs are informed by research-based knowledge). Research can positively contribute to the teacher’s professional knowledge, practical wisdom, technical knowledge, and critical reflection (Pipere et al., 2015). In other words, research can facilitate a long-run and sustainable development of teacher education policy and practice.

Upon gaining independence after the dissolution of the USSR, Central Asian countries faced a wide variety of challenges and transformations with respect to their educational systems (Papieva, 2006). These have been characterized by a lack of quality research on TE and a lack of practice-oriented research on pre-service and in-service training of teachers (Ehlers, 2014; OSCE, 2003). To address systemic problems related to teacher education, it becomes important to develop TE research. In the Republic of Kazakhstan, a rapidly growing economy in the Central Asian region, TE has become a central agenda of educational reforms, where the national program of Kazakhstan for 2011–2020 set a goal of developing TE in the country (Wilson et al., 2013). While TE policy is in the process of active development in Kazakhstan, a vital question is: how can research in teacher education be advanced in order to improve teacher education programs and facilitate its sustainable development.

LITERATURE REVIEW

Teacher education research is of growing interest globally. It has become a key policy area within the educational literature. To illustrate, several studies indicate that, for example, the participatory action research may help to reorient teacher education towards sustainable development, enhance research skills, and frame a vision for the future in teacher education (Salite, 2015, 2008; Salite et al., 2009). Rigorous educational research is important for sustainable development of teacher education, enabling teachers to acquire the skills, professional knowledge, attitudes, and values necessary to shape a sustainable future (UNESCO, 2014). Developing educational research in the field of teacher education is important, helping to facilitate more evidence-based approaches to teacher education. In order to derive a rigorous and sustainable development of research in TE, the development of the scientific capacity in the field of TE becomes essential. To construct and facilitate the scientific capacity of TE, it is essential to understand how TE research is disseminated, and the outcomes of such research.

Within the framework of Western science, academic journals play an important role in TE research and policy making, and serve as a bridge for disseminating research-based knowledge across interested policy stakeholders. For example, Bernick and Krueger (2010) characterize academic journals as one of the most important mechanisms for disseminating the outcomes of research and scientific

innovations. In their studies, Wellington and Nixon (2005) indicate that academic journals are vital in determining not only the widespread parameters of educational studies, but also specific sub-fields within those parameters, credibility of which is dependent upon the publishing outlets that define, expound and constrain the field as a whole. In the past decade in the context of international research, the academic journals on TE have published a number of articles examining research developments on teaching and TE. For instance, Dooley et al. (2011) examine current conversations in the field of TE through the analysis of 721 articles published in the journals of TE between January 2006 and December 2009. Mills and Ballantyne (2016) conduct a review of research at the intersection of social justice and education published in peer-reviewed journals across 10 years (between 2004 and 2014), and recommended future research in the field. Schoenfeld et al. (2013) examined patterns of authorship affiliation across journals, with a primary audience of direct-service providers working with students with emotional or behavioral disorders (and published from January of 2000 to December of 2010). In their study, the researchers found that authors associated with institutions of higher education represented the majority of affiliations, with practitioners comprising only a small proportion. Such studies are important in that they help understand the typology of TE research outcomes, including its latest patterns and trends, thus aiding in identifying ways to facilitate the sustainable development of TE research.

