The role of teacher's pedagogical competencies in the development of students' metacognitive competencies

Z.T. Kenzhebayeva[1], B.A. Matayev[1]*, M.A. Kenenbayeva[1], G.Z. Sarbassova[2]
[1]Pavlodar Pedagogical University named after Alkey Margulan
Pavlodar, Republic of Kazakhstan
[2]Alikhan Bokeikhan University, Semey, Republic of Kazakhstan.
matayevba@pspu.kz

Abstract. The present article deals with the problematic issues revealing the role of teacher's pedagogical competencies in the development of schoolchildren's metacognitive competencies. The purpose of the study is to investigate the significance of didactic competencies in the formation of required skills and abilities in schoolchildren. The research methodology included literary analysis of available sources, questionnaire survey and testing of high school students. As a result, it was found that pedagogical competencies do contribute to the development of required competencies in students, provided that the teacher uses in his/her activity various methods, means and techniques of influence on his/her students. The findings indicate that there is a relationship between teachers' pedagogical competencies and the development of students' metacognitive skills. However, the study also revealed a number of problems. Firstly, students reported insufficient development of teachers' pedagogical competencies. Secondly, a low level of meta-skills in students themselves was established in parallel. Based on the results obtained, recommendations are offered to improve the level of teachers' pedagogical competencies in order to improve the indicators of metacognitive competencies development among high school students. These recommendations take into account the identified problems and are based on the successful experience of applying the developed methodology.

Introduction

The relevance of the study is based on the fact that the formation of meta-subject competencies among schoolchildren is considered one of the important tasks of the modern education system of Kazakhstan. Since they are outlined in the State Standards of Primary, Basic Secondary and General Secondary Education [1] and in the provisions of the Concept of Development of Secondary Education of the Republic of Kazakhstan for 2023-2029 [2]. This approach is directly related to the need of society and the education system to prepare students of Kazakhstani schools for the living conditions of a constantly and rapidly changing world, based on which they will have to solve complex issues of interdisciplinary nature in the future. The competencies of Kazakhstani teachers are of special importance in this process, as the development of required meta-subject skills and abilities of schoolchildren largely depends on the level of their development.

There are other studies in this area that show that the development of meta-subject competencies in modern schoolchildren can be ensured only if their teachers have sufficient pedagogical competencies. The work of N.I. Chirkova points out the importance of teachers' understanding of the step-by-step development of students' meta-subject competencies [3]. N.A. Zalygina, S.D. Shakura write about the importance of developing teacher's professional qualities for the formation of metaeducational and personal competencies in students and define them as the main goals of teacher-scholar interaction [4]. G.N. Rovenskikh, E.V. Dronova, G.V. Bezrukova consider the peculiarities of modern approaches to the formation of metaeducational competencies at school and point out that the teacher's knowledge of his/her subject and its links with other disciplines are still important [5]. Most authors in their studies believe that teachers who have both rigid and flexible skills can significantly improve the metaeducational competencies of their students.

The present study aims to establish the influence of teacher's competencies that allow more effective meta-skills development of students. On this basis, the purpose of this study is to examine the significance of didactic competencies in the development of the required metacognitive abilities and skills in students.

The objectives of the study were:

1. Analysis of theoretical foundations and approaches to the definition of pedagogical and metaeducational competencies;

2. Evaluating the effectiveness of teachers' pedagogical competencies for developing metacognitive competencies in high school students.

3. Development of recommendations to improve the effectiveness of teachers' pedagogical competencies for the development of students' metacognitive competencies.

The methods of the study were literary analysis, survey methods based on questionnaires of schoolchildren, observation methods and statistical analysis of the obtained data.

The procedures of the study are as follows: development of questionnaires to assess the level of teachers' pedagogical competencies and metacognitive competencies in students; conducting questionnaires, testing and observation to assess the effectiveness of teachers' use of pedagogical techniques that characterize and pedagogical competencies; processing of the obtained results and their analysis using statistical methods.

The theoretical significance of the study lies in the expansion of basic concepts and mechanisms regarding the influence of teacher competencies on the development of the required metacognitive competencies in modern schoolchildren.

Practical significance is expressed in the development of a methodology for assessing the effectiveness of teachers' pedagogical competencies in the context of the development of students' metacognitive competencies and other recommendations for teachers and educational institutions.

Materials and Methods

The materials of literary analysis on the topic of the study were legislative and regulatory acts, monographs, dissertation studies, scientific articles and individual publications.

The evaluation of the role and influence of pedagogical competencies on the development of metacognitive competencies in high school students was conducted among 30 high school students in stages.

1. Determination of senior pupils' level of meta-preparatory skills. It was conducted in the form of testing with the following tasks:

1. make a logical sentence using terms from different subjects: history,

geography, math, physics, chemistry, biology.

2. draw a conclusion about the problems of the city, using the images in the photo, reflecting different aspects of life in the city.

3. combine information from the text and the table and write a new text.

4. comparing the content of two texts and identifying what they have in common and what is different.

5. solving two problems based on knowledge from other subjects.

6. describing the relatedness of the proposed texts and diagrams.

Criteria for a ballpark score on test results to establish high school students' level of meta-predictive skills: for full completion - 5; for partial completion - 3; for noncompletion - 0. For example:

· complete fulfillment: a logical sentence that correctly combines terms from different subjects without grammatical errors; partial fulfillment: a logical sentence but with some grammatical errors or missing some terms, and so on.

