

UDC 376.1:371.13

IRSTI 14.35.07

<https://doi.org/10.48371/PEDS.2026.82.3.032>

FORMATION OF METHODOLOGICAL COMPETENCE OF FUTURE SPECIAL EDUCATION TEACHERS IN THE PROCESS OF PRACTICE-ORIENTED TRAINING

*Suleimen A.¹, Bekmuratova G.², Mamytbayeva Zh.³, Kamytbek A.⁴

*^{1,2}Kazakh National Pedagogical University named after Abay
Almaty, Kazakhstan

^{3,4}South Kazakhstan Pedagogical University named after U.Zhanibekov
Shymkent, Kazakhstan

Abstract. This research is based on an empirical analysis of the impact of practice-oriented training on the formation of methodological competence of future special education teachers. In today's inclusive education, the development of professional training and methodological competence of future special education teachers is one of the most pressing issues. Therefore, the study examined the relationship between practice-oriented training, professional practice experience, and reflection. The data for the study were collected through a survey of 364 future special education teachers studying at the Abai Kazakh National Pedagogical University. The Partial Least Squares Structural Equation Modeling (PLS-SEM) method was used in the SmartPLS program to analyze the data obtained. The questionnaire included four main latent constructs. These were: practice-oriented training, professional practice experience, reflection and self-analysis, and methodological competence of future special education teachers.

The study found that practice-oriented training has a significant positive effect on professional practice experience ($\beta = 0.510$). Also, professional practice experience had a positive effect on the level of reflection ($\beta = 0.490$). And it turned out that reflection plays an important role in the formation of methodological competence of future special education teachers ($\beta = 0.491$). The structural model explains 26.0% of professional practice experience, 24.0% of reflection, and 24.1% of methodological competence.

The results of the study show that practice-oriented training effectively develops the methodological competence of future special education teachers, not directly, but through professional practice experience and reflection. The results of the study demonstrate the importance of systematically organizing practical training and reflective activities in the training of special education teachers and provide a scientific basis for improving pedagogical education programs.

It should be emphasized that the data of this study are cross-sectional and were obtained at a single point in time. The coefficients reported above therefore express statistically significant relationships between the constructs in the direction assumed by the theoretical model, and not experimentally established cause-and-effect relations. The terms ‘effect’ and ‘influence’ are used below in this model-based sense.

Keywords: special education teacher, practical training, methodological competence, professional practice, reflection and self-analysis, inclusive education, PLS-SEM, SmartPLS program

Introduction

Currently, the training of future special education teachers is a key task for higher education institutions. This process responds to the dynamics of the current education system and plays an important role in advancing inclusive education. In recent years, practice-oriented teaching methods have received special attention. They are an important tool for developing teachers’ professional competencies. Practice-oriented teaching is not limited to theoretical education, but also allows students to develop practical skills [1]. Research has shown that future teachers’ methodological competence develops through practical experience and reflection during the learning process. This provides high-quality education based on comprehensive teaching experience. In modern times, the methodological competence of special education teachers, that is, the ability to effectively plan and implement the educational process, is of particular importance. This competence requires alignment with the principles of inclusive education. The ability to recognise changes in educational contexts and to apply pedagogical ideas creatively is therefore a necessary condition of effective professional activity [2]. That is, the methodological competence of the teacher, his role as an organizer of pedagogical practice, ensures the effective implementation of modern solutions and educational reforms aimed at developing inclusive education [3].

Professional practice and reflection play a crucial role in developing the competence of future special educators. During professional practice, students engage in real educational situations and various pedagogical methods. Such practical work allows students to evaluate, update, and improve their own methodologies. Also, through reflection, they comprehensively analyze the results of their experience [4]. Reflection is an act of evaluating the lessons learned and achievements, taking into account one’s own actions and relationships in the teaching process. As previous studies have shown, reflection is considered an important aspect of pedagogical practice. Because it allows future teachers to deeply understand their own methodologies and practices.

However, there are also significant gaps in the international literature that has studied the specific impact of practice-oriented training on the formation of

methodological competence. In particular, there is a lack of empirical research that considers the relationship between the inclusive aspect of education and practical teaching methods. Although many researchers and scholars have proposed a deeper study of the associations and effects between practical teaching and reflective practice, there is a lack of specific data and examples [5]. Therefore, this study was conducted to determine the role of practice-oriented teaching in the development of methodological competence of future special education teachers. Thus, the purpose of the study is to analyze the impact of practice-oriented teaching on the development of methodological competence during the training of future special education teachers. The research aims to identify the importance of practical experience, reflection, and methodological preparation, which will contribute to increasing the effectiveness of inclusive education. As a result, the collected data will help provide a conceptualization of the pedagogical education system.

In line with this aim, the study addresses the following specific research objectives: (1) to operationalise practice-oriented training, professional practice experience, reflection and self-analysis, and methodological competence as four conceptually distinct latent constructs, and to verify the reliability and validity of their measurement; (2) to test the relationship between practice-oriented training and professional practice experience; (3) to test the relationship between professional practice experience and the level of reflection; (4) to examine the contribution of reflection to the methodological competence of future special education teachers; and (5) to assess the explanatory power of the resulting structural model and, on this basis, to formulate recommendations for special education teacher preparation programmes. Accordingly, three hypotheses are tested: H1 - practice-oriented training is positively related to professional practice experience; H2 - professional practice experience is positively related to the level of reflection; H3 - reflection is positively related to the methodological competence of future special education teachers.