The publication activity of Kazakhstani researchers in academic journals has received a degree of attention. Yessirkepov et al. (2015) examined the publication activity of scientific authors from Kazakhstan based on Scopus, SCImago Journal and Country Rank data from 2010 to 2015. Their review indicated that the number of indexed multidisciplinary articles from the country has been steadily growing since 2011; in fact, the publication activity of scientific authors from Kazakhstan was higher than that of authors from other Central Asian countries. However, there was a lack of research addressing recent trends of publication activity of Kazakhstani researchers in the field of TE. In addition, little is known about the ways in which the peer-reviewed body of research published in electronic databases is organized in relation to the TE in the last 10 years. Specifically, there is little information about the development of scientific capacity in the TE field, including information about the patterns of authorship affiliation or the types of articles published and topics discussed. Revealing the field's current status and tracing the development of TE research in Kazakhstan offers insights into this activity both in Kazakhstan and within the broader international field. The purpose of this study is to explore the general typology of peer-reviewed literature available in electronic databases related to TE in Kazakhstan within the last decade. The objective was to understand 1) the types of articles published; 2) the patterns of authorship affiliation; and 3) current topics discussed in the area of TE across peer-reviewed journals and related to the context of Kazakhstan within the last 10 years.

DATA AND METHODOLOGY

Focus of the study and the articles selection

Data for this qualitative study were collected on the basis of the EBSCOhost Discovery System during December 15–22, 2016. The content providers

included the following: Scopus, ERIC, SocINDEX with Full Text, ScienceDirect, Business Source Complete, Academic OneFile, Communication and Mass Media Complete, MasterFILE Premier, BioOne Online Journals, Social Sciences Citation Index, JSTOR Journals, LISTA, and Arts and Humanities Citation Index. The articles were searched using an advanced search method, where the following keywords were used: “teacher education” and “Kazakhstan.” To delimit research, the articles were retrieved in accordance with the following selection criteria: peer-reviewed, academic journals, search within the full texts of the articles, Russian language, and publication period between January 1st and December 31st of 2016. Comments, essays, interviews, conferences, and book-type materials were excluded from this review. After retrieving the selected publications, abstracts for each article were reviewed and full texts were analyzed in cases where it was necessary. Each study was examined for such details as the affiliation of author(s), publisher, the title of research, the type of article (including methodologies applied), and publication year. An Excel spreadsheet was applied for coding collected data and calculating the general frequencies of each code across all selected articles.

Coding and analysis

The first category established that related to article type was, is categorized as the following: research, literature review, and report. An article designed as research is one in which authors report results of original and empirical study conducted by authors; and describes methods used to collect data including various instruments (e.g. survey, interview, experiment, case study, narrative, etc.). Articles classified as a literature review are those in which authors conducted an analysis of a section of published body of knowledge through the summary, comparison, clarification, and evaluation of prior research studies.² Articles identified as a report are those in which the authors presented results of state or local school initiatives, programs or practitioner experiences while executing the practice (Schoenfeld et al., 2013).

The second category is related to the pattern of author affiliation. In their studies, Schoenfeld et al. (2013) classify the authorship affiliation as the following: 1) higher education institutions, 2) professional, 3) practitioner and 4) unidentified. The current study applies similar methodology to build a framework for analyzing the pattern of author affiliation. Higher education institutions (HEIs) include universities. Professional category includes authors whose affiliations come from different national, nonprofit centers and organizations specialized in increasing teacher qualifications and developing TE in the context of Kazakhstan. Authors classified as practitioners represented specialists associated with schools, including experimental schools for gifted children and Nazarbayev Intellectual Schools; and authors whose affiliations are unknown or not described were grouped under the “unidentified” category.

The third is to analyze the current topics discussed in TE, a coding scheme for the topic of article includes two categories:

² See, for example, Duke University. Writing Center article on Literature Review. https://twp.duke.edu/uploads/assets/lit_review.pdf and CQ University Library Literature Review Tutorial, 2016. Literature Review Tutorial. Retrieved from <http://libguides.library.cqu.edu.au/litreview>, Last accessed December 12, 2016.

- a) TE related to pre-service TE at pedagogical university schools that prepare a new generation of teachers;
- b) in-service TE that includes in-service training of teachers; teacher training; ongoing teacher professional development; school-, university-, or institution-based teacher professional development and continuous teacher professional development.

