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Abay Duisenbayev
Al-Farabi Kazakh National University, Kazakhstan

Zulfiya Shavaliyeva
A. Margulan Pavlodar Pedagogical University Pavlodar, Kazakhstan

Inkar Khassanova
West Kazakhstan University named after M. Utemisov, Kazakhstan

Shynar Turebayeva
L.N. Gumilyov Eurasian National University, Kazakhstan

Salima Seitenova
West Kazakhstan University named after M. Utemisov, Kazakhstan

Kenzhekhan Medeubayeva
Kazakh National Women's Pedagogical University of Kazakhstan, Kazakhstan

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The Study of Effective Methods and Strategies for the Professional Development of Educators: Mentorship, Collaboration, and Self-Organization Skills

Abay Duisenbayev, Zulfiya Shavaliyeva, Inkar Khassanova, Shynar Turebayeva, Salima Seitenova, Kenzhekhan Medeubayeva

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Abstract

It is essential for prospective teachers to be skilled in planning learning-teaching processes correctly and using teaching strategies and methods effectively. In this context, it is important for them to have the skills of using learning strategies, mentoring and self-regulation and to work collaboratively. The purpose of this study is to examine the relationships between mentoring, collaborative work and self-regulation skills of prospective teachers and their ability to use teaching strategies and methods. The study, which was designed with the correlational survey model, was conducted in 5 different universities in Kazakhstan in the academic year 2022-2023. The research sample consisted of 253 prospective teachers. According to the findings of the study, prospective teachers' mentoring, collaborative work, self-regulation skills, and use of teaching strategies and methods were found to be at a moderate level. According to another finding of the study, prospective teachers' mentoring, collaborative working and self-regulation skills and their ability to use instructional strategies and methods increased significantly as the grade level increased. Finally, according to the regression analysis, mentoring, collaborative work and self-regulation skills of prospective teachers significantly predicted their ability to use instructional strategies and methods.

Introduction

The planning, organization and execution of educational activities require that basic principles are taken into account and activities are carried out in accordance with them. Teachers are primarily responsible for the realization of these activities (Brown, 2003; Jagtap, 2016; Swann, 2011). Teachers, who are the executors of education and training activities, need to have sufficient knowledge and skills in teaching strategies, methods, techniques and tactics, which are one of the factors affecting learning. However, it is seen that teachers do not have the competence to know and use new and alternative teaching strategies, methods and techniques (Amolloh, Wanjiru & Lilian, 2018; Cao et al., 2018; Turebayeva et al., 2020). In addition, teachers give priority to teaching

methods, techniques, strategies and tactics in which they themselves are at the center, direct the flow of the lesson and the students, and make the evaluation themselves, and especially avoid methods, techniques and tactics in which students are active (Absatova, Seitenova & Nurpeissova, 2016; Cole, 1981; Junst, Licklider & Wiersema, 2003; Kurebay et al., 2023; Marbach-Ad, Seal & Sokolove, 2001).

It is known that one of the issues that prospective teachers need professional help with is the effective use of teaching strategies, methods and techniques (Lemlech, 1995). The experiences of prospective teachers during their teaching practice and in the first year of their profession affect their future development of teaching skills (Woolfolk-Hoy & Burke-Spero, 2005). In this context, it is essential for prospective teachers to be skilled in planning learning experiences correctly and using teaching strategies and methods effectively. In this context, it is important for them to use learning strategies, to have mentoring and self-regulation skills and to work in collaboration (Butler, 2003; Butler et al., 2004; Hagger & McIntyre, 2006; Tricarico & Yendol-Hoppey, 2012). Vrieling, Bastiaens, and Stijnen (2012) examined the relationship between self-regulated learning opportunities, learning motivation and metacognitive learning strategy use of prospective primary school teachers. According to the findings of this study, prospective teachers' use of metacognitive skills in mentoring support influenced their increased self-regulated skills and effective use of learning strategies.

Teacher candidates studying within the scope of teacher training programs gain teaching experiences that require expertise over time. Through this process, the level of responsibility for teaching increases. In addition, prospective teachers' cognitive and social skills such as working together affect their teaching expertise and skills (Schechter & Tschannen-Moran, 2006; Tschannen-Moran et al., 1998; Turabay et al., 2023). Rahmat and Osman (2012) stated that over time, the concept of learning has shifted from teacher-centered approaches to student-centered approaches such as problem-solving, collaborative, mentoring, self-directed and self-regulated learning.