2.Establishing feedback from high school students:

A questionnaire survey of students was conducted to determine to what extent the teacher's pedagogical competencies develop their meta- subject competencies. Questionnaire questions to determine the high, medium or low level of pedagogical competence:

1. How do teachers' pedagogical competencies help you in developing meta-subject competencies? Good. Average. Not helpful.

2. Which teaching method used by your teachers do you find most useful for developing meta- subject competencies?

3. What is the level of pedagogical competence of your teachers to help you develop metacognitive competencies? High. Medium. Low.

4. Do your teachers often organize discussions and debates in lessons to develop meta- subject competencies? Often. Moderately. Rarely or never.

5. What is the ability to ask your teachers for additional help or advice on issues related to the development of meta-preparatory competencies? High. Medium. Low

6. To what extent do you feel supported by your teacher in the process of developing meta-competencies? Good. Average. Not good.

At the next stage, a methodology for the development of meta-subject competencies in students is developed and training is conducted using elements of this methodology. It includes the following pedagogical technologies:

· Designing projects that require students' knowledge of several subjects. This requires the following pedagogical competencies: organization skills, the ability to motivate students to complete the project, and the ability to coordinate teamwork;

· organizing discussion clubs to discuss problematic issues in several subjects to develop students' critical thinking and communication skills. Pedagogical competencies are defined as: moderation skills, supporting and encouraging constructive dialog and ensuring active participation of all students;

· use of simulation exercises, in the form of role-playing games, as they help high school students to use theoretical knowledge on several subjects in practice. The pedagogical competencies here are: teacher's ability to create real learning scenarios, ability to explain the rules of simulation;

· Case studies aimed at developing students' analytical and creative

skills. The teacher's pedagogical competencies are defined as: the ability to create practical tasks according to the level of knowledge and requirements of modern students;

· active use of modern information technologies, where information from different subjects can be used from different sources. These include interactive whiteboards, mobile applications and online educational platforms. The teacher's pedagogical competencies are the skills to create interactive lessons and to master modern information technologies;

· organization of lessons in the form of debates, which allows students to develop skills of critical thinking and argumentation of their own opinion on the basis of other people's judgments. The teacher should have the pedagogical competence to prepare the program and write theses for the debate, be able to organize students to work in several controversial groups, ensure that all participants comply with the rules of the debate.

At the third stage, the assessment of learning outcomes of senior pupils is carried out. It includes repeated testing of meta-subject competencies of high school students. The results are compared before and after the implementation of pedagogical competencies for the development of meta-subject competencies in high school students.

Results

In the course of analyzing the theoretical foundations and approaches to the definition of metacognitive competencies, it was found that there is no single definition of competence so far. Competence (derived from the Latin word competentia) is defined as a range of issues in which an individual is well-informed and has certain knowledge and experience [6]. The term "competence" was first introduced by the American linguist N. Chomsky in order to designate the basic abilities of speech formation. At the same

time, the concept of "competence" as a term in N. Chomsky's concept is compared with the term performance. N. Chomsky understood competence as a certain ability of a person to understand and reproduce an unlimited number of correct sentences, and believed that it is based not only on language signs learned by a person, but also on the rules of their connection. [7]. A.A. Leontiev proposed to distinguish in this concept "Abilities of an individual" [8]. In general, competence, according to a number of authors, is a set of personal qualities (knowledge, value-sense orientations, abilities, skills, abilities, skills), determined by the experience of the individual's activity in a certain personally significant or socially and socially important sphere. That allows us to dwell on its understanding as the ability of an individual to cope with a variety of tasks.

Pedagogical competencies can be considered the professional competence of a teacher (educator), the purpose of which, from the point of view of the humanistic approach to the education system, is considered to be the development of an educated and creative personality of a student [9, p. 256-279]. Based on this, the teacher's work or professional activity can be presented as an experience of active pedagogical activity, in the course of which the tasks in the field of education, upbringing and child development are solved. Provided that the teacher uses in his/her activity various methods, means and techniques of influence on students.

In the Republic of Kazakhstan, the profession of a teacher is regulated by the Professional Standard of the Kazakhstani "Teacher", which was developed by NAP "Atameken" in 2017 [10]. The procedure for its development was approved by the Ministry of Education and Science of the Republic of Kazakhstan [11]. The professional standard of a teacher is included in the national system of professional qualifications and serves as a basis for the development of modules of pedagogical specialties and is used in the development of educational programs. It is used in the certification of teachers by levels of compliance, as it develops assessment material on the basis of developed criteria in

the scope of all qualifications. This standard complies with international norms and takes into account all the specializations of each professional group. The standard identifies both personal and professional competencies of the teacher. Descriptors (describing indicators) of all 12 sub-levels of teacher's labor functions are defined through the degree of autonomy, the degree of responsibility and the degree of complexity:

- 1) The degree of teacher autonomy was replicated in generalized indicators such as "professional skills and professional skills";

- 2) the degree of responsibility is assigned in such indicator as "personal and professional competencies" of the teacher (educator);

- 3) the degree of complexity lies in the indicator of "knowledge" that needs to be transferred to others. It should be noted that the complexity of pedagogical labor of a teacher is connected, first of all, with the fact that it belongs to the type of professions according to the principle of "man - man".

All this confirms that a teacher in Kazakhstan must have the required competencies in order to teach and educate students and develop their skills.