RESULTS AND DISCUSSION

A total of 82 peer-reviewed articles related to TE in Kazakhstan and published in academic journals between 2006 and 2016 were identified and retrieved for analysis. The articles were written in Russian and published in 52 different academic peer-reviewed journals related to the discipline of TE and the sciences. The majority of studies were published in the last 4 years. The analysis indicated that the evidence for TE research has been strengthened since 2012, with 12% of articles published in journals (having reached a peak in 2015, with 28% of articles published in peer-reviewed academic journals. This rise in publications might be related to an accelerated socioeconomic development of Kazakhstan in the early 21st century, which has caused a need for educators with a high level of competencies.³ This aligns with the study conducted by Yessirkepov et al. (2015), which indicated a steadily-growing trend of indexed and multidisciplinary publication activity by Kazakhstani researchers from 2011 onward. At the same time, it is worth mentioning that the requirement to have articles in indexed journals to defend Ph.D. dissertations was imposed by the Ministry of Education and Science of the Republic of Kazakhstan in 2011. Reviewing the overall distribution of articles published across journals since 2006, it can be seen that the majority have been published in seven journals.

Table 1. *Journals and Frequency of Articles*

#	Name	Number	Percentage
1	International Journal of Applied and Fundamental Research (Mezhdunarodnyi Jurnal Prikladnyh I Fundamentalnyh Issledovani)	7	9%
2	Vektor of Sciences of National Toliattinks University (Vektor Nauki Toliattinskogo Gosudarstvennogo Universiteta)	6	7%
3	European Researcher	5	6%
4	International Journal of Experimental Education (Mezhdunarodnyi Jurnal Eksperimentalnogo Obrazovania)	5	6%
5	Theory and Practice of Social Development	3	4%
6	Science and World (Nauka i Mir)	3	4%

³ See, for example, NIS. 2008. History of NIS creation. <https://nis.edu.kz/en/about/history/>

7	Kazan Pedagogic Journal (Kazanskii Pedagogicheski Jurnal)	2	2%
8	Azimuth of Scientific Research: Pedagogy and Psychology (Azimut Nauchnyh Isledovani: Pedagogika I Psihologia)	2	2%
9	Philosophy of Education (Filosofija Obrazovanija)	2	2%
10	Current Problems of Science and Education (Sovremennye Problemy Nauki i Obrazovania)	2	2%
11	Herald of Mininsk University (Vestnik Mininskoko Universiteta)	2	2%
12	The Path of Science (Put' Nauiki)	2	2%
13	Journal of Social Policy Studies	2	2%
	Other <2	39	50
	Total	82	100%

Source: EBSCOhost Discovery System

CURRENT TOPICS IN THE AREA OF TEACHER EDUCATION

Finding 1: Technology/innovative approaches as current topics in the area of TE

In order to study the themes of 82 peer-reviewed articles, the following coding of thematic areas was applied: pre-service TE and in-service TE. On average, 54% of articles were devoted to in-service teacher education in Kazakhstan and 46% were related to the development of pre-service TE. The research on TE included 15 main thematic areas. The data evidently suggested that the role of IT and innovative approaches in TE research is important. The most frequent publications in TE are devoted to application of IT and innovative approaches (18%) in TE practices, the development of personality and patriotic feeling of teachers (29% for pre-service TE), and professional skills (11% for in-service TE; 16% for pre-service TE).

The revealed facts also demonstrated that TE research tends to be developed in such areas as creative thinking, multilingualism and foreign languages, and the system of higher education institutions. Nevertheless, topics with regard to sustainability initiatives appeared less often. Such topics as vocational training, inclusive education, courses development, the study of international experience and comparative analysis, experimental schools experience, legal framework, CPD, and teacher interactions appear to be less eminent, forming small topical categories. Articles that studied in-service TE mentioned the necessary characteristics of developing teacher professional training and its important role in modernizing the educational system of Kazakhstan. Examples of articles on in-service TE included two articles by Balakayeva et al. (2015) and Baronina (2013), who examined the role of transferring experience and practice of experimental schools. Five studies by Baihonova (2015), Senina (2015), Vlassenko and Batyrbaeva (2015), Vlassenko and Chemodanova (2015) researched the important role of application of IT facilities and new approaches to increasing teacher qualifications. They also conducted cross-