Mentoring Skills of Student Teachers

Although mentoring practices, which are defined as the support and guidance of an experienced, senior and knowledgeable person who is an expert in his/her field to a person who is less experienced in his/her field and who needs support, in the process of rapid adaptation and completing his/her professional and personal development, have a long history, it is a new type of service in our country (Ayalon, 2023; Squires, 2019). Mentoring is employed by organizations to provide support to individuals who are new to their profession in many professional fields. Mentoring is considered to be an important practice for newcomers to fulfill professional requirements on the one hand and to cope with the stress caused by the new environment on the other (Gagen & Bowie, 2005).

In developed countries, it is seen that policies for training qualified teachers and administrators are supported by mentoring practices and especially new teachers are developed through these practices (Fransson, 2010; Hobson, Ashby, Malderez, & Tomlinson, 2009; Hunt, 2011; Kutsyuruba, 2012; Shanks et al., 2022; Soininen & Merisuo-Storm, 2014).

Löfström and Eisenschmidt (2009) found that mentees perceived that they received support from their mentors in the areas of personal development and professional development. Bickmore and Bickmore (2010) found that mentors reduced mentees' stress, provided them with emotional support, and supported them in making the teaching-learning process effective. The diversity of the support offered to mentees allows the benefits of mentoring to be seen in different areas. The areas of use of mentoring practices in teacher education include adapting to the environment, solving problems, classroom management, coping with stress, supporting personal development and lifelong learning, building trust, applying collaborative approaches, developing appropriate values, attitudes and behaviors and adapting to new situations, increasing self-confidence, reducing feelings of loneliness, self-evaluation, etc. (Ellis, Alonzo & Nguyen, 2020; Hobson et al., 2009; Nielson, Carlson & Lankau, 2001). Therefore, mentoring is one of the effective ways for teachers or prospective teachers to unlock their potential and develop their professional skills. In this way, prospective teachers deal with the issue with a consciousness and awareness by receiving professional support instead of solving the problems in their own natural channel.

Prospective Teachers' Collaboration Skills

The concept of "collaboration" has become a skill that almost all field professionals need to acquire with the development of industrialization in the 21st century. The process of working collaboratively involves the sharing of ideas and time by more than one field expert. As a result, it is possible to reach more comprehensive solutions, make decisions together and reduce possible error rates. For this reason, it can be said that collaborative working examples are increasingly used in service sectors such as human resources, health, and education (Brunetto & Farr-Wharton, 2007; Huber, 1991). When the literature is examined, the number of studies on the collaboration of prospective teachers in education is quite limited. Achieving the targeted goals in schools is related to educational processes such as healthy communication, planning, organizing, division of labor, directing employees, cooperation, team belief, reporting and evaluation (Lunenburg & Ornstein, 2021). It is possible to come across studies showing that teachers who participate in the learning-teaching process need to share a common purpose, common philosophy and language in order to sustain the process (Carter, Prater, Jackson, & Marchant, 2009). However, Brownell, Adams, Sindelar, and Waldron (2006) found that a group of teachers who received in-service training on collaboration effectively utilized collaborative approaches in problem solving, while a group of teachers utilized these skills to a more limited extent.

In a study conducted by Zagona, Kurth, and Mac Farland (2017), it was concluded that teachers who took courses on inclusive education and collaboration in their undergraduate program felt more competent in collaborative work when they entered the profession. In different studies in the literature, it has been concluded that collaborative teacher efficacy is one of the important factors in ensuring academic success in schools (Goddard, Hoy, & Woolfolk Hoy, 2000; Tschannen-Moran & Barr, 2004). Collective teacher efficacy is defined as a teacher's belief that they can positively affect students as a result of activities, practices, programs, etc. that they will carry out together with their colleagues in the same school (Adams & Forsyth, 2006; Alinder, 1994; Goddard, 2001). Teachers with a high perception of collaborative teacher efficacy do not look for the problem in the student when a student fails but take responsibility (Schechter & Tschannen-Moran, 2006). Considering what has been

discussed so far, it is seen that teachers' collaboration competence is very important for the effectiveness of schools in education and training and for supporting students' social and academic success.

Prospective Teachers' Self-regulation Skills

In the literature, it is seen that the most important effect of the teacher in classroom management is to create a planned, positive and well-organized classroom atmosphere that supports children (Banks, 2014; Bailey & Jacob, 2014). In this context, it is expected that teachers with developed self-regulation enrich their curricula with self-regulation strategies, resulting in effective and motivating warm interactions for teaching in educational environments and classes with positive socio-emotional development and positive classroom climate (Blair & Diamond, 2008; Sáiz Manzanares, Carbonero Martín & Román Sánchez, 2014). Self-regulation processes are purposeful processes that include many concepts. Teachers with high self-regulation skills are expected to exhibit attitudes that support children (encouraging cooperation and collective inquiry, creating learning environments where children can interact in various social contexts) with their classroom management practices (Bembenutty, White & Vélez, 2015; Perels et al., 2009). Especially in teaching-learning environments, teachers organize student-centered activities and employ various student-centered approaches, methods and techniques to facilitate students' learning. Some studies in educational sciences have shown that self-regulated learning and strategies in which individuals control their own learning processes are effective in their academic achievement (Dent & Koenka, 2015; Wolters & Hussain, 2015; Zee & de Bree, 2016). In recent years, it has been observed that self-regulated learning has been mostly studied in student samples. However, the number of studies on prospective teachers' self-regulated learning skills has remained quite limited. However, teachers should organize the teaching-learning environment in a way to improve students' self-regulation skills. In order to do this, teachers should have developed their self-regulation skills during their candidacy process. Therefore, it is important to determine the self-regulation levels of teachers in their undergraduate education and to provide information about self-regulation skills. If teachers have self-regulation skills, it will be easier for them to provide this skill to their students.