A group of authors, L.D. Shekhovtsova, I.V. Prokofieva, R.I. Markova, E.A. Molchanova disclose the following concepts related to meta-subject competencies:

- meta-subject approach used in the education system represents pedagogical and educational technologies that are used to solve the problem of lack of connection between different scientific disciplines, which are used in the process of cognition of students learning material;

- meta-subjectivity forms in children an approach to a particular subject from the point of view of the whole picture of the world, which is expressed in mathematics in numbers and figures, in chemistry - in atoms and molecules, in physics - in mass, energy and other inertia of the body, in literature and art - in the images of artistic heroes. Metacognition allows to develop the integrity of the pupil's development (personal, cognitive and general cultural);

- metaeducational results in the education system are considered to be methods and tools of activity, which students have mastered on the basis of all, one, several subjects studied in the educational process, but which can be applied outside it to solve various problems, both educational and their own life [12]. Metacognitive competences are a system of common knowledge, skills and practical experience used in interdisciplinary activities, which enables a person to perform effectively cognitive, regulatory, communicative tasks. Under meta-subject competences it is accepted to consider all abilities that can be combined. They often include such flexible general academic and cognitive skills as theoretical thinking, critical and creative thinking, qualities of thinking and regulatory skills and others [13]. Metacognitive competencies, as edited by E.A. Yarovaya, are measurable ways of human actions, skills and abilities. And also his subjective position as a student, which allows him to be realized successfully in a certain activity [14]. Metacognitive competencies, according to V.I. Kolmakova, can be labeled as universal learning actions that allow students to successfully carry out their cognitive, communicative and regulatory functions [15]. E.V. Gelyasina defines meta-subject competences as superstructural competences that are above subject skills and are used as means of their development [16].

The results of testing to establish senior pupils' level of meta-predictive skills, according to answers to the following questions, in points are marked in Figure 1.
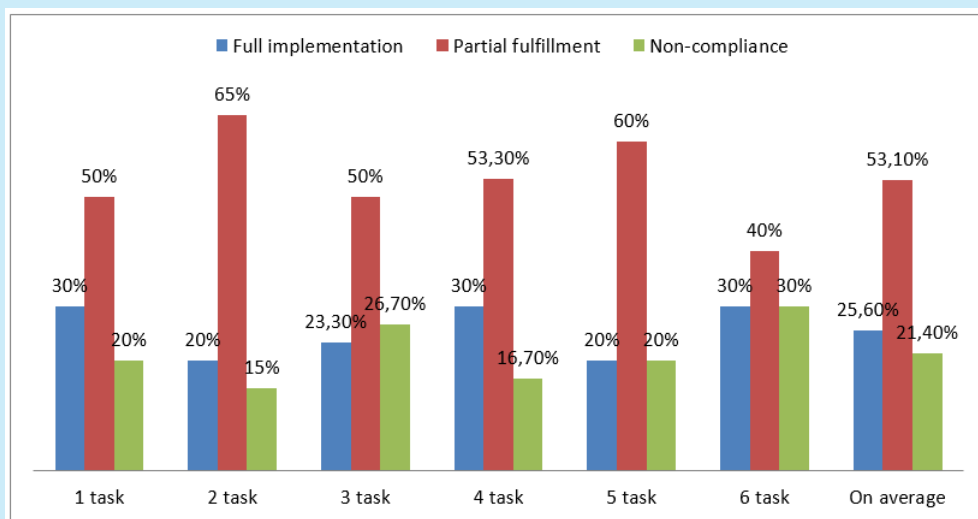
Figure 1 - Level of meta-predictive skills among high school students at the beginning, in percentages

Provided (fully completed; partially completed; not completed): 1 task: 30%; 50% and 20%; 2 task: 20%; 65% and 15%; 3 task: 23.3%; 50% and 26.7%; 4 task: 30%; 53.3% and 16.7%; 5 task: 20%; 60% and 20%; 6 task: 30%; 40% и 30%. Total average: complete fulfillment was noted in 25.6% of pupils, which corresponds to the highest level. In 25.6%, which corresponds to the highest level; partial or average level - in 53.1%; non-fulfillment or low level - in 21.4% of senior pupils. 21.4% of senior pupils.

The results of students' questionnaires on the level of teacher's pedagogical competencies to develop their meta-subject competencies are shown in Figure 2.
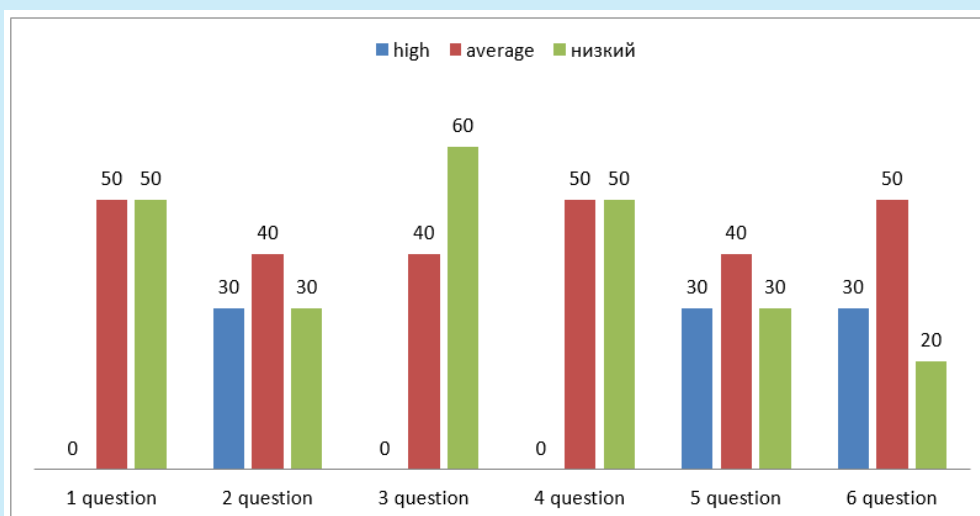