In the international literature, many studies have been conducted on the theoretical foundations of the practice-oriented learning system, the role of practical learning in the training of special educators, the importance of professional practice and reflection, the scientific structure of methodological competence, as well as the insufficient study of the aspects presented as the object of research are comprehensively considered.

The theory of practice-oriented learning (experiential learning) prioritizes students' experience in the educational process. The experiential learning model of Kolb [6] provides a unique opportunity to strengthen the connection between the presentation and application of information during the learning process. The theory of experiential learning is based on teacher training, practical work, and reflection. That is, it affects the development of the necessary personal and

pedagogical skills [7]. Experiential learning, in addition, requires students' active participation and the development of thinking and problem-solving abilities [8].

Today, given social, cultural, and academic developments, the role of practical training in the preparation of special education teachers is unique. Practical experience is necessary to familiarize oneself with the features of special education. Because it helps future teachers understand children's diverse needs and develop their professional skills and abilities. Practical training prepares special education teachers to work effectively in professional settings. This strengthens teachers' methodological competence. For example, research has shown that practical training is an effective educational strategy and increases the demand for future teachers' work [9].

Professional practice requires specialized training to enhance teachers' and students' experience in the educational process. Practical experience provides an opportunity to improve the methodological competence of future teachers. It provides a comprehensive system for assessing students' knowledge and achievements [10]. Through professional practice, special education teachers can practically implement the principles of inclusion in special education. This helps to strengthen their reflective skills and increases their desire for professional development [11].

Reflection plays an important role in professional and methodological development, as it allows teachers to deeply analyze their actions, decisions, and experiences. Research has shown that reflection contributes to teachers' personal and professional development, as they can learn from their experiences and apply them in future teaching [12]. Reflection also helps to increase the effectiveness of special education teachers in inclusive education. Because they update their practices to take into account learners' needs [13]. Methodological competence is a key element of future teachers' professional achievements. It includes aspects such as pedagogical knowledge and experience, communication skills, reflective abilities, and problem-solving. The structure of methodological competence comprises various components, and their development is the most important aspect of the training of special education teachers. According to research, methodological competence increases teachers' involvement in the learning process, thereby improving the quality of education [14]. At this point, there are still significant contradictions and insufficiently studied works in the international literature on systematic research on the training of special education teachers. This is due to the lack of empirical space to assess the effectiveness of practical training and, specifically, to study the impact of professional practice [15]. In addition, the practical results of reflection and methodological competence should be studied in the context of individual teaching practices.

Since the key notions used in this study are closely interrelated, they require clear conceptual differentiation. Professional competence is understood

here as the broadest category: the whole system of knowledge, skills, values and personal qualities that enables a teacher to perform professional functions. Methodological competence is treated as a narrower, operational component of professional competence: the ability to set instructional aims, select, design, and adapt teaching and correctional methods for learners with special educational needs, evaluate outcomes, and justify these methodological decisions. Practice-oriented training is defined at the curriculum level: it is a way of organizing the educational process in which theoretical content is systematically mastered through authentic professional tasks, the modelling of professional situations, and regular mentor feedback. Professional practice experience, by contrast, is defined at the student level: it is the accumulated experience of relatively independent professional activity in real educational settings during teaching practice. Reflection and self-analysis denote the conscious analysis of one's pedagogical actions, the identification of one's errors, and the planning of ways to correct them. In the model tested here, therefore, practice-oriented training functions as a curricular condition, professional practice experience and reflection as mediating personal processes, and methodological competence as the resulting outcome. Each of the four constructs was operationalized through its own set of four indicators (Table 2), preventing conceptual overlap between them.

Recent international research supports this line of reasoning. Studies of practice-based teacher education show that the components of the practicum that involve independent application of knowledge and structured mentor feedback contribute most strongly to future teachers' readiness for inclusive practice. Systematic reviews of reflection during field experiences indicate, in turn, that reflection does not develop spontaneously but only when it is explicitly structured and supported within the programme. Research on preparation for inclusive education also confirms that teachers' practical experience is among the strongest predictors of their professional beliefs and readiness to work with learners with special educational needs. At the same time, empirically validated models describing how these components are linked in special education teacher training remain scarce, and the present study addresses this gap.

The hypotheses of this study are based on the integration of components of professional practice and reflection, thereby increasing the importance of practice-oriented training in the formation of methodological competence among future special education teachers (H1, H2, H3). The results obtained contribute to a deeper understanding of the role of practical training, the importance of professional practice, and the impact of reflection, and have a positive impact on the professional development of future special education teachers. Therefore, the data collected during the study are important for demonstrating a systematic approach to improving practical-oriented training and developing methodological competence.