Each teaching strategy, method and technique has its own effectiveness and limitations. Prospective teachers should be able to choose the appropriate method according to the teaching purpose and make changes when necessary in line with the feedback from the students. In this context, a learning-oriented classroom environment should be structured (Aslan, 2016; Omodan & Addam, 2022; Townsend & Macbeath, 2011). Many studies have shown that pedagogical and content knowledge are not sufficient for effective teaching and learning (Knoblauch & Woolfolk-Hoy, 2008; Ryan & Cooper, 2012). According to Dembo (2001), it is not enough for teachers to learn how to teach; teachers should learn to learn how to improve their classroom practices. In this context, it is thought that it is important for prospective teachers to work in collaboration, mentoring, coaching, and self-regulation skills to make the learning-teaching process effective in the future. While teacher training institutions strive to increase prospective teachers' knowledge of subject area specializations, they also work to improve their teaching skills. Developing mentoring, collaboration and self-regulation skills, which are among the factors affecting the quality of teaching, are two of the main goals of teacher training institutions. Therefore, it is important to determine to what extent prospective teachers have mentoring, self-regulation and collaborative skills in terms of using

learning strategies and methods effectively. In addition, it is thought that the results of the study will give ideas about the issues in which prospective teachers perceive themselves inadequate and how to overcome these inadequacies by knowing the level of prospective teachers' strategy use in teaching, mentoring, collaboration and self-regulation skills:

- What is the level of prospective teachers' skills of mentoring, collaborative work, self-regulation and using teaching strategies and methods?
- Do prospective teachers' mentoring, collaboration, self-regulation and using my teaching strategies and methods differ according to their grade level?
- At what level do prospective teachers' mentoring, collaboration and self-regulation skills predict their ability to use instructional strategies and methods?

Method

The research model is a relational survey model among survey models. Relational survey models are research models that aim to determine the relationships between variables or to determine the existence and/or degree of co-variation between two or more variables. Although the correlational survey model does not give a real cause-effect relationship, it enables the prediction of the other variable if the situation in one variable is known (Mitchell, 1985). In this study, the relationships between prospective teachers' mentoring, collaborative working and self-regulation skills and their ability to use teaching strategies and methods were examined. The dependent variable of the study is the ability to use teaching strategies and methods. The independent variables are mentoring, collaborative working, self-regulation skills and grade level of prospective teachers.

The population of the study consists of prospective teachers studying at the Faculties of Education of universities in Kazakhstan in the academic year 2022-2023. While determining the study group of the research, students at all grade levels were included in the study in order to determine the changes of prospective teachers more clearly during their education and training. The reason for the inclusion of prospective teachers who take basic courses in the first grade and have not yet gained experience and knowledge about the teaching profession and prospective teachers who are expected to have experience, knowledge and skills for the profession as a result of the practice-oriented field courses and internships they participate in during their undergraduate education in the upper grades is the idea that these are the groups where the clearest change-difference will be seen in terms of competencies for the profession. For this reason, the study group of the research consists of 253 prospective teachers studying at the Faculty of Education of different state universities (West Kazakhstan University named after M. Utemisov, Al-Farabi Kazakh National University Al-Farabi, A. Margulan Pavlodar Pedagogical University, Pavlodar, L.N. Gumilyov Eurasian National University, Kazakh National Women's Pedagogical University of Kazakhstan) in Kazakhstan in the 2022-2023 academic year. Of the prospective teachers in the study group, 98 (38.73%) were male and 155 (61.37%) were female. Again, 63 (24.90%) of the participant prospective teachers are in the first grade, 61 (24.11%) in the second grade, 74 (29.25%) in the third grade and 55 (21.74%) in the fourth grade. It was understood that the prospective teachers in the sample showed a balanced distribution in terms of gender and grade level.

Data Collection Tools

Teachers' Collective-Collaborative Working Skills Scale

The "Collective Efficacy Scale (CES)" developed by Goddard, Hoy and Woolfolk-Hoy (2000) and adapted into Kazakh by the researchers was used to determine teachers' level of collaborative work. The Collective Efficacy Scale (CES) was developed by Goddard, Hoy and Woolfolk-Hoy (2000). It is a six-point Likert-type scale consisting of 21 items. Ten of the items (3, 4, 8, 10, 11, 12, 12, 16, 18, 19, 20) were reverse scored. All items in the scale were grouped on a single factor. The reliability coefficient of the Kazakh form of the scale was calculated as .83.

Mentoring Roles Scale for Prospective Teachers

In this study, the 'Prospective Teacher Mentoring Roles Scale' developed by Cohen (1993) was used to measure prospective teachers' perceptions of mentoring roles. Exploratory Factor Analyses conducted on the Kazakh form of the scale revealed a total of 55 questions and a five-dimensional structure. The factor structures were partially similar to Cohen's mentoring roles. The sub-dimensions of the scales were renamed based on expert opinions and literature. The necessary validity and reliability studies were completed and the Cronbach's Alpha internal consistency coefficient was calculated between .91 and .95 for the sub-dimensions. The scale adapted by the researchers to Kazakhstan was prepared to be answered in a 5-point Likert style. The rating scores of the scale were formed as Never (1), Rarely (2) points, Sometimes (3), Most of the time (4) and Always (5). The sub-dimensions of the 'Mentoring of Prospective Teacher Scale' are as follows: 'Support and Encouragement', 'Intellectualism and Vision Development', 'Confrontation and Providing Examples', 'Willingness and Openness' and 'Role Modeling'.

Self-Regulation Skills Scale

The "Self-Regulation Scale" used in the study was developed by Brown, Miller, and Lawendowski (1999) to measure behavioral self-regulation and adapted into Kazakh by the researchers. Consisting of 51 items, the five-point Likert scale is scored between "strongly agree" and "strongly disagree". In the factor analysis, Kaiser-Meyer-Olkin (KMO) value was .91 and Cronbach α coefficient calculated for the overall scale was .87. Scores that can be obtained from the scale vary between 255-51. 198 and above are accepted as indicators of high self-regulation capacity, 197-160 as indicators of moderate self-regulation capacity, and 159 and below as indicators of low self-regulation capacity.

Using Teaching Strategies and Methods Scale

The scale of prospective teachers' ability to use teaching strategies and methods was developed by the researchers. First of all, a literature review on the subject was conducted to create an item pool. In the light of the data obtained as a result of the review, a scale pool of 20 items was created. At this stage, the opinions of 5 instructors with doctorate degrees in educational sciences and measurement and evaluation were consulted. As a result of the

opinions of the expert lecturers, the number of questions in the trial scale form was reduced to 16. The 16-item scale was developed using five-point Likert-type response options. The answer options were "Strongly Agree", "Agree", "Undecided", "Disagree", "Strongly Disagree". The developed scale was applied to 220 prospective teachers studying in faculties of education of different universities in Kazakhstan for trial purposes. According to the results of this application, factor analysis was performed and the items with construct validity were included in the final scale. In the factor analysis, special care was taken to ensure that the KMO (Kaiser-Meyer-Olkin) values were high. As a result of the analysis, the KMO value of this scale was .955 ($p<0.01$) and the Barlett test value was 3601.98 ($p<0.01$). These values show that the scale is suitable for prospective teachers and factor analysis. The Scree Plot graph obtained as a result of exploratory difference analysis shows that the scale has a unidimensional structure (See Figure 1). This unidimensional structure explains 66.97% of the 'Ability to Use Teaching Strategies and Methods'.