Figure 2 - Determination of the level of teacher's pedagogical competencies that enable him/her to develop students' metacognitive competencies, in percentages

Teachers' pedagogical competencies used in the development of meta- subject competencies are defined as medium -50% and low - also 50%. The level of teachers' pedagogical competencies for the development of meta-subject competencies among high school students is as follows: high - 30%, average - 40; low -30%.

Frequency of teachers' use of modern teaching methods to develop meta-subject competencies: average - 40% and low - 60%.

Frequency of teachers' organization of discussions and debates in lessons to develop meta- subject competencies: average - 50% and low - 50%.

The ability to ask your teachers for additional help or consultation on issues related to the development of meta-preparatory competencies is defined as high - in 30%, medium - 40% and low - 30%.

Feel the support from the teacher in the process of meta-subject competencies development at high level - 30%, average - 50% and low - 20%.

The results of the level of meta-predictive skills in high school students after approbation of the proposed methodology are shown in Figure 3.
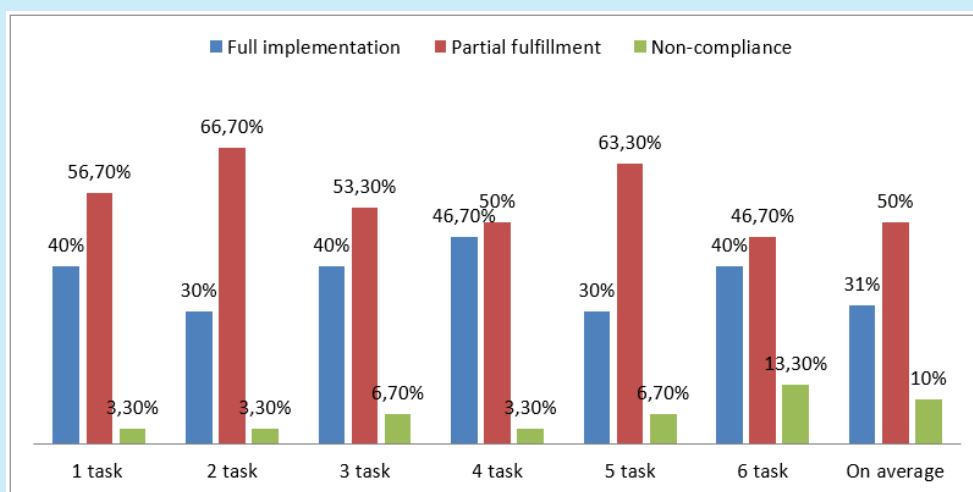

Figure 3 - Results of testing to determine the level of meta-predictive skills of high school students at the end, in percentages

1 task: complete fulfillment -40% partial fulfillment -56,7%; not fulfilled -3,3%.2 task: 30%; 66.7% and 3.3%, respectively.3 task: 40%;53.3% and 6.7%, respectively.4 task: 46.7%;50% and 3.3%, respectively. 5 task: 30%;63.3% and 6.7%, respectively. 6 task 40%;46.7% and 13.3%, respectively.

On average: complete completion -31.2%; complete completion -50%; not complete -10%.

The results of the comparative analysis are reflected in Table 1.

Table 1 Results of the level of meta-preparatory skills in high school students, at the beginning and after approbation, in percentages

Indicators	Full implementation (beginning/end)	Partial fulfillment (beginning/end)	Non-compliance (beginning/end)
1 task	30/ 40%	50/ 56,7%	20/ 3,3%
2 task	20/ 30%	65/ 66,7%	15/ 3,3%
3 task	23,3/ 40%	50/ 53,3%	26,7/ 6,7%
4 task	30/ 46,7%	53,3/ 50%	6,7/ 13,3%
5 task	20/ 30%	60/ 63,3%	20/ 6,7%
6 task	30/ 40%	40/ 46,7%	30/ 13,3%
On average	25,6/ 37,8%	53,1/ 56,1%	21,4/ 6,1%

For each task and on average, performance at the end improved from the initial performance

Discussion

Based on the analysis of questionnaire and test survey data, it is possible to draw conclusions about teachers' pedagogical competencies and their influence on the development of meta- subject competencies of senior school students. Half of students, or 50%, believe that teachers' pedagogical competencies do not help them in the development of meta-subject competencies, which indicates low efficiency of current approaches on the part of individual teachers.

The level of teachers' pedagogical competencies is assessed as high by only 30% of pupils, 40% as average and 30% as low. Such indicators testify to the average level of pedagogical competencies and the presence of different opinions among pupils regarding the perception of teachers' professional qualification.

60% of pupils note rare or never occurring use of modern teaching methods by teachers, which may well have a negative impact on the development of students' meta-subject competencies.

Regarding the organization of discussions and debates, half of the students or 50% state that they are conducted by teachers relatively often, which can be recognized as a positive moment for the development of critical thinking and other metacognitive competencies in students.

Regarding the availability of additional help from the teacher, 30% of students believe that the possibility of referring to them is high, 40% - medium and 30% - low. The obtained data indicate the need to improve this pedagogical competence.

The majority of students or 80% feel supported by the teacher at a medium or high level, which can be considered good but needs its improvement to get a better result.

Analysis of pupils' survey results at the beginning has shown that a small majority of pupils or 53.1% were able to partially complete the tasks, which shows that they have basic skills, but indicates insufficient confidence in their use. A rather high rate of task non-fulfillment noted in 21.4% of pupils tells us that many senior pupils have difficulties in solving meta-subject tasks. The weakest places should be considered to be the tasks for solving problems from combined information, as only 20-26.7% of their complete fulfillment is noted here, which indicates that teachers need to provide deeper training of meta-subject skills.

The results of the final survey of students allowed us to draw the following conclusions. After teachers use their competencies aimed at the development of meta-skills in students, a significant improvement in the volume of all tasks is noted. On average, 31.20% of students fully completed the tasks, which indicates successful development of their meta-skills. At the same time, the level of task non-fulfillment decreased to 3.3 to 10%, which indicates that the majority of senior pupils can cope with such tasks, as they have meta-subject skills at a high and average level. It should be noted that senior pupils (46.7%) have more noticeable progress in completing the tasks of composing logical sentences and comparing texts, which indicates that pupils' analytical abilities have grown.

The comparative analysis has shown that the number of pupils who fully completed the tasks increased by 14.4% (at the beginning: 25.6%; at the end: 40%), which indicates a significant improvement in the ability of senior school pupils to perform metaeducational tasks at a high level. While the number of children partially completing tasks decreased, by 5.3% (beginning: 53.1%; ending: 50%). Such decrease testifies to a significant transition of many pupils to the group of those who have fully completed the tasks and to the group of pupils from the third group (who have not previously completed such tasks). It is important to consider that they clearly understand the tasks and try to fulfill them, as they have improved their meta-skills to a certain extent. This is also confirmed by the data on pupils who failed to complete the tasks, as their number decreased by 11.4 (at the beginning: 21.4%; at the end: 10%), which confirms that there are fewer pupils who failed to complete the tasks.

We have also made other conclusions from analyzing pupils' answers. Regarding teachers' professional training, it is noted that many teachers have good knowledge in their own and other subjects. However, some pupils expressed an opinion that not all teachers actively use modern approaches to meta-subject teaching. Pupils positively evaluated the use of different teaching methods such as discussions, debates, projects and interactive activities, which indicates that teachers have good pedagogical skills. Most students emphasized the importance of pedagogical skills such as communication and support, as they noted that many teachers are open to students and willing to help them. However, some students pointed out the lack of individual approach: as it is not always possible to get the necessary support from the teacher, especially when solving complex meta- subject issues. Some students noted that constructive feedback from the teacher is important for them, as it enables them to understand tasks better and avoid making mistakes. While some of them are dissatisfied with teacher feedback.

Thus, the main problems that need to be solved in this area can be considered as: teachers' qualification level; use of progressive teaching methods; individual approach to students and effective feedback. The results obtained can be compared with other works. For example, we can refer to the works of G.N. Rovenskikh, E.V. Dronov, G.V. Bezrukov on the importance of the formation of meta-subject competencies in a modern school and the development of teacher's pedagogical competencies [17], S.A. Plyaskina on the formation of meta-subject competencies in junior schoolchildren [18], N.A. Zalygin and S.D. Shakur on the importance of developing teacher's professional competencies for the formation of personal and meta-subject competencies of students [19] and some others. Since these authors directly or indirectly considered the relationship between pedagogical competencies and the development of meta-subject competencies and made conclusions that only a teacher who has the necessary skills and knowledge can help students to develop meta-subject competencies in their students. They also pointed out that the integration of teachers' subject skills, as well as their use of active and meaningful teaching methods and information and communication technologies should be considered as key tools in this process.

On these conditions, we have developed

recommendations to improve the level of teachers' pedagogical competencies for the development of students' metacognitive competencies:

1. Regular professional development of teachers through courses that practice modern teaching methods and pedagogical competencies aimed at the development of metacognitive competencies.

2. Introduction of modern educational technologies into the school teaching process. Provide the school and teachers with resources for using modern technologies and interactive teaching methods.

3. Encourage teachers to build their pedagogical competencies in discussion, project and group work through workshops and trainings, mentoring and learning from positive experiences.

4. Improve students' accessibility in receiving consultations on meta-competencies: determine the time of additional consultations and create conditions for students to freely ask teachers for help.

5. Introduce regular feedback from students on the level of support and quality of teaching, enabling more responsiveness to student concerns and needs and developing competencies.

6. Create professional communities of teachers to share experience and best practices in pedagogical competencies used to develop students' metacognitive competencies.

The following should also be recommended to enhance pedagogical competencies:

· organizing and conducting regular trainings on modern teaching methods;
· creating conditions for sharing experience, in the form of teachers' participation in conferences and seminars where successful methods and effective practices can be shared;
· Encourage individualized programs to support students with individual needs and different levels of preparation;
· To improve the system of assessment of teacher's pedagogical competencies and students' metacognitive skills. To make the assessment system more transparent and allow to see the progress in the development of each student.

Conclusion

Pedagogical competencies are considered to be professional abilities of a teacher to develop an educated and creative personality of a student. They are expressed in the form of experience of active activity of a teacher, during which he/she uses various methods, means and techniques of influence and thus solves the tasks of teaching, education and development of children.

In the course of pupils' survey it has been established that only 30% of pupils assess the level of teachers' pedagogical competencies as high. Many of them note that teachers rarely use modern teaching methods, which may negatively affect the development of students' metaeducational competencies. The obtained data indicate the need to improve many pedagogical competencies. For example, low availability of additional assistance from teachers, while the majority of pupils feel support from teachers at average or high level, which can be considered as a good indicator, but requires improvement.

The proposed recommendation for the development of metacognitive competencies includes pedagogical competencies that teachers need to constantly develop and improve. The proposed methodology for the development of metacognitive competencies includes pedagogical competencies that teachers need to constantly develop and improve.

These recommendations should increase teachers' pedagogical competencies and improve students' metacognitive competencies. At the same time, it is

important to realize that they are most important for high school students who will use them in practice in the near future.

References List

1. «Об утверждении государственных общеобязательных стандартов дошкольного воспитания и обучения, начального, основного среднего и общего среднего, технического и профессионального, послесреднего образования» (далее – ГОСО) (приказ Министра просвещения Республики Казахстан от 3 августа 2022 года № 348) URL: https://adilet.zan.kz/rus/docs/V2200029031 (дата обращения: 18.10.2024)

2. Концепция развития дошкольного, среднего, технического и профессионального образования Республики Казахстан на 2023 – 2029 годы URL: https://adilet.zan.kz/rus/docs/P2300000249

3. **Чиркова, Н.И.** К вопросу о формировании метапредметной компетентности у учащихся в условиях дополнительного образования детей // Гуманизация образования. 2020. - №4, С. 34-47.

4. **Залыгина, Н.А.** Развитие профессиональных качеств учителя в сфере формирования личностных и метапредметных компетенций учащихся: учеб.-метод. пособие для пед. работников системы дополнительного образования взрослых / ГУО «Акад. последиплом. образования». – Минск: АПО, 2021. – 207 с.

5. **Ровенских, Г.Н.** Формирование метапредметных компетенций в современной школе // Молодой ученый. - 2022. - № 41 (436). - С. 62-64.

6. **Khazova, S., Grebennikova, V.M., Alexei, A. (2023).** Dominant metacognitive competencies of modern schoolchildren and the problems of their formation: theoretical and empirical substantiation. Perspectives of Science and Education, № 4 (64). p. 259-278. https://doi.org/10.32744/pse.2023.4.16

7. **Thienngam, S., Promlek, A., & Thongsaard, K. (2020).** Influence of Teachers' Metacognitive Skills on Development of Early-Childhood Students. Australian Journal of Teacher Education, №45. p. 19-30. https://doi.org/10.14221/ajte.2020v45n1.2.

8. **Smortchkova, J., & Shea, N., (2020).** Metacognitive Development and Conceptual Change in Children. Review of Philosophy and Psychology, https://doi.org/10.1007/s13164-020-00477-7.

9. **Ломакина, Г.Р.** Педагогическая компетентность и компетенция: проблемы терминологии // Педагогическое мастерство: материалы I Междунар. науч. конф. - Москва: Буки-Веди, 2012. - С. 276-279. — URL: https://moluch.ru/conf/ped/archive/22/2190/

10. Приказ Председателя Правления Национальной палаты предпринимателей Республики Казахстан «Атамекен» № 133 от 8 июня 2017 года URL: https://atameken.kz/uploads/content/files.

11. Приказ Министра образования и науки Республики Казахстан от 13 сентября 2013 года № 373 URL: https://adilet.zan.kz/rus/docs/V1300008819

12. **Шеховцова, Л.Д.** Метапредметные универсальные умения // Молодой ученый. - 2017. - № 42 (176). - С. 185-187.

13. **Черепкова, О.О.** Содержание и структура метапредметных компетенций // Молодой ученый. - 2020. - № 52 (342). - С. 441-444.

14. **Яровая, Е.А.** Формирование метапредметной компетентности учащихся 5-6-х классов основной школы (биология, математика): монография; - Новосибирск: Изд-во НГПУ, 2014. - 157с.

15. **Колмакова, В.В.** Культуроцентрический подход как методологическая основа современной педагогической теории и практики: сборник трудов конференции. // Педагогическое мастерство и педагогические технологии: материалы VII Междунар. науч.–практ. конф. – Чебоксары: Центр научного сотрудничества «Интерактив плюс», 2016. – С. 79-86.

16. **Гелясина, Е.В.** Метапредметная организация содержания педагогического образования как условие его фундаментализации // Человек и образование. 2016. №. 1 (46), С. 39-44.

17. **Ровенских, Г.Н.** Формирование метапредметных компетенций в современной школе // Молодой ученый. - 2022. - № 41 (436). - С. 62-64.

18. **Пляскина, С.А.** Формирование метапредметных компетенций у младших школьников // Молодой ученый. - 2016. - № 28 (132). - С. 937-939.