Materials and methods

The study employed a quantitative research design and aimed to provide a comprehensive empirical analysis of the factors influencing the development of methodological competence among future special education teachers. During the study, data were collected from future special education teachers studying at the Abai Kazakh National Pedagogical University using a questionnaire. The study sample comprised 364 respondents. This indicator is sufficient for the PLS-SEM method and corresponds to the recommended sample size. Partial Least Squares Structural Equation Modeling was used to analyze the collected data, and the calculations were performed in SmartPLS. This method allows you to assess causal relationships among variables in complex structural models and to evaluate the quality of reflective measurement models.

The data collection instrument was a structured questionnaire the authors developed based on the four theoretical constructs described above, with item content informed by previously published work on practice-based teacher education and reflective practice. Items were formulated separately for each construct so each construct would be measured by its own set of indicators and conceptual overlap between constructs would be avoided. The final instrument contains 16 items, four per construct (Table 2). All items are worded as first-person statements about the respondent's own learning, practical activity and reflective work, and all are answered on a five-point Likert scale (1 – “strongly disagree”, 5 – “strongly agree”). Since the instrument was newly constructed for the present study, its psychometric quality was not assumed but assessed empirically on the full sample: indicator reliability through the outer loadings (Table 3), internal consistency through Cronbach's Alpha and composite reliability, convergent validity through the average variance extracted (Table 4), and discriminant validity through the HTMT criterion (Table 5). The outcome of this assessment is reported in the Results section.

Participants were selected by non-probability purposive sampling. The target population consisted of students enrolled in the special pedagogy educational programmes at Abai Kazakh National Pedagogical University who had completed at least one period of professional (pedagogical) practice, since prior practical experience was necessary to answer the items on professional practice and reflection. Students meeting this criterion were invited to complete the questionnaire; 364 usable responses were obtained and were retained for analysis after screening for missing values and invariant response patterns. Table 1 presents the sample's demographic composition. Participation was voluntary and anonymous; respondents were informed of the study's purpose and their right to withdraw at any stage, and no personal identifying data were collected.

PLS-SEM was chosen because the study is exploratory and prediction-oriented, the model includes several sequentially mediating constructs, and the

method does not require the assumption of multivariate normality. The analysis followed the two-stage procedure recommended for variance-based structural equation modelling: the reflective measurement model was assessed first (indicator loadings, Cronbach's Alpha, composite reliability, average variance extracted and the HTMT criterion of discriminant validity), and only then was the structural model estimated. The path coefficients and R^2 values were obtained using the PLS algorithm in SmartPLS.

Table 1. Demographic characteristics of study participants (N=364)

Variable	Category	Number	Share (%)
Gender	Female	284	78,0
	Male	80	22,0
Age	18–20	186	51,1
	21–24	178	48,9
Grade	2	80	22,0
	3	124	34,1
	4	116	31,9
	Master's degree	44	12,0

Table 1 presents the demographic characteristics of the respondents who participated in the study. A total of 364 students participated in the study, the majority of whom were girls. The age profile and educational backgrounds of the respondents indicate that they span different stages of the system for training future special education teachers. At the same time, since all the respondents were recruited from a single university, the sample cannot be regarded as statistically representative of all future special education teachers in the country. Therefore, generalize the findings with caution and interpret them as analytical rather than statistical generalizations.

Table 2. List of survey constructs and indicators used in the study

Construct	Indicator	Question content
Practice-Oriented Learning	PBO1	Practical tasks based on real professional situations were used during the learning process
	PBO2	Theoretical content was reinforced through practical activities
	PBO3	Tasks aimed at making methodological decisions were performed during practice
	PBO4	Systematic feedback from instructors or mentors was provided during the learning process
Professional Practice Experience	PRA1	I independently conducted correctional/teaching sessions during practice
	PRA2	The content of the practice corresponded to my future professional activities

	PRA3	I worked with methodological documentation (lesson plans, programs) during practice
	PRA4	Practice contributed to the development of my methodological skills
	REF1	I systematically analyzed my actions after practical activities
	REF2	I identified my mistakes and planned ways to correct them
Reflection and Self-Analysis	REF3	I used feedback from instructors or mentors for my professional development
	REF4	I can justify and explain my methodological decisions
	AQ1	I can methodologically plan the objectives and content of a lesson (correctional session)
	AQ2	I can select appropriate teaching methods for learners with special educational needs
Methodological Competence	AQ3	I can adapt teaching methods based on diagnostic results
	AQ4	I can analyze my methodological activities and identify ways to improve them

A structured questionnaire was used as a data collection tool in the study. As shown in Table 2, each construct was measured by four indicators, which fully meet the requirements for using the PLS-SEM method.

All survey questions were designed to assess the experience, methodological actions, and reflective skills of the participating respondents during the learning and practice process. The questionnaire statements were systematically constructed to allow comprehensive measurement of the professional training of future special educators.

The answers were measured on a 5-point Likert scale (1 – «strongly disagree», 5 – «strongly agree»). All constructs were treated as reflective measurement model indicators, and the PLS-SEM method in SmartPLS was used to analyze the data.

Results

The results obtained are presented as the analysis of factors influencing the development of methodological competence among future special education teachers. The analysis of the collected data was conducted in SmartPLS using Partial Least Squares Structural Equation Modeling (PLS-SEM). First, the measurement model's reliability and validity were assessed, and then the hypotheses derived from the structural model were tested in the program. The results of the study confirm the theoretical validity of the research model and empirically demonstrate the importance of practice-oriented training in preparing future special education teachers.