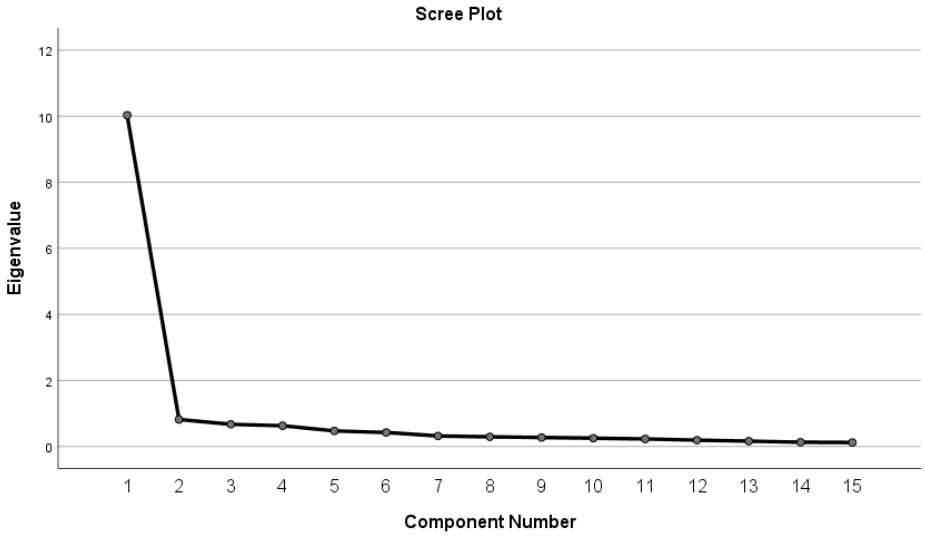

Figure 1. The Scree Plot graph

The factor loadings of the items in the 'Ability to Use Teaching Strategies and Methods' scale were between 0.65 and 0.88. (See Table 1) These coefficients and values indicate that the construct validity of the scale is high. The internal consistency coefficient of the scale was tested with Cronbach's Alpha technique. This coefficient was calculated as .94. This value shows that the 'Ability to Use Teaching Strategies and Methods Scale' has a high level of reliability.

Table 1. Factor Loadings of the Skill of Using Teaching Strategies and Methods Scale

Items	Factor Load
Item 7	.878
Item 4	.869
Item 3	.866

Items	Factor Load
Item 6	.861
Item 5	.860
Item 2	.857
Item 9	.842
Item 8	.837
Item 1	.830
Item 13	.823
Item 14	.821
Item 15	.791
Item 12	.759
Item 10	.684
Item 11	.651

Data Analysis

In order to determine the statistical methods to be used in the analysis of the data obtained from the two scales in this study, in which the relationship between prospective teachers' mentoring, working in collaboration, self-regulation skills and their ability to use teaching strategies and methods was examined, the normality distributions of the scales and sub-dimensions were first examined. Determining the skewness and kurtosis coefficients between ±1.5 values shows that the scales and sub-dimensions do not deviate excessively from the normal distribution (George & Mallery, 2019). In line with the results obtained, statistical methods based on the assumption of normal distribution were used to analyze the data. The arithmetic mean and standard deviation scores of the scores obtained by the prospective teachers in the study group from the research scales were calculated.

One-factor analysis of variance for unrelated samples was used to determine the changes in prospective teachers' mentoring, working in collaboration, self-regulation skills and using teaching strategies and methods skills according to the grade level variable. When a significant difference was found between the groups as a result of one-way analysis of variance, post-hoc multiple comparison techniques were used to determine the source of the differences (between which groups). In the last sub-problem, regression analysis technique was used to determine the relationships between mentoring, working in collaboration, self-regulation skills and the ability to use teaching strategies and methods. Statistical analysis of the data was done in SPSS program and the minimum significance level was accepted as $p<0.05$.

Findings

Table 2 shows the minimum, maximum, arithmetic mean and standard deviation values of the average scores obtained by the prospective teachers from the 5 sub-dimensions and the total of the mentoring scale.

Table 2. Descriptive Analysis of Prospective Teachers' Scores on the Mentoring Scale

	N	Minimum	Maximum	Mean	Std. Deviation
Support and Encouragement	253	1.00	5.00	3.53	0.87
Intellectuality and Vision Development	253	1.00	5.00	3.36	0.96
Confrontation and Giving Examples	253	1.00	5.00	3.24	0.92
Willingness and Openness	253	1.00	5.00	3.42	0.90
Role Modeling	253	1.00	5.00	3.34	0.84
Mentoring Overall Average	253	1.00	4.80	3.38	0.68

According to the descriptive statistics in Table 2, arithmetic mean values of 3.63, 3.36, 3.24, 3.24, 3.42, 3.42, 3.34 and 3.38 were calculated for the 'Support and Encouragement', 'Intellectualism and Vision Development', 'Confrontation and Giving Examples', 'Willingness and Openness', 'Role Modeling' and 'Role Modeling' subscales of the mentoring scale, respectively. According to these values, the mentoring skills of the participant prospective teachers in the 'Support and Encouragement' and 'Willingness and Openness' subscales were found to be at a high level. However, it was understood that they had medium level skills in 'Intellectuality and Vision Development', 'Confrontation and Giving Examples', 'Role Modeling' and the whole mentoring scale.

Table 3 shows the minimum, maximum, arithmetic mean, and standard deviation values of the average scores obtained by the prospective teachers from the collective work-collaboration skills scale.

Table 3. Descriptive Analysis of Prospective Teachers' Scores on the Collective Work-collaboration Skills Scale

	N	Minimum	Maximum	Mean	Std. Deviation
Collective-Collaboration Skills	253	1.00	5.00	3.35	0.93

According to the data in Table 3, the average of the scores obtained by the prospective teachers from the collective-collaboration skills scale was calculated as 3.35. This finding indicates that the participant prospective teachers' collective-collaboration skills are at a medium level.

Table 4 shows the minimum, maximum, arithmetic mean, and standard deviation values of the mean scores obtained by the prospective teachers from the self-regulation skills scale.

Table 4. Descriptive Analysis of Prospective Teachers' Scores from the Self-regulation Skills Scale

	N	Minimum	Maximum	Mean	Std. Deviation
Self-Regulation Skills	253	52.00	260.00	187.01	46.09

According to the data in Table 4, the average of the scores obtained by the prospective teachers from the self-regulation skills scale was calculated as 260.00. According to the range criteria of the scale, this finding shows that the self-regulation skills of the participant prospective teachers are at a moderate level.

Table 5 shows the minimum, maximum, arithmetic mean and standard deviation values of the average scores obtained from the scale of prospective teachers' ability to use teaching strategies and methods.

Table 5. Descriptive analysis of the scores obtained from the scale of prospective teachers' ability to use teaching strategies and methods

	N	Minimum	Maximum	Mean	Std. Deviation
Ability to Use Teaching Strategies and Methods	253	1.00	4.50	3.38	0.66

According to the data in Table 5, the average of the scores obtained by the prospective teachers from the scale of prospective teachers' ability to use teaching strategies and methods was calculated as 3.38. According to the range criteria of the scale, this finding shows that the participant prospective teachers' ability to use teaching strategies and methods is at a moderate level.

Table 6 shows the results of the F test of the scores obtained by the prospective teachers from the 5 sub-dimensions and the total of the mentoring scale according to the grade level.

Table 6. Analysis of Prospective Teachers' Mentoring Skills according to Grade Level

	Class Level	N	Mean	Std. Deviation	F	p
Support and Encouragement	1	63	3.25	1.02	5.32	0.00
	2	61	3.44	0.87		
	3	74	3.61	0.76		
	4	55	3.85	0.73		
	Total	253	3.53	0.87		
Intellectuality and Vision Development	1	63	3.11	1.12	4.76	0.00
	2	61	3.20	1.06		
	3	74	3.47	0.81		
	4	55	3.69	0.66		
	Total	253	3.36	0.96		
Confrontation and Giving Examples	1	63	2.83	1.04	6.94	0.00
	2	61	3.28	0.95		

	Class Level	N	Mean	Std. Deviation	F	p
	3	74	3.35	0.87		
	4	55	3.53	0.60		
	Total	253	3.24	0.92		
Willingness and Openness	1	63	3.00	0.97	8.70	0.00
	2	61	3.38	0.88		
	3	74	3.57	0.83		
	4	55	3.76	0.74		
	Total	253	3.42	0.90		
Role Modeling	1	63	3.11	1.00	4.49	0.00
	2	61	3.20	0.85		
	3	74	3.50	0.71		
	4	55	3.56	0.71		
	Total	253	3.34	0.84		
Mentoring Overall Average	1	63	3.06	0.80	10.42	0.00
	2	61	3.30	0.72		
	3	74	3.50	0.55		
	4	55	3.68	0.42		
	Total	253	3.38	0.68		

According to the F test analysis in Table 6, F values of 5.32 in the 'Support and Encouragement' subscale; 4.66 in the 'Intellectualism and Vision Development' subscale; 6.94 in the 'Confrontation and Giving Examples' subscale; 8.70 in the 'Willingness and Openness' subscale; 4.49 in the 'Role Modeling' subscale and 10.42 in the whole scale were calculated. According to these values, mentoring skills of participant prospective teachers show significant differences according to grade level ($p<0.05$). According to the Sheffe's test analysis, prospective teachers studying in the 4th and 3rd grades have higher mentoring skills compared to those in the 1st and 2nd grades.

Table 7 shows the analysis of prospective teachers' scores obtained from the scale of working in collective-collaboration according to their grade level using the F test.

Table 7. Analysis of Prospective Teachers' Collective Work-collaboration Skills according to Grade Level

	Class Level	N	Mean	Std. Deviation	F	p
Collective-Collaboration Skills	1	63	2.92	1.02	9.31	0.00
	2	61	3.33	0.89		
	3	74	3.41	0.89		
	4	55	3.78	0.71		
	Total	253	3.35	0.93		

According to the analyses in Table 7, an F value of 9.31 was calculated between the mean scores of the prospective teachers in terms of their grade levels in the scale of collective-collaborative work. According to this value, the

participant prospective teachers' collective-collaborative working skills show significant differences according to the grade level ($p<0.05$). According to the Sheffe's test analysis, prospective teachers studying in the 4th and 3rd grades have higher collaborative working skills compared to the candidates studying in the 1st and 2nd grades.