country comparative analyses of TE systems. Other studies reporting on teacher professional development in the context of multilingual inclusive education (Akhmetova, 2016), studying normative legal bases of systems of professional development of teachers (Mukanova and Mukhatayev, 2015); the role of teacher interactions and knowledge exchange (Vlassenko and Pustovalova 2012; Vlassenko and Chemodanova 2012) and developing independent work skills during teacher training programs (Vlassenko and Batyrbaeva, 2015). Tables 2 and 3 present the frequency and proportions of articles in terms of subjects related to in-service and pre-service TE.

Table 2. *Subjects of Articles on In-Service TE*

<i>Themes</i>	<i>Number</i>	<i>Percentage</i>
Technology/Innovative approaches	8	18%
Competence development	5	11%
Multilingualism and foreign languages	4	9%
Higher education institutions/Masters level	4	9%
Teacher independent work/School teacher/research skills development	4	9%
Teacher-defectologists/Inclusive education	4	9%
Course development	4	9%
International experience/comparative analysis	3	7%
Experimental schools experience	2	5%
Legal framework	2	5%
Continuous professional development	2	5%
Pedagogical/Teacher interactions	2	5%
Total	44	100

Note: Percentage column reflects the number of articles discussing the theme out the total number of articles on in-service TE

Source: EBSCOhost Discovery System

The role of pre-service TE at pedagogical universities is reported by many authors as a determining factor in developing competitive teachers. Four studies analyzed the ways of optimizing and developing the system of higher education institutions, including conditions of innovative development (Laryushina et al. 2014; Panin 2013; Samerkhanova and Imzharova 2014; Zelvys et al. 2014). Mirza (2015), Bakirov and Asanaliev (2013) Nagymzhanova (2013) and Maltekbasov (2014) discussed the current trends of modernization of educational system, and development of creative thinking of future teachers. Five studies conducted research on pedagogical terms of developing competence and preparing future teachers in different disciplines including mathematics, trade education, military, and music (Shmigirilova 2015; Muhamedina, 2016 and Zhaksylykov, 2015). Ertayeva (2014) reported on the role of multilanguage educational environment related to TE. It is worth noting that most of reviewed studies on pre-service TE (Khan and Kolumbaeva, 2015; Sarzhanova and Kvasnyh, 2013; Vlassenko and Khrushchev, 2015; Dzhilkishieva, 2012; Aubakirova, 2010; Kusainov and Bulatbayeva, 2011) also emphasized the role of personality development

and patriotic training of the future generation of teachers. Asylbekova (2014) reviewed the importance of vocational training of future preschool teachers.

Table 3. *Subjects of Articles on Pre-Service TE*

<i>Themes</i>	<i>Number</i>	<i>Percentage</i>
Personality development/Patriotic training	11	29%
Technology/modernization	7	18%
Competence development in disciplines	6	16%
Creative thinking/Creativity skills development	5	13%
Higher education institutions	4	11%
Vocational training	3	8%
Multilingual environment	2	5%
Total	38	100

Note: Percentage column reflects the number of articles discussing the theme out of the total number of articles on pre-service TE

Source: EBSCOhost Discovery System

However, several topics related to the field of TE never seemed to emerge. Areas insufficiently addressed included rural teacher needs and make urban versus rural comparisons of the effectiveness of TE programs. This theme seems to be important issue in the sphere of education of Kazakhstan. First, there is the statement, “well-being of the village is a well-being of the country” by the president of Kazakhstan envisages rural TE as an important factor in forming an educated prosperous nation (Mussina, 2015). Secondly, rural teachers comprise 61.6% of the general teacher population in Kazakhstan (Mussina, 2015). They thus may play a key role in successful implementation of education reforms. A greater understanding of rural teachers’ perceptions of TE programs could provide valuable information that could support the design and refinement of TE programs and curricula in the country.