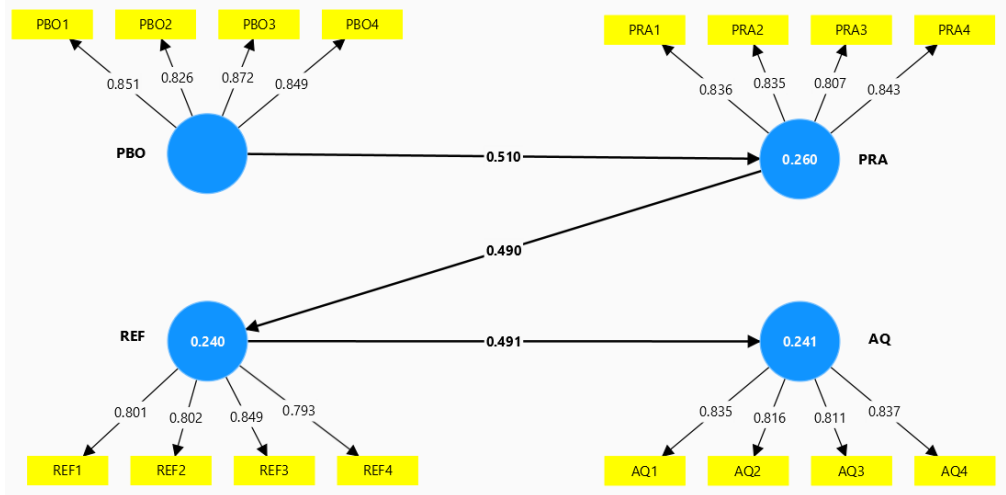


Figure 1 - PLS-SEM model showing the impact of practice-oriented training on the methodological competence of future special education teachers

Figure 1 above presents a structural model that demonstrates the impact of practice-oriented training on the methodological competence of future special education teachers. The results of the study show that practice-oriented training has a significant positive impact on professional practice experience ($\beta = 0.510$). This indicates the importance of practical training elements in improving students' professional preparation.

Also, professional practice experience has a positive impact on the level of reflection ($\beta=0.490$), and reflection, in turn, has a significant impact on the formation of methodological competence of future special education teachers ($\beta=0.491$). The results reveal the mediating role of professional practice and reflection in the process of practice-oriented training.

The R^2 indicators characterizing the explanatory power of the developed model showed that they explain 26.0% of professional practice experience, 24.0% of reflection, and 24.1% of methodological competence. These values are considered satisfactory for empirical research in the fields of pedagogy and the social sciences. In general, the results of the study indicate that practice-oriented training effectively develops the methodological competence of future special educators, not directly, but through professional practice experience and reflection.

Table 3. Indicator loadings of the measurement model (Outer Loadings)

Construct	Indicator	Load value
	PBO1	0,851
	PBO2	0,826
	PBO2	0,826

Professional Practice Experience	PBO3	0,872
	PBO4	0,849
	PRA1	0,836
	PRA2	0,835
	PRA3	0,807
Reflection and Self-Analysis	PRA4	0,843
	REF1	0,801
	REF2	0,802
	REF3	0,849
	REF4	0,793
Methodological Competence	AQ1	0,835
	AQ2	0,816
	AQ3	0,811
	AQ4	0,837

Table 3 shows the external loadings of all indicators in the measurement model. The loading values of all indicators are above the recommended threshold of 0.70 and range from 0.793 to 0.872. These indicators accurately and reliably measure the corresponding latent variables. Thus, the indicator reliability of the measurement model has been comprehensively studied and fully ensured.

Table 4. Indicators of construct reliability and convergent validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
PBO	0,872	0,912	0,722
PRA	0,850	0,899	0,690
REF	0,827	0,885	0,658
AQ	0,844	0,895	0,681

Table 4 shows the internal consistency and convergent validity of the constructs in the research model. Cronbach's Alpha ranges from 0.827 to 0.872 and composite reliability from 0.885 to 0.912, so that both indicators exceed the recommended threshold of 0.70 for all four constructs. The AVE values range from 0.658 to 0.722 and thus exceed the threshold of 0.50, which means that each construct explains more than half of the variance of its own indicators [20]. These results confirm that the measurement model is reliable and convergently valid.

Table 5. Results of discriminant validity assessment (HTMT criterion)

Construct	PBO	PRA	REF	AQ
PBO	—			
PRA	0,591	—		
REF	0,330	0,578	—	
AQ	0,448	0,530	0,584	—

Table 5 presents the results of the discriminant validity assessment of the constructs in the study. All HTMT values do not exceed the recommended threshold of 0.85. This proves that each construct in the research model is empirically distinguishable from the others. Therefore, discriminant validity was fully ensured.