19. **Залыгина, Н.А.** Развитие профессиональных качеств учителя в сфере формирования личностных и метапредметных компетенций учащихся: учеб.-метод. пособие для пед. работников системы дополнительного образования взрослых. – Минск: АПО, 2021. – 207 с.

References

1. «Ob utverzhdenii gosudarstvennyh obshcheobyazatel›nyh standartov doshkol›nogo vospitaniya i obucheniya, nachal›nogo, osnovnogo srednego i obshchego srednego, tekhnicheskogo i professional›nogo, poslesrednego obrazovaniya» (dalee – GOSO) (prikaz Ministra prosveshcheniya Respubliki Kazahstan ot 3 avgusta 2022 goda № 348) [On the approval of the state mandatory standards of preschool education and training, primary, basic secondary and general secondary, technical and vocational, post-secondary education] URL: https://adilet.zan.kz/rus/docs/V2200029031

2. Koncepciya razvitiya doshkol'nogo, srednego, tekhnicheskogo i professional'nogo obrazovaniya Respubliki Kazahstan na 2023 – 2029 gody [The concept of development of preschool, secondary, technical and vocational education of the Republic of Kazakhstan for 2023-2029] URL: https://adilet.zan.kz/rus/docs/P2300000249

3. **Chirkova, N.I.** K voprosu o formirovanii metapredmetnoj kompetentnosti u uchashchihsya v usloviyah dopolnitel'nogo obrazovaniya detej [On the issue of the formation of meta-subject competence among students in the conditions of additional education of children] // Gumanizaciya

obrazovaniya. 2020. - No. 4, S. 34-47.

4. **Zalygina, N.A.** Razvitie professional'nyh kachestv uchitelya v sfere formirovaniya lichnostnyh i metapredmetnyh kompetencij uchashchihsya [Development of professional qualities of a teacher in the field of formation of personal and meta-subject competencies of students]. – Minsk: APO, 2021. – 207 s.

5. **Rovenskih, G.N.** Formirovanie metapredmetnyh kompetencij v sovremennoj shkole [Formation of meta-subject competencies in a modern school] // Molodoj uchenyj. - 2022. - № 41 (436). - S. 62-64.

6. **Khazova, S., Grebennikova, V.M., Alexei, A. (2023).** Dominant metacognitive competencies of modern schoolchildren and the problems of their formation: theoretical and empirical substantiation. Perspectives of Science and Education, № 4 (64). p. 259-278. https://doi.org/10.32744/pse.2023.4.16

7. **Thienngam, S., Promlek, A., & Thongsaard, K. (2020).** Influence of Teachers' Metacognitive Skills on Development of Early-Childhood Students. Australian Journal of Teacher Education, №45. p. 19-30. https://doi.org/10.14221/ajte.2020v45n1.2.

8. **Smortchkova, J., & Shea, N., (2020).** Metacognitive Development and Conceptual Change in Children. Review of Philosophy and Psychology, https://doi.org/10.1007/s13164-020-00477-7.

9. **Lomakina, G.R.** Pedagogicheskaya kompetentnost' i kompetenciya: problemy terminologii [Pedagogical competence and competence: problems of terminology]. Moskva: Buki-Vedi, 2012. - S. 276-279. URL: https://moluch.ru/conf/ped/archive/22/2190/

10. Prikaz Predsedatelya Pravleniya Nacional'noj palaty predprinimatelej Respubliki Kazahstan «Atameken» № 133 ot 8 iyunya 2017 goda [Order of the Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No. 133 dated June 8, 2017] URL: https://atameken.kz/uploads/content/files.

11. Prikaz Ministra obrazovaniya i nauki Respubliki Kazahstan ot 13 sentyabrya 2013 goda № 373 [Order of the Minister of Education and Science of the Republic of Kazakhstan dated September 13, 2013 No. 373] URL: https://adilet.zan.kz/rus/docs/V1300008819

12. **Shekhovcova, L.D.** Metapredmetnye universal'nye umeniya [Metasubject universal skills]. // Molodoj uchenyj. - 2017 - № 42 (176). - S. 185-187.

13. **Cherepkova, O.O.** Soderzhanie i struktura metapredmetnyh kompetencij [The content and structure of meta-subject competencies] // Molodoj uchenyj. - 2020. - № 52 (342). - S. 441-444.

14. **Yarovaya, E.A.** Formirovanie metapredmetnoj kompetentnosti uchashchihsya 5-6-h klassov osnovnoj shkoly (biologiya, matematika) [Yarovaya E.A. Formation of meta-subject competence of students in grades 5-6 of primary school (biology, mathematics)] monografiya; - Novosibirsk: Izd-vo NGPU, 2014. – 157 s.

15. **Kolmakova, V.V.** Kul'turocentricheskij podhod kak metodologicheskaya osnova sovremennoj pedagogicheskoj teorii i praktiki [Cultural-centric approach as a methodological basis of modern pedagogical theory and practice] sbornik trudov konferencii. // Pedagogicheskoe masterstvo i pedagogicheskie tekhnologii: materialy VII Mezhdunar. nauch.–prakt. konf. – CHeboksary: Centr nauchnogo sotrudnichestva «Interaktiv plyus», 2016. – S. 79-86.

16. **Gelyasina, E.V.** Metapredmetnaya organizaciya soderzhaniya pedagogicheskogo obrazovaniya kak uslovie ego fundamentalizacii [Meta-subject organization of the content of pedagogical education as a condition for its fundamentalization] // CHelovek i obrazovanie. 2016. № 1 (46), S. 39-44.