Table 8 shows the analysis of prospective teachers' scores obtained from the self-regulation skills scale according to the grade level using the F test.

Table 8. The Analysis of Prospective Teachers' Scores obtained from the Self-regulation Skills Scale according to the Grade Level using the F Test

	Class Level	N	Mean	Std. Deviation	F	p
Self-Regulation Skills	1	63	172.15	53.47	7.43	0.00
	2	61	178.25	46.34		
	3	74	191.35	38.59		
	4	55	207.91	37.62		
	Total	253	187.01	46.09		

According to the analyses in Table 8, an F value of 7.43 was calculated between the mean scores of the prospective teachers' self-regulation skills scale in terms of their grade levels. According to this value, the self-regulation skills of the participant prospective teachers show significant differences according to the grade level ($p<0.05$). According to Sheffe's test analysis, prospective teachers studying in the 4th and 3rd grades have higher self-regulation skills compared to the candidates studying in the 1st and 2nd grades.

Table 9 shows the analysis of the scores obtained from the scale of prospective teachers' competence in using teaching strategies and methods according to the grade level by F test.

Table 9. Analysis of Prospective Teachers' Ability to use Teaching Strategies and Methods according to Grade Level

	Class Level	N	Mean	Std. Deviation	F	P
Ability to Use Teaching Strategies and Methods	1	63	3.08	0.72	11.26	0.00
	2	61	3.23	0.66		
	3	74	3.56	0.55		
	4	55	3.64	0.55		
	Total	253	3.38	0.66		

According to the analyses in Table 9, an F value of 11.26 was calculated between the mean scores of prospective teachers in terms of their grade levels on the scale of competence in using teaching strategies and methods. According to this value, the competence of the participant prospective teachers in using teaching strategies and methods shows significant differences according to the grade level ($p<0.05$). According to Sheffe's test analysis, prospective teachers studying in 4th and 3rd grades have higher competence in using teaching strategies and methods compared to prospective teachers studying in 1st and 2nd grades.

Table 10 presents the findings regarding the predictive power of prospective teachers' collaborative working, mentoring and self-regulation skills on their ability to use teaching strategies and methods.

Table 10. Regression Analyses on the Predictive Power of Prospective Teachers' Collaborative Working, Mentoring and Self-regulation Skills on the Ability to use Teaching Strategies and Methods

	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
	B	Beta		
(Constant)	1.85		8.17	0.000
Mentoring Overall Average	0.25	0.26	3.88	0.000
Collective-Collaboration Competence	0.09	0.13	1.95	0.053
Self-Regulation Skills	0.02	0.13	2.35	0.019
$R= 0.40$; $R^2= 0.16$; $F=15.93$; $p<0.05$				

According to the results of the regression analysis, the regression independent variables of collaboration, mentoring and self-regulation skills were used as predictors of the dependent variable (using instructional strategies and methods). All independent variables in the regression analysis significantly predicted the ability to use teaching strategies and methods. Three of the independent variables presented in the Table explain 16% of the change in the ability to use teaching strategies and methods ($p<0.05$).

Discussion and Conclusion

In this study, the effects of collaborative work, mentoring, coaching, and self-regulation skills on prospective teachers' effective use of the learning-teaching process were examined with a relational approach. First of all, descriptive findings were obtained regarding Kazakhstani prospective teachers' use of the learning-teaching process, working collaboratively, mentoring, coaching, and self-regulation skills. According to the findings of the study, the participant prospective teachers' collaborative work, mentoring, coaching, and self-regulation skills in using the learning-teaching process effectively were found to be at a moderate level. As a matter of fact, the findings of this study are similar to the findings of Brown (1998) and Kanfer (1970) on self-regulation variable; Zambo and Zambo (2008) and Cybulski et al. (2005) on collective-collaborative working skills variable; Hobson (2001) and Margolis (2007) on mentoring skills. Prospective teachers have partial problems in using effective learning strategies and methods and in realizing cooperation, mentoring and self-regulation skills in this regard.

In another finding of the study, Kazakhstani teacher candidates' skills in using the learning-teaching process, working in collaboration, mentoring, coaching, and self-regulation were compared according to grade level. According to the analysis, teacher candidates studying in upper grades have higher skills in using the learning-teaching process effectively, working in collaboration, mentoring, coaching and self-regulation compared to candidates in lower grades. Studies show that school experience also contributes to the development of teacher candidates' self-efficacy (Plourde, 2002) and reflective thinking skills (Collier, 1999; Freese, 1999; McDuffie, 2004) and to a positive change in their perspective on teaching (Tabacbnick & Zecihner, 1984). As teacher

candidates' grade levels increase, their self-efficacy perceptions also increase, and when they reach their senior year, their teacher self-efficacy perceptions become more positive (Margolis, 2007). In this respect, we can say that the increase in the time spent by teacher candidates in their faculties and their knowledge of the functioning of the school by participating in all kinds of activities increases their teaching competencies, mentoring, working in cooperation and self-regulation skills. On the other hand, according to Schunk and Zimmerman (2006), people's cognitive and psychomotor competencies develop in multiple ways during the development of domain-specific competencies. In this respect, the development of teacher candidates' awareness and competencies in the basic skills related to teaching in the upper grades enabled them to have higher self-efficacy, mentoring and self-regulation skills.