Table 6. Structural Model Correlation Results (Path Coefficients)

Connection	β coefficient
PBO → PRA	0,510
PRA → REF	0,490
REF → AQ	0,491

Table 6 presents the results of testing the hypotheses according to the structural model. Practically-oriented training has a significant positive effect on professional practice experience ($\beta = 0.510$). It was found that professional practice experience has a significant effect on the level of reflection ($\beta=0.490$), and reflection plays an important role in the formation of methodological competence of future special educators ($\beta=0.491$).

Table 7. Results of the explanatory power of the structural model (R²)

Construct	R ²
PRA	0,260
REF	0,240
AQ	0,241

Table 7 above shows the level of explanation of the dependent variables of the structural model. According to the results, the model indicates 26.0% of professional practice experience, 24.0% of reflection, and 24.1% of methodological competence. These indicators are considered satisfactory for empirical research in the fields of pedagogy and social sciences in practice. In general, the results confirmed that practice-oriented training plays an important role in the development of methodological competence among future special education teachers. It was clearly established that this effect is not direct, but rather through professional practice experience and reflection. The results of the study indicate the importance of systematically integrating practical training and reflection into the training of special education teachers.

Discussion

The purpose of the study was to conduct a comprehensive empirical analysis of the impact of practice-oriented training on the formation of methodological competence of future special education teachers. The results confirmed the theoretical conclusions of the research model and showed

that practice-oriented training plays an important role in the development of methodological competence. The study found that practice-oriented training has a significant positive effect on professional practice experience ($\beta = 0.510$). The results indicate that combining theoretical knowledge with practical experience during training for future special education teachers increases their professional readiness. Practical tasks, modeling of professional situations, and participation in specific corrective work increase students' readiness for professional activity. This conclusion is consistent with the results of international studies that prioritize practical training in pedagogical education. It was also found that professional practice experience has a significant positive effect on the level of reflection ($\beta = 0.490$). This result shows that it is important for students to consciously analyze and evaluate the knowledge and skills they acquire during professional practice. Reflection provides an opportunity not only to gain practical experience but also to deeply understand and reflect on it professionally. In this context, the study's results clearly demonstrate that reflection is an integral part of the professional development of future special education teachers.

The impact of reflection on methodological competence was also strong ($\beta=0.491$). This indicator indicates that through reflection, future special education teachers can evaluate their methodological actions and realistically identify ways to improve them. Reflection affects the development of students' methodological decision-making skills, adapts the learning process, and takes into account students' individual characteristics. Therefore, reflection is considered a key connecting factor in the formation of methodological competence.

The R^2 indicators characterizing the explanatory power of the constructed model showed that the research model explains 26.0% of professional practice experience, 24.0% of reflection, and 24.1% of methodological competence. These values are considered satisfactory for empirical research in the fields of pedagogy and the social sciences. These indicators indicate that practice-oriented training makes a significant contribution to the formation of methodological competence of future special education teachers.

In general, the study's results show that practice-oriented training develops the methodological competence of future special education teachers not directly, but through professional practice and reflection. This indicates the importance of systematically organizing practical training and purposefully integrating reflective activities into the training of special education teachers. The results will provide a scientific basis for improving special education teacher training programs at higher education institutions in the country.

The limits of interpretation should also be stated explicitly. First, the design of the study is cross-sectional, so the directions of the relationships were set theoretically rather than established empirically; based on these data, a reverse or reciprocal relationship - for example, between reflection and methodological

competence - cannot be excluded. Second, all constructs were measured by self-report, which may introduce common method bias and a subjective assessment of one's own methodological competence. Third, all the respondents study at one university, which restricts the transferability of the findings to other institutions and national contexts. These limitations do not call the identified relationships into question, but they do define the boundaries within which the results should be read.

Conclusion

This research work aimed at a comprehensive empirical analysis of the impact of practice-oriented training on the development of methodological competence among future special education teachers. The obtained research results clearly demonstrated that practice-oriented training is an important pedagogical approach in the professional training of future special education teachers.

The results of the study using the PLS-SEM method showed that practice-oriented training has a positive effect on professional practice experience. It turned out that professional practice experience, in turn, contributes to the development of reflective actions, and reflection plays a decisive role in the formation of methodological competence of future special education teachers. Thus, the research substantiated that practice-oriented training does not directly affect methodological competence, but rather does so through professional practice experience and reflection.

The explanatory power of the research model was assessed as satisfactory for empirical research in the field of pedagogy and social sciences. These results demonstrate the importance of strengthening practical training, systematizing the content of professional practice, and purposefully organizing reflective activities during the training of future special education teachers.

The practical significance of the research results is closely related to improving special education teacher training programs in higher education institutions. The systematic introduction of practically-oriented training elements into the educational process, creating conditions for students to make methodological decisions during professional practice, and organizing reflective work provide a unique opportunity to improve the professional training of future special education teachers.

This study also has certain limitations. Since the study is based on one-time data, it is recommended to use longitudinal research methods in future studies. In addition, it is important to expand the research model in the future and study the influence of other factors (for example, teacher professional support, learning environment, or digital technologies) on methodological competence. In addition, the fact that the sample was drawn from a single university and that

all the constructs were measured by self-report limits the generalisability of the findings; replicating the model in several universities and combining self-report with an external assessment of methodological competence (for example, expert evaluation of lesson plans and of observed lessons) would considerably strengthen the evidence.

In conclusion, the results of the study scientifically demonstrate the effectiveness of practice-oriented training in developing the methodological competence of future special education teachers and make a significant contribution to improving theory and practice in the field of special education teacher training.

REFERENCES

[1] Usman H., Yarmi G., Sarifah I., Hasanah U., Wardhani P., Sari W. et al. Explore the Needs of Competency Development Model for Prospective Elementary School Teachers Based on Knowledge Management System in Indonesia // *Revista de Gestão Social e Ambiental*. – 2024. – Vol. 18, No. 1. – Article e06206. <https://doi.org/10.24857/rgsa.v18n1-148>

[2] Azis E., Toyyibah T. Pre-Service English Teachers' Readiness to Develop Digitalized Authentic Materials with Islamic Values // *Premise Journal of English Education*. – 2023. – Vol. 12, No. 1. – P. 275. <https://doi.org/10.24127/pj.v12i1.6588>

[3] Setyaningsih D., Handasah R., Mamma A., Krobo A., Olua E., Iryouw V. Fostering Eco-literacy and Naturalistic Intelligence through Environmentally Based Education in Coastal Preschool // *JPUUD – Jurnal Pendidikan Usia Dini*. – 2024. – Vol. 18, No. 1. – P. 251-269. <https://doi.org/10.21009/jpud.181.18>

[4] Diana D., Tasu'ah N., Zulfikasari S., Martika T. ECE Teachers' Roles of Developing Numeracy Literacy in Special Needs Children // *JPUUD – Jurnal Pendidikan Usia Dini*. – 2023. – Vol. 17, No. 2. – P. 267-283. <https://doi.org/10.21009/jpud.172.06>

[5] Lisa A., Faridi A., Bharati D., Saleh M. A TPACK-in Practice Model for Enhancing EFL Students' Readiness to Teach with Ed-Tech Apps // *International Journal of Interactive Mobile Technologies (iJIM)*. – 2021. – Vol. 15, No. 17. – P. 156. <https://doi.org/10.3991/ijim.v15i17.23465>

[6] Kolb D.A. *Experiential Learning: Experience as the Source of Learning and Development*. - Englewood Cliffs, NJ: Prentice Hall, 1984. - 256 p.

[7] Amaliah A., Clorion F., Pasaribu G. Importance of Mastering Teacher Pedagogical Competence in Improving the Quality of Education // *PEBSAS*. – 2024. – Vol. 2, No. 1. – P. 29-37. <https://doi.org/10.61721/pebsas.v2i1.346>

[8] Bilyalov D., Movkebayeva Z., Duzelbayeva A., Khamitova D. Assessment by the Pedagogical Community of Inclusive Competencies of Special Teachers // *Pedagogy and Psychology*. – 2023. – Vol. 56, No. 3. <https://doi.org/10.51889/2960-1649.2023.15.3.009>

[9] Rochyadi E., Wulandari R. Project Work Model of Lectures in the Department of Special Needs Education // *Proceedings of Indoeduc*. – 2018. -

Access mode: <https://doi.org/10.2991/indoeduc-18.2018.60> [Date of access: 12.12.2025].

[10] Zhansulu S., Batima T., Temirov K., Shalgynbayeva K., Shamurat O., Mukhamedzhanov B. Supporting Children with Special Educational Needs as a Socio-Pedagogical Problem // Cypriot Journal of Educational Sciences. – 2022. – Vol. 17, No. 7. – P. 2262-2273. <https://doi.org/10.18844/cjes.v17i7.7692>

[11] Ranta S., Kangas J., Harju-Luukkainen H., Ukkonen-Mikkola T., Neitola M., Kinon J. et al. Teachers' Pedagogical Competence in Finnish Early Childhood Education: A Narrative Literature Review // Education Sciences. – 2023. – Vol. 13, No. 8. – Article 791. <https://doi.org/10.3390/educsci13080791>

[12] Hasbiyallah H., Munadi M., Nurulhaq D. Character Education Model for High School Students during the Pandemic in Terms of Pedagogic Competence and Teacher Personality // International Journal of Instruction. – 2023. – Vol. 16, No. 2. – P. 1077-1094. <https://doi.org/10.29333/iji.2023.16257a>

[13] Yusuf M., Sari E. Self-Evaluation of Special Education Teacher Competence in Inclusive School in Indonesia. – 2017. - Access mode: <https://doi.org/10.2991/ictte-17.2017.13> [Date of access: 12.12.2025].