TYPES OF ARTICLES AND PATTERNS OF AUTHORSHIP AFFILIATION

Finding 2.1. Literature review as the most common type of articles published

Within the overall patterns, the most common type of articles published by authors is a critical analysis of a section of published TE knowledge through summary, comparisons, clarification, and evaluation of prior research studies (see Table 4).

Table 4. *Types of Articles*

<i>Types of Articles</i>	<i>Number</i>	<i>Percentage</i>
Literature Review	42	52
Research	29	35
Report	11	13
Total	82	100%

Source: Report on the role of research in TE

These types of articles are not research studies; they do not present new data or original investigations conducted by the authors. Although the vast majority of Kazakhstani authors have a tendency to publish literature review-type articles, the second large proportion of articles belong to research-type articles. The least common type of articles published by authors was report (see Table 4).

Explanations for largely focusing on literature review-type of articles by the vast majority of Kazakhstani authors might relate to an insufficient knowledge of how to conduct original research and empirical studies. For example, in their own studies, Yessirkepov et al. (2015) discussed numerous problems encountered by researchers, authors, and editors in Kazakhstan. They suggested writing skills of most authors were still inadequate and recommended that action be undertaken to help authors better understand the principles of research methods and methodology. Additionally, authors', whose affiliation is written in Russian about TE in the context of Kazakhstan, represent not only Kazakhstan, but also other countries of Central Asia, Russia, Ukraine and the United States.

Finding 2.2. HEIs as the most common type of author's affiliation

The data on professional characteristics of authors indicated that the majority (57%) were representatives of higher education institutions. Authors with unidentified affiliations represented 21% and professional authors affiliated with national, nonprofit centers and organizations accounted for 11%. Authors' articles formed by co-authorship and came from both HEIs and professional affiliations comprised 7% of the total. Teaching practitioners (4%) represented the fewest publications in academic journals. This finding aligns with the study conducted by Schoenfeld et al. 2013 that found authors associated with institutions of higher education represented the vast majority of affiliations, whereas practitioners comprised only a small proportion of authors. In their studies, Schoenfeld et al. (2013) and OSCE (2003) mention heavy workload and other administrative tasks that may discourage more ample representation of practitioners in research and publication activities.

Finding 2.3. HEIs' researchers are the most frequently publishing authors of research type articles

In order to find out who is most frequently publishing research articles, data on author's affiliation of research type articles were analyzed. The data showed that, in recent years, the great majority of researchers from HEI's (66%) of Kazakhstan have noted the importance of TE and participated actively in data collection, analysis and empirical studies. Authors associated with institutions of higher education represented such universities of Kazakhstan as North-Kazakhstan State University, Kazakh State Women's Teacher Training University, National Abai Pedagogical University, Southern Kazakhstan State University, Oskemen East-Kazakhstan State University, Kazakh Agro Technical University (Nur-Sultan), National University of Karagandy, Medical State University of Semei, and Eurasian National University. Professionals publishing research articles in academic journals accounted for 28% across all author affiliations; and practitioners appeared least frequently as authors of research articles and

accounted for 3%.

Although practitioners had the smallest number of authors of research articles, they published a higher number of report-type articles (18%) compared to other categories of author affiliation. This may relate to the fact that, in 2008, intellectual experimental schools were created by Kazakhstan government as a platform for introducing the latest innovations in education (Chukurova and Abdildina, 2014). At the early stages of this initiative, it was expected that practitioners, including teachers at schools in Kazakhstan, would represent the vast majority of research article publications. The creation of the Nazarbayev Intellectual School in Kazakhstan required professional development programs in TE to help teachers to develop necessary skills and knowledge. However, this assumption was not confirmed within the current study. It may serve as the basis for further research that would investigate the reasons behind low representation of Kazakhstani practitioners in original research. Authors from professional and practitioner affiliations represented such organizations as the National Center for Professional Development “ORLEU” of Kazakhstan’s different regions, Center of Excellence, Nazarbayev Intellectual Schools, Institute of Professional Development of Pedagogical Workers of the Kostanay region, and the Institute of Improving Teachers’ Qualification of the Aktobe region.