17. **Rovenskih, G.N.** Formirovanie metapredmetnyh kompetencij v sovremennoj shkole [Formation of meta-subject competencies in a modern school] // Molodoj uchenyj. - 2022. - № 41 (436). - S. 62-64.

18. **Plyaskina, S.A.** Formirovanie metapredmetnyh kompetencij u mladshih shkol'nikov [Formation of meta-subject competencies in younger students] // Molodoj uchenyj. - 2016. - № 28 (132). - S. 937-939.

19. **Zalygina, N.A.** Razvitie professional'nyh kachestv uchitelya v sfere formirovaniya lichnostnyh i metapredmetnyh kompetencij uchashchihsya [Development of professional qualities of a teacher in the field of formation of personal and meta-subject competencies of students]: ucheb.-metod. posobie dlya ped. rabotnikov sistemy dopolnitel'nogo obrazovaniya vzroslyh. – Minsk: APO, 2021. – 207 s.

Оқушылардың метапәндік құзыреттілігін дамытудағы мұғалімнің педагогикалық құзыреттілігінің рөлі

Кенжебаева Ж.Т.[1], Матаев Б.А.[1]*, Кененбаева М.А.[1], Сарбасова Г.Ж.[2]
[1]Әлкей Марғұлан атындағы Павлодар педагогикалық университеті Павлодар қ., Қазақстан Республикасы
[2]Әлихан Бөкейхан Университеті, Семей қ., Қазақстан Республикасы
matayevba@pspu.kz*

Аңдатпа. Бұл мақалада оқушылардың метакогнитивті құзыреттіліктерін дамыту-дағы мұғалімнің педагогикалық құзыреттілігінің рөлін ашатын проблемалық мәселелер қарастырылады. Зерттеудің мақсаты-оқушыларда қажетті дағдылар мен дағдыларды қалыптастырудағы дидактикалық құзыреттіліктің маңыздылығын зерттеу. Зерттеу әдістемесі жоғары сынып оқушыларына қол жетімді дереккөздерді әдеби талдауды, сауалнама жүргізуді және тестілеуді қамтыды. Нәтижесінде мұғалім өз қызметінде өз оқушыларына әсер етудің әртүрлі әдістерін, құралдары мен әдістерін қолданған жағдайда, педагогикалық құзыреттіліктер оқушылардың қажетті құзыреттіліктерін қалыптастыруға ықпал ететіндігі анықталды. Алынған нәтижелер оқытушылардың педагогикалық құзыреттіліктері мен студенттердің метакогнитивтік дағдыларын дамыту арасындағы өзара байланыстың бар екендігін көрсетеді. Алайда, зерттеу бірқатар проблемаларды анықтады. Біріншіден, студенттер оқытушылардың педагогикалық құзыреттіліктерінің жеткіліксіз дамуын атап өтті. Екіншіден, сонымен қатар студенттердің метакогнитивтік дағдыларын дамытудың төмен деңгейі анықталды. Алынған нәтижелер негізінде жоғары сынып оқушыларының метакогнитивтік құзыреттіліктерін дамыту көрсеткіштерін жақсарту мақсатында мұғалімдердің педагогикалық құзыреттілік деңгейін арттыру бойынша ұсыныстар ұсынылады. Бұл ұсыныстар анықталған проблемаларды ескереді және әзірленген әдісті қолданудың сәтті тәжірибесіне негізделген.

Түйінді сөздер: құзыреттіліктер, педагогикалық құзыреттіліктер, метапәндік құзыреттіліктер, мұғалімдер, оқушылар.

Роль педагогических компетенций учителя в развитии метапредметных компетенций школьников

Кенжебаева Ж.Т.[1], Матаев Б.А.[1]*, Кененбаева М.А.[1], Сарбасова Г.Ж.[2]
[1]Павлодарский педагогический университет имени Әлкей Марғұлан г.Павлодар, Республика Казахстан
[2]Университет Алихана Бокейхана г.Семей, Республика Казахстан
matayevba@pspu.kz*

Аннотация. В данной статье рассматриваются проблемные вопросы, раскрывающие роль педагогических компетенций учителя в развитии метакогнитивных компетенций школьников. Цель исследования - изучить значимость дидактических компетенций в формировании необходимых умений и навыков у школьников. Методология исследования включала литературный анализ доступных источников, анкетирование и тестирование старшеклассников. В результате было установлено, что педагогические компетенции действительно способствуют формированию необходимых компетенций у учащихся при условии, что учитель использует в своей деятельности различные методы, средства и приемы воздействия на своих учеников. Полученные результаты свидетельствуют о наличии взаимосвязи между педагогическими компетенциями преподавателей и развитием метакогнитивных навыков студентов. Однако исследование выявило и ряд проблем. Во-первых, студенты отметили недостаточное развитие педагогических компетенций преподавателей. Во-вторых, параллельно был выявлен низкий уровень развития метакогнитивных навыков у самих студентов. На основе полученных результатов предлагаются рекомендации по повышению уровня педагогической компетентности учителей с целью улучшения показателей развития метакогнитивных компетенций у старшеклассников. Данные рекомендации учитывают выявленные проблемы и основаны на успешном опыте применения разработанной методики.

Ключевые слова: компетенции, педагогические компетенции, метапредметные компетенции, учителя, школьники.