[14] Abildina S. Pedagogical Conditions for the Formation of Special Competencies of Future Primary School Teachers on the Basis of the Project Method // Pedagogical Bulletin of Kazakhstan. – 2023. – No. 1. – P. 19-29. <https://doi.org/10.52301/1991-0614-2022-4-19-29>

[15] Burlakova I., Bogatyreva S., Pavlova O. Ways to Form a Teacher's Professionalism // SHS Web of Conferences. – 2020. – Vol. 87. – Article 00107. <https://doi.org/10.1051/shsconf/20208700107>

ПРАКТИКАЛЫҚ-БАҒЫТТАЛҒАН ДАЯРЛАУ ҮДЕРІСІНДЕ БОЛАШАҚ АРНАЙЫ БІЛІМ БЕРУ МҰҒАЛІМДЕРІНІҢ ӘДІСТЕМЕЛІК ҚҰЗЫРЕТТІЛІГІН ҚАЛЫПТАСТЫРУ

*Сүлеймен Ә.Қ.¹, Бекмуратова Г.Т.², Мамытбаева Ж.А.³, Қамытбек А.Н.⁴

*^{1,2}Абай атындағы Қазақ Ұлттық педагогикалық университеті
Алматы, Қазақстан

^{3,4}Ө.Жәнібеков атындағы Оңтүстік Қазақстан педагогикалық университеті
Шымкент, Қазақстан

Аңдатпа. Бұл зерттеу жұмысы практикалық-бағытталған оқытудың болашақ арнайы педагогтардың әдістемелік құзыреттілігін қалыптастырудағы ықпалын эмпирикалық тұрғыда талдауға негізделген. Бүгінгі таңдағы инклюзивті білім беру жағдайында болашақ арнайы педагогтардың кәсіби даярлығы мен әдістемелік құзыреттілігін дамыту өзекті мәселелердің бірі болып саналады. Сондықтан зерттеуде практикалық-бағытталған оқыту, кәсіби практика тәжірибесі және рефлексия арасындағы өзара байланыс қарастырылды. Зерттеудің деректері Абай атындағы Қазақ ұлттық педагогикалық университетінде білім алып жатқан 364 болашақ арнайы педагогтан сауалнама арқылы жинақталды. Алынған деректерді талдау үшін SmartPLS бағдарламасында Partial Least Squares Structural

Equation Modeling (PLS-SEM) әдісі пайдаланылды. Құрастырылған сауалнама төрт негізгі латентті конструктты қамтыды. Олар: практикалық-бағытталған оқыту, кәсіби практика тәжірибесі, рефлексия және өзіндік талдау, болашақ арнайы педагогтардың әдістемелік құзыреттілігі.

Зерттеудің нәтижелері практикалық-бағытталған оқытудың кәсіби практика тәжірибесіне айтарлықтай оң әсер ететінін көрсетті ($\beta=0.510$). Сондай-ақ, кәсіби практика тәжірибесі рефлексия деңгейіне оң ықпал етті ($\beta=0.490$). Ал рефлексия болашақ арнайы педагогтардың әдістемелік құзыреттілігін қалыптастыруда маңызды рөл атқаратыны белгілі болды ($\beta=0.491$). Құрылымдық модельдің түсіндіру қабілеті кәсіби практика тәжірибесінің 26,0%-ын, рефлексияның 24,0%-ын және әдістемелік құзыреттіліктің 24,1%-ын түсіндіретінін анықтады.

Зерттеу барысында алынған нәтижелер практикалық-бағытталған оқытудың болашақ арнайы педагогтардың әдістемелік құзыреттілігін тікелей емес, кәсіби практика тәжірибесі мен рефлексия арқылы тиімді түрде қалыптастыратынын көрсетеді. Зерттеудің нәтижелері арнайы педагогтарды даярлау үдерісінде практикалық оқыту мен рефлексиялық әрекеттерді жүйелі түрде ұйымдастырудың маңыздылығын көрсетіп, педагогикалық білім беру бағдарламаларын жетілдіруге ғылыми негіз болады.

Тірек сөздер: арнайы педагог, практикалық оқыту, әдістемелік құзырет, кәсіби практика, рефлексия және өзіндік талдау, инклюзивті білім беру, PLS-SEM, SmartPLS бағдарламасы

ФОРМИРОВАНИЕ МЕТОДИЧЕСКОЙ КОМПЕТЕНЦИИ БУДУЩИХ УЧИТЕЛЕЙ СПЕЦИАЛЬНОГО ОБРАЗОВАНИЯ В ПРОЦЕССЕ ПРАКТИКО-ОРИЕНТИРОВАННОЙ ПОДГОТОВКИ

*Сулеймен А.К.¹, Бекмуратова Г.Т.², Мамытбаева Ж.А.³, Камытбек А.Н.⁴

^{*1,2}Казахский Национальный педагогический университет им. Абая
Алматы, Казахстан

^{3,4}Южно-Казахстанский педагогический университет им. У.Жанибекова
Шымкент, Казакстан

Аннотация. Данная исследовательская работа основана на эмпирическом анализе влияния практико-ориентированной подготовки на формирование методической компетентности будущих учителей специального образования. В современном инклюзивном образовании развитие профессиональной подготовки и методической компетентности будущих учителей специального образования является одним из наиболее актуальных вопросов. Поэтому в исследовании изучалась взаимосвязь между практико-ориентированной подготовкой, опытом профессиональной практики и рефлексией. Данные для исследования были собраны путем опроса 364 будущих учителей специального образования, обучающихся в Казахском национальном педагогическом университете имени Абая.

Для анализа полученных данных использовался метод структурного моделирования методом частичных наименьших квадратов (PLS-SEM) в программе SmartPLS. Анкета включала четыре основных латентных конструкта: практико-ориентированная подготовка, опыт профессиональной практики, рефлексия и самоанализ, а также методическая компетентность будущих учителей специального образования.

Результаты исследования показали, что практико-ориентированная подготовка оказывает значительное положительное влияние на опыт профессиональной практики ($\beta=0,510$). Кроме того, опыт профессиональной практики оказал положительное влияние на уровень рефлексии ($\beta=0,490$). Выяснилось, что рефлексия играет важную роль в формировании методической компетентности будущих учителей специального образования ($\beta=0,491$). Было установлено, что объясняющая сила структурной модели объясняет 26,0% опыта профессиональной практики, 24,0% рефлексии и 24,1% методической компетентности.

Результаты исследования показывают, что практико-ориентированная подготовка эффективно формирует методическую компетентность будущих учителей специального образования не напрямую, а через опыт профессиональной практики и рефлексии. Результаты исследования демонстрируют важность систематической организации практической подготовки и рефлексивных мероприятий в процессе подготовки учителей специального образования и служат научной основой для совершенствования программ педагогического образования.

Ключевые слова: учитель специального образования, практическая подготовка, методическая компетентность, профессиональная практика, рефлексия и самоанализ, инклюзивное образование, PLS-SEM, программа SmartPLS

Received / Мақала түсті / Стаття поступила: 06.02.2026

Accepted: / Жариялауға қабылданды / Принята к публикации: 25.09.2026

Information about the authors:

Suleimen Assel – Kazakh National Pedagogical University named after Abai. 8D011901 – Doctoral student in Special pedagogy. (Almaty, Kazakhstan. e-mail: asel.s_02@bk.ru) ORCID: <https://orcid.org/0009-0004-0823-6322>

Bekmuratova Gulzhanar – Kazakh National Pedagogical University named after Abai, Department of General and Applied Psychology, Candidate of Psychological Sciences, Associate Professor. (Almaty, Kazakhstan. email: ranajlug@mail.ru). ORCID: <https://orcid.org/0000-0003-3575-9650> Scopus Author ID ID: 2s2.0-85136790855

Mamytbayeva Zhanat Doctor of Philosophy – (PhD), South Kazakhstan Pedagogical University named after O.Zhanibekov. (Shymkent, Kazakhstan.

email:zhanat02014@mail.ru). ORCID:0000-0003-3216-2066 Scopus Author ID 57766166100

Kamytbek Aruzhan –South Kazakhstan Pedagogical University named after Ө.Жәнібеков, department of «Pedagogy of preschool education and training», teacher . (Shymkent, Kazakhstan.email:arukamytbek.1@gmail.com)

Авторлар туралы мәлімет:

Сүлеймен Әсел Қалтайқызы – Абай атындағы Қазақ Ұлттық педагогикалық университеті, 8D01901-«Арнайы педагогика мамандарын даярлау» білім беру бағдарламасының докторанты. (Алматы қ., Қазақстан. e-mail: asel.s_02@bk.ru)

Бекмуратова Гүлжанар Тоғызбаевна – Абай атындағы Қазақ ұлттық педагогикалық университеті, Жалпы және қолданбалы психология кафедрасы, психология ғылымдарының кандидаты, қауымдастырылған профессор м.а. (Алматы қ., Қазақстан. e-mail: ranajlug@mail.ru)

Мамытбаева Жанат Абдиманаповна – философия докторы (PhD), аға оқытушы Өзбекәлі Жәнібеков атындағы Оңтүстік Қазақстан педагогикалық университеті. (Шымкент қ., Қазақстан. e-mail: zhanat02014@mail.ru)

Қамытбек Аружан Нұрланқызы – Ө.Жәнібеков атындағы Оңтүстік Қазақстан педагогикалық университеті, «Мектепке дейінгі тәрбиелеу және оқыту педагогика» кафедрасы, оқытушы. (Шымкент қ., Қазақстан. e-mail:arukamytbek.1@gmail.com)

Информация об авторах:

Сүлеймен Асель Калтаевна –Казахский Национальный педагогический университет им. Абая, Докторант образовательной программы 8D01901 — «Подготовка специалистов по специальной педагогике». (Алматы, Казахстан. e-mail: asel.s_02@bk.ru)

<https://orcid.org/0009-0004-0823-6322>

Бекмуратова Гульжанар Тоғызбаевна – Казахский Национальный педагогический университет им. Абая, Кафедра общей и прикладной психологии, кандидат психологических наук, ассоциированный профессор. (Алматы, Казахстан. e-mail: ranajlug@mail.ru) ORCID: <https://orcid.org/0000-0003-3575-9650> Scopus Author ID ID: 2s2.0-85136790855

Мамытбаева Жанат Абдиманаповна – PhD., старший преподаватель Южно-Казахстанского педагогического университета имени У.Жанибекова, (г. Шымкент, Казакстан, . e-mail:zhanat02014@mail.ru.) ORCID: 0000-0003-3216-2066 Scopus Author ID 57766166100

Қамытбек Аружан Нұрлановна –Южно-Казахстанский педагогический университет им. Ө.Жәнібеков, кафедра «Педагогика дошкольного воспитания и обучения», преподаватель. (г. Шымкент, Казакстан, . e-mail: arukamytbek.1@gmail.com)