Finding 2.4. Shared authorship

The majority of articles (62%) were written by authors in a joint co-authorship, while 38% of 82 articles appeared to be published by single authors. There was an observed shared authorship between authors affiliated with institutions of higher education and professional organizations. Authors co-authored articles most frequently with their colleagues from Kazakhstan, a few co-authored with colleagues from Russia or the United States. About 38% of single authors is most frequently associated with a Kazakhstani affiliation.

To sum-up, several important features of TE research in Kazakhstan can be highlighted. First, the most common type of articles published by authors is descriptive in nature. Relatively less original research on TE written in Russian language has been conducted in the context of Kazakhstan within the last decade. Second, authors associated with institutions of higher education represent the vast majority of authors across all types of articles. Moreover, they appear most frequently as authors of research articles. Third, there is a general tendency of co-authoring article between authors affiliated with institutions of higher education and professional organizations; authors co-author articles most frequently with their colleagues from Kazakhstan; articles are most frequently written by authors in a joint co-authorship rather than in a single authorship. Fourth, practitioners appear least frequently as authors of research articles; however, they mostly appear as authors of reports. Fifth, analysis indicates that TE research in Kazakhstan has been strengthened in the last 4 years and has been steadily growing since 2012, reaching the highest number of publications in 2015. Sixth, the vast majority of publications in the area of TE is devoted to discussing the application of IT and innovative approaches in TE practices, the development of competence skills, personality and patriotic feeling of teachers. Several topics never seemed to emerge related to the field of TE that would address rural teacher needs giving the fact that rural teachers comprise the vast

majority of general teacher population in Kazakhstan. Moreover, the topics with regard to sustainability initiatives in TE research seem to appear less often in Kazakhstan.

CONCLUSION

This study helps to improve our understanding of the general typology of peer-reviewed literature output available in the electronic database related to TE in Kazakhstan within the last decade. Specifically, the study explores the trends related to the types of articles published, the patterns of authors' affiliation and the current topics discussed in the area of TE research, and calls for the need to facilitating a sustainable development of TE research in Kazakhstan. TE research in Kazakhstan needs to become more original in nature, multi-disciplinary and apply multi-methodological approaches (Pipere et al., 2015). Although the evidence for TE research in Kazakhstan has been steadily growing since 2012, more empirical studies are needed on TE in relation to various aspects. More research training opportunities should be provided to practitioners in Kazakhstan that would encourage their active participation in research; share and disseminate their knowledge and experience across the field. More balanced dissemination among affiliations of authors representing higher education institutions, professional organizations and practitioners across literature is necessary in order to enhance more comprehensive body of peer-reviewed TE research in Kazakhstan. It is hoped such research collaboration will help to form foundations for a research-rich TE system at the time of designing TE policies and practices.

Policies need to be directed toward building and strengthening the scientific capacity and research infrastructure of authors representing higher education institutions, professional organizations and practitioners to foster rigorous and innovative TE research. More participatory action research conducted by practitioners and teachers may help to appear them as the authors of research articles, reorient TE towards sustainable development, and construct the vision for the future in teacher education (Salite, 2008, 2015; Salite et al., 2009). It will allow teachers acquire the skills, competencies, attitudes and values necessary to shape a sustainable future (UNESCO, 2014) of TE policy and practice. A full-scale research is needed in order to comprehensively understand the complexity of TE research in Kazakhstan.

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