In the last finding of the study, the effects of teacher candidates' ability to work collaboratively, mentoring, coaching, and self-regulation skills on their ability to use strategies and methods were examined. According to the regression analysis findings, the independent variables of the equation (mentoring, coaching, and self-regulation skills) significantly affect the teacher candidates' ability to use teaching strategies and methods. According to research, teacher effectiveness and teaching skills are higher in schools where collective-collaboration is high (Goddard and Goddard, 2001; Ross and Gray 2006; Sammons et al., 2011). Similarly, high quality mentoring relationships and increased skills of teacher candidates ensure that their self-efficacy beliefs regarding teaching processes are high (Chopin, Danish, Seers & Hook, 2013). With the mentoring service provided to teacher candidates in schools, it is aimed for teacher candidates to gain experience before starting the profession, to improve their proficiency in working together and to benefit from the experiences of experienced teachers. In this context, if the mentoring process is continued successfully, the teaching skills of teacher candidates will increase and it will also contribute to the teacher candidates' perception of themselves as competent in the teaching profession. At the same time, it has been observed that teacher candidates have improved their teaching and content knowledge through mentoring practices and the development of these skills (Chalies et al., 2004). It has been observed that especially the teacher candidates' competencies in lesson planning, relieving tension and excitement, giving context to the taught subject and using various correction techniques have increased. According to Kiraz (2002), in order to contribute to the development of teacher candidates, it is important to adapt the contemporary guidance approach, which is accepted to include school mentors with better skills in ensuring the development of candidates. Similarly, collaborative mentoring contributes to school mentors' reflection on teaching processes (Graham, 2006) and the development of their technical skills (Fletcher, 1998).
Regression analysis has shown that self-regulation skills are also important in teacher candidates' ability to use teaching strategies and methods. In Bembenutty's (2007) study with prospective teachers, it was observed that prospective teachers with high self-regulation skills had a high tendency to take responsibility in the teaching process, used metacognitive strategies, and controlled the time and environment necessary to achieve their goals. If a teacher improves their own self-regulation skills, they will reflect this in their teaching and learning. While successful experiences of teacher candidates increase their self-efficacy perceptions towards the teaching process, unsuccessful experiences negatively affect their self-efficacy perceptions (Tschannen-Moran & Woolfolk Hoy, 2007; Tschannen-Moran & Johnson, 2011). The peer support that teachers receive from their colleagues and the support of the school administration positively affect teachers' teaching skills (Tschannen-Moran and Woolfolk-Hoy, 2001).

As a result, it seems that their mentoring, working in collaboration and self-regulation skills are important factors in Kazakhstani teacher candidates' effective use of teaching strategies and methods. In this context, seminars and in-service training can be organized to improve the mentoring, collaborative working and self-regulation skills of teacher candidates. The findings of this study may shed light on future studies that will use similar samples. In future studies, experimental studies can be conducted to investigate the effects of teacher candidates' mentoring, self-regulation and collaborative working skills on their teaching competence and skills.

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Author Information

Abay Duisenbayev
https://orcid.org/0000-0001-9144-2020
Educational Management Department
Al-Farabi Kazakh National University
Al-Farabi Street 71, Almaty
Kazakhstan

Zulfiya Shavaliyeva
https://orcid.org/0000-0001-7869-2324
A. Margulan Pavlodar Pedagogical University
Pavlodar
Kazakhstan

Inkar Khassanova
https://orcid.org/0000-0002-1317-9885
West Kazakhstan University named after M. Utemisov Uralsk, N. Nazarbaeva 162
Kazakhstan

Shynar Turebayeva
https://orcid.org/0000-0001-6413-521X
L.N. Gumilyov Eurasian National University
Kazakhstan

Salima Seitenova *
https://orcid.org/0000-0001-9186-9227
*: Corresponding Author
West Kazakhstan University named after M. Utemisov
Uralsk, N. Nazarbaeva 162
Kazakhstan
Contact e-mail: *seitenova_ss@mail.ru*

Kenzhekhan Medeubayeva
https://orcid.org/0000-0002-8399-384X
Kazakh National Women's Pedagogical University of Kazakhstan
Gogol Street, 114
Kazakhstan