Dialogue-Interaction-Respect as key elements of pedagogical partnership and their significance for the development of teachers' competence

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Abstract— The current educational environment should be conducive to the students' development, open to innovation, interactive, and stimulating the active participation of all participants in the educational process. However, in this context, it is important to design such an environment that would be developmental not only for students but also for teachers. Therefore, this study aimed to check how the observance of the principles of pedagogical partnership in the educational process affects the development of the teachers' competence. The Marzano Teacher Evaluation Model (2017) and the Classroom Assessment Scoring System (CLASS) were used to identify the professional competence level. The implementation of the Pedagogy of Partnership program in general secondary education institutions had a positive effect on the development of teachers' methodological professional competence, namely: it increased by 10% among teachers of the English language, by 14% among teachers of the Ukrainian Language and Literature, and Mathematics — by 9%. It was also determined that there is a statistically significant relationship between the teachers' experience and their level of competence: the highest correlation is observed between the level of competence and experience from 5 to 10 years (0.988). The study revealed that teachers working according to the principles of the Pedagogy of Partnership use new forms of interaction and teaching methods, which helps to improve their methodological competence. Future research could focus on analyzing the use of information and communication technologies to support pedagogical partnerships.

Keywords— teachers, Pedagogy of Partnership, professional competence, educational environment, general secondary education institution, methodological competence, interaction, educational process participants.

I. Introduction

Pedagogical partnership in schools around the world is implemented through various types of work. For example, in Finland, teachers actively collaborate with parents in school council meetings, where they discuss curricula and plans, and consider parents' opinions in the decision-making process, [1]. In the United States of America, much attention is paid to parent associations and volunteerism, which help organize school activities and support students, [1]. These examples indicate various aspects of pedagogical partnership, which contribute to the improvement of the quality of education and the joint responsibility of all participants in the educational process.

Pedagogical partnership includes such aspects as joint planning and evaluation of education, involvement of parents in the educational process, openness to new ideas and innovations, and development of effective communication between all parties.

According to [2], [3], the pedagogical partnership creates favorable conditions for teachers' competence development, improves the quality of education, and forms a positive educational atmosphere that contributes to the comprehensive development of students. This determines the relevance of the raised problem and the need for its research at the empirical level.

Therefore, this study aims to determine whether compliance with the pedagogical partnership principles in the educational process affects teacher competence development.

The main objectives arising from the relevance of the issue under research are:

− analyze whether seniority affects the level of teachers' professional competence;

− conduct a diagnostics of the level of the teacher's professional competence before and after the experiment;

− determine teachers' difficulties and professional deficits before and after the experimental study.

The research hypothesis is the assumption that dialogue-interaction-respect, the key elements of the pedagogical partnership, are a stimulating factor for the development of the teacher's professional competence.

II. Literature Review

Pedagogical partnership is a concept that involves joint activity and interaction between various participants in the educational process to achieve common goals and improve the quality of education. This partnership is based on mutually beneficial cooperation, mutual understanding, respect, and mutual trust between all parties, [1]. Pedagogical partnership approaches offer a form of teacher-student relationship that combines the principles of active student involvement, inclusive learning, and democratic ways of knowing and being, [4], [5]. The Pedagogy of Partnership also comprises positive peace, or the idea that peace is more than the absence of war, [6], [7]. This pedagogy is also called collaborative pedagogy, [8].

The basis of the Pedagogy of Partnership (Fig. 1) is the humane attitude of the teacher to children, which is combined with respect for their thoughts and wishes, [9]. In the Pedagogy of Partnership, students become active subjects of learning, and teachers act as mediators, facilitators, and mentors, [10].

Pedagogical partnerships involve various stakeholders such as teachers, students, parents, school administration, community, and other stakeholders, [11]. Each of these parties has its own goals, expectations, and resources, and they work together to achieve the best learning outcomes for students, [12].

Partnership pedagogy is based on the principles of voluntariness, equality, democracy, and respect for the individual in terms of the outlined norms (rules, requirements, duties). Each party values and foresees active cooperation in the performance of joint educational tasks under each party's responsibility for the obtained results, [13].

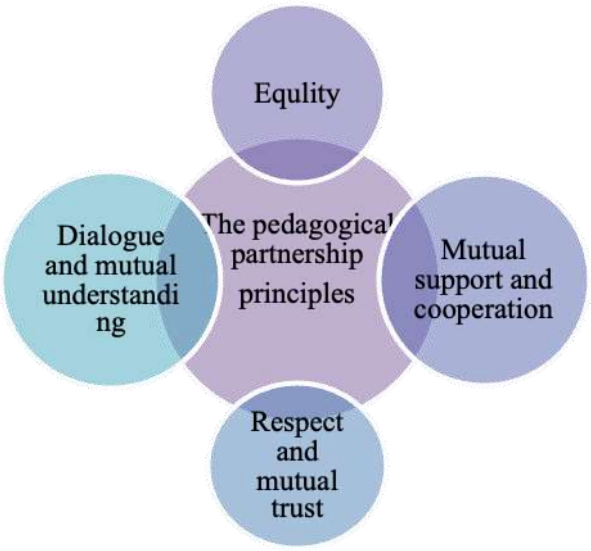

Fig. 1 Basic principles of pedagogical partnership

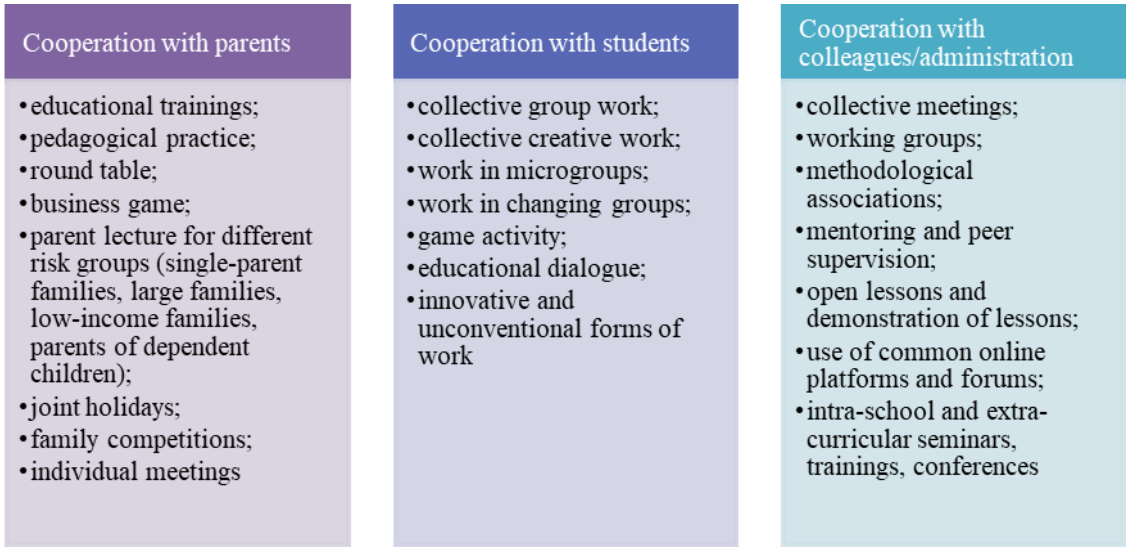

Fig. 2 Basic forms of work within the framework of the pedagogy of partnership

Author in [14], notes that the Pedagogy of Partnership is a purposeful activity, the subjects of which are interested in achieving its results, namely: development of the general secondary education system; further democratization of management of the institutions of this system, development of mechanisms of their state and public management.

Therefore, the main idea of the Pedagogy of Partnership is that each student is a unique individual with his/her abilities, interests, and needs, [15]. The Pedagogy of Partnership contributes to the creation of a favorable atmosphere in the classroom, where all students feel heard and important, [16].

The Pedagogy of Partnership encourages teachers to actively use available technologies, it sounds extremely simple, but this approach is quite difficult to achieve, [17]. The main forms of work provided by the Pedagogy of Partnership are proposed in Fig. 2 based on academic and methodological literature, [18], [19].

The radical renewal of the methodological "arsenal" of the formation of a new, mobile, and universal image of the teacher based on the Pedagogy of Partnership is a current urgent task, [20].

The literature review gave grounds to conclude that research on the Pedagogy of Partnership is currently actively being conducted in Ukraine with the introduction of the New Ukrainian School. The studies are mainly focused on the theoretical aspects of the problem or focused on the study of teacher-student interaction. However, research on the impact of the Pedagogy of Partnership principles on teachers' professional development has not been conducted.

III. METHODS AND MATERIALS

A. Research Design

The study was organized in three stages from May 2022 to May 2023. The first (preparatory) stage involved the selection, substantiation, and theoretical understanding of the issue under research; the development of a program for introducing the Pedagogy of Partnership in general secondary education institutions, guidelines, and methods of conducting experiments. The second (main) stage provided for conducting an experimental measurement of the components of teachers' professional competence; implementation of the pedagogical partnership program in general secondary education institutions; conducting post-experimental measurement. The third (final) stage involved data processing, interpretation of statistical indicators; comparison of the obtained results with the expected ones; development of recommendations, and presentation of research results.

B. Sample

The study involved 48 general secondary education institutions of the Rivne, Kyiv, and Zhytomyr.

A total of 926 teachers took part in the diagnosis: primary school teachers, Ukrainian language and literature, mathematics, informatics, history, English, physics, chemistry, biology, and geography teachers. Table 1 shows the distribution of teachers by subject.

Teachers are divided into groups: a) up to 5 years of experience; b) 5-10 years of experience; c) 10-20 years of experience; d) more than 20 years of experience; e) experience is not specified. The distribution of teachers by work experience is shown in Table 2, Fig. 3.

Table 1. Number of participants by subjects

Subject	Number of participants on the subject	Percentage of the total
Primary school	359	38.8
Ukrainian Language	137	14.8
Literature	6	0.6
Mathematics	130	14
Computer Science	39	4.2
History	70	7.6
English Language	26	2.8
Geography	58	6.3
Biology	55	5.9
Chemistry	26	2.8
Physics	20	2.2
Total	926 participants	100%

Table 2. Distribution of teachers by work experience

Subject	up to 5 years of experience	5-10 years of experience	10-20 years of experience	more than 20 years of experience	experience is not specified
Primary school	48	47	47	178	39
Ukrainian Language	19	12	22	73	11
Literature	1	0	1	4	0
Mathematics	13	14	15	64	24
Computer Science	4	9	13	10	3
History	14	3	9	32	12
English Language	7	5	5	9	0
Geography	2	5	12	34	5
Biology	3	2	11	28	11
Chemistry	0	4	5	17	0
Physics	0	1	2	16	1
Total	111	102	142	465	106
Distribution in %	12%	11%	15%	50%	12%

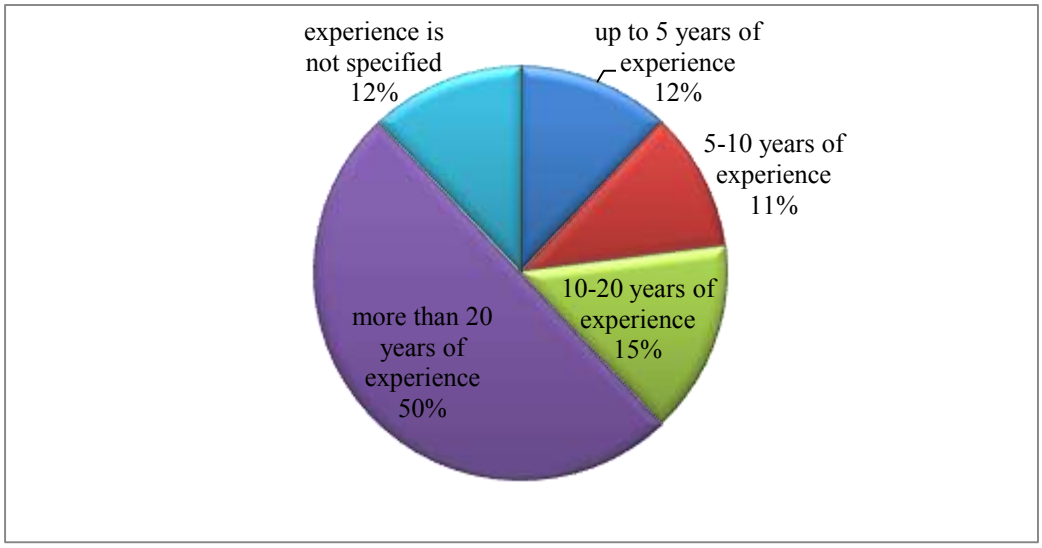

Fig 3. Distribution of teachers by work experience

C. Methods

The professional competence level was diagnosed by using the Marzano Teacher Evaluation Model (2017) and the Classroom Assessment Scoring System (CLASS) (2004). There are alternative methods, for example, "Pedagogical diagnosis of teachers (L.O. Savchenko, 2014)" and the video assessment tool DiKoBi Assess, etc., but they are not universal and usually specific professional standards of teachers in different countries.

Psychometric testing of the diagnostic tools involved checking reliability and validity. The questionnaire was offered to respondents twice at intervals of 2–3 weeks to measure retest reliability. The rs indicator was 0.821 at a significance level of $p<0.01$, which indicates good retest reliability. The reliability of individual items of the test was determined in addition to checking retest reliability.

Diagnostic work to identify the level of professional (core and methodical competence) consisted of tasks with a choice of answers and tasks with a detailed answer. A total of 4

diagnostic sections were selected: the content of the educational subject; planning of training classes; teaching methodology and technology; evaluation of students' performance, analysis, and use of evaluation results to improve the quality of education. There was a total of 100 questions in the questionnaire, divided into 5 blocks. It took 180 minutes to complete it.

The following levels of professional (core and methodological) competencies were identified when analyzing the results of diagnostics based on correctly completed assignments:

0-30% – insufficient,
31-60% – satisfactory,
61-70% – basic,
71-80% − higher,
81-100%– high.

In addition to tasks to identify the level of professional competence, teachers were offered a questionnaire for analyzing their pedagogical activity, which included the following sections: core competence, methodical competence, communicative competence, psychological and pedagogical competence, and ICT competence. There was a total of 60 questions in the questionnaire, which were distributed according to the specified blocks. Answers were evaluated on a yes-no scale.

D. Tools

The work was placed in the personal account of the diagnostic participant in the Moodle system, for which each teacher was sent a login and password and instructions for completing the diagnostic by e-mail. The SPSS 17.0 package was used for statistical data processing, and the Pearson Chi-Squared Test was used to compare the average values of two samples. The Pearson correlation coefficient was used to check the relationship between work experience and the level of professional competence.

E. Ethical criteria

The respondents' participation in the study was completely voluntary, without any pressure or influence. Participants were informed about the aims and progress of the study and could withdraw at any time without negative consequences. The information collected during the research was confidential. The researchers ensured that participants' data would not be disclosed or used without their written permission.

IV. RESULTS

Table 3 presents the distribution of teachers by levels of core competencies, Table 4 shows the distribution of teachers by levels of methodical competencies at the pre-experimental stage.

Table 3. The level of teachers' core competencies before the experiment

Subject	Insufficient level, %	Satisfactory level, %	Basic level, %	Higher level, %	High level, %
Primary school	0	4	9	30	57
Ukrainian Language	1	4	11	15	69
Literature	0	17	0	0	83
Mathematics	1	28	17	27	27
Computer Science	3	41	13	23	20
History	0	20	26	24	30
English Language	0	0	8	23	69
Geography	0	19	10	31	40
Biology	5	27	29	25	14
Chemistry	8	23	19	23	27
Physics	10	40	20	15	15

Table 4. The level of teachers' methodological competence before the experiment

Subject	Insufficient level, %	Satisfactory level, %	Basic level, %	Higher level, %	High level, %
Primary school	4	11	20	55	20
Ukrainian Language	5	20	21	23	31
Literature	17	17	32	17	17
Mathematics	9	29	14	12	36
Computer Science	26	46	5	3	20
History	16	41	24	9	10
English Language	4	4	12	27	53
Geography	9	38	16	16	21
Biology	14	29	18	16	23
Chemistry	15	12	35	26	12
Physics	15	5	10	20	50

The results of diagnostics were analyzed depending on teaching experience (Table 5).

Table 5. Distribution of teachers by teaching experience before the experiment

Level	Up to 5 years		5-10 years		10-20 years		More than 20 years	
	Core, %	Method.%	Core, %	Method.%	Core, %	Method.%	Core, %	Method.%
Insufficient	2.7	9	1	10.8	0.7	10.6	0.2	5.8
Satisfactory	15.3	11.7	11.8	24.5	17.6	22.5	12	20.4
Basic	16.2	20.7	10.8	17.6	11.3	14.8	14	20.2
Higher	18	30.6	24.5	25.5	25.4	26.7	27.5	27.5
High	47.8	28	51.9	21.6	45	25.4	46.3	26.1

The results of the conducted diagnostics show that teachers of all subjects have developed core competencies at a higher level, while methodical competencies — at a lower level.

The self-assessment revealed the following difficulties and professional deficits of teachers.

Primary School teachers note the difficulties in organizing the joint activities of students to achieve the goals of project and research activities (41%), preparing students for project and research competitions (40%), generalizing pedagogical experience (36%) and publicly presenting the results of their work (67%). The use of cloud technologies to organize joint work of students (51%) and the use of digital services to organize video conferencing with students and parents (41%) also cause difficulties.

Ukrainian Language and Literature teachers also experience difficulties in organizing students' joint project activities (45%), preparing students for project and research competitions (41%), generalizing pedagogical experience (36%), and publicly presenting the results of their work (46%).

Mathematics teachers are hesitant to solve specific tasks of external examinations (60%), generalize pedagogical experience (40%), and publicly present the results of their activities (62%), as well as in the use of cloud technologies (46%).

Computer Science teachers have difficulties with preparing schoolchildren for contests (50%), and presenting the results of their work is difficult (50%).

History teachers also have difficulties with preparing students for contests (38%), using non-standard assignments during lessons (40%), presenting the results of their work (48%), and using cloud technologies to organize students' joint work (50%).

Geography teachers experience difficulties in preparing for project and research contests (41%), and in publicly presenting the results of their work (47%).

Biology teachers note difficulties in the analysis of educational material from the perspective of modern achievements of science (38%), the preparation of schoolchildren for contests (33%), and the organization of project research activities (36%). Generalization of pedagogical experience (36%), and public presentation of the results of their work (51%) also cause difficulties. Teachers note difficulties in creating a situation of success for each student during classes (38%) and in developing educational assignments that would contribute to students' development (38%).

Chemistry teachers experience difficulties in preparing students for contests (54%), and using cloud technologies to organize joint work of students (54%).

Physics teachers experience difficulties in preparing projects and research competitions (37%), contests (47%), in public presentations of the results of their work (53%), and using cloud technologies to organize joint work of students (72%).

Table 6 shows the distribution of core competence levels, Table 7 shows the distribution of teachers' methodical competence levels after the experiment.

Table 6. The level of teachers' core competencies after the experiment

Subject	Insufficient level, %	Satisfactory level, %	Basic level, %	Higher level, %	High level, %
Primary school	0	4	8	29	59
Ukrainian Language	1	3	11	16	69
Literature	0	16	0	0	84
Mathematics	1	28	17	27	27
Computer Science	3	36	10	21	30
History	0	17	21	19	43
English Language	0	0	7	24	69
Geography	0	19	10	31	40
Biology	5	26	26	27	16
Chemistry	8	23	19	23	27
Physics	10	38	20	16	16

Table 7. The level of teachers' methodological competencies after the experiment

Subject	Insufficient level, %	Satisfactory level, %	Basic level, %	Higher level, %	High level, %
Primary school	3	10	17	46	24
Ukrainian Language	5	13	12	14	56
Literature	17	17	31	17	18
Mathematics	9	20	14	12	45
Computer Science	22	43	5	5	25
History	15	41	24	9	11
English Language	4	4	7	22	63
Geography	9	38	16	16	21
Biology	14	29	18	16	23
Chemistry	15	12	35	26	12
Physics	13	5	10	20	52

The results of diagnostics after conducting the experimental work showed that all indicators of methodological competencies increased significantly compared to the pre-experimental measurements.

The percentage of participants who showed a high level of methodological competence increased the most among English Language teachers (by 10%), Ukrainian Language and Literature (by 14%), and Mathematics (by 9%). The level of methodological competence of Geography, Biology, and Chemistry teachers remained unchanged.

As for core competencies, the high level indicator increased the most among Computer Science (10%), and History teachers (13%). The level of core competencies of Mathematics, Geography, and Chemistry teachers remained unchanged.

The results of diagnostics were analyzed depending on the teaching experience (Table 8) after the experiment. Teachers with up to 5 years of experience and 5 to 10 years of teaching experience are the most adapted to changes.

Table 8. Distribution of teachers by teaching experience after the experiment

Level	Up to 5 years		5-10 years		10-20 years		More than 20 years	
	Core, %	Method.%	Core, %	Method.%	Core, %	Method.%	Core, %	Method.%
Insufficient	2,7	9	0	8,5	0,7	10,6	0,2	5,8
Satisfactory	12,3	9,2	9,8	22,3	17,6	22,5	12	20,2
Basic	14,2	18,5	8,8	17,3	11,3	14,8	14	20,2
Higher	16,7	27,8	23,7	21,2	25,4	26,7	26,3	25,5
High	54,1	35,5	57,7	30,7	45	25,4	47,5	28,3

Table 9. Correlation matrix of teaching experience and the level of teachers' competence after the experiment

	Level	Up to 5 years	5-10 years	10-20 years	More than 20 years
Level	1	0.825	0.649	0.372	0.493
Up to 5 years	0.825	1	0.988	0.978	0.944
5-10 years	0.649	0.988	1	0.961	0.942
10-20 years	0.372	0.978	0.961	1	0.962
More than 20 years	0.493	0.944	0.942	0.962	1

Indicators of a high level of methodological competence in these groups increased by 7.5% and 9.1%, respectively, and core competencies — by 6.3% and 5.8%. The lowest rates among teachers with more than 20 years of experience are 2.1%. for the methodical competence and 1.2% for the core competence. The distribution of teachers with 10 to 20 years of experience remained unchanged.

We will make a correlational analysis between the teaching experience and the level of teachers' competence using the Pearson correlation coefficient. A correlation matrix was obtained by applying correlation analysis to Table 8. Values on the diagonal will be 1 because this is the correlation of each variable with itself. Table 9 shows the correlation matrix.

According to the obtained data, we can see that the correlation coefficient between the experience of teachers and the level of their competence is quite high. The highest correlation is observed between the level of competence and experience from 5 to 10 years (0.988). This may indicate that an increase in experience in this range is often accompanied by an improvement in the competence level. In general, the results of the correlation analysis give grounds to state that there is a statistically significant relationship between the teaching experience and the level of teachers' competence. However, it is important to note that correlation does not always mean causation, other factors can also influence the level of teachers' competence.

Next, we compare the data between the levels of teachers' competence before and after the experiment using the Pearson Chi-Squared Test.

The obtained chi-square values for both tables (48.257 and 40.146) of the levels of teachers' core competencies do not exceed the critical chi-square value (26.296) for the significance level of 0.05 and 16 degrees of freedom. Therefore, there is no statistically significant relationship between the level of subject competencies of teachers before and after the experiment at the significance level of 0.05.

The obtained chi-square values for both tables (54.699 and 25.537) of the levels of teachers' methodological competencies exceed the critical chi-square value (26.296) for the significance level of 0.05 and 16 degrees of freedom. Therefore, we can assume that there is a statistically significant relationship between the level of teachers' methodological competence before and after the experiment. The chi-square values indicate that the difference between the observed and expected frequencies in the tables cannot be explained by chance. In other words, changes in the level of methodological competencies of teachers did not occur randomly but were statistically significant.

Self-assessment revealed the following changes in the difficulties and professional deficits of teachers.

Primary school teachers did not note any difficulties in organizing joint activities of students to achieve the goals of project research activity (the indicator decreased from 41% to 12%), generalization of pedagogical experience (the indicator decreased from 36% to 24%).

Ukrainian Language and Literature teachers also experience fewer difficulties in organizing joint project activities of students (the indicator decreased from 45% to 19%), generalizing pedagogical experience (the indicator decreased from 36% to 27%).

Mathematics teachers became less hesitant to generalize their teaching experience (the indicator decreased from 40% to 27%).

Computer Science teachers have less difficulty presenting the results of their work (the indicator decreased from 50% to 39%).

English Language teachers have fewer difficulties with using non-standard tasks in lessons (the indicator decreased from 40% to 27%), organizing students' joint work (the indicator decreased from 50% to 24%)

Geography teachers experience fewer difficulties when preparing for project and research contests (the indicator decreased from 41% to 28%).

Biology teachers note fewer difficulties in the analysis of educational material from the perspective of modern achievements of science (the indicator decreased from 38% to 27%), the organization of project and research activities (the indicator decreased from 36% to 30%). Chemistry teachers experience less difficulty using cloud technologies to organize students' collaborative work (the indicator decreased from 54% to 45%). Physics teachers experience fewer difficulties when organizing students' joint work (the indicator decreased

from 72% to 56%).

V. DISCUSSION

The obtained results give grounds to state that the introduction of the Pedagogy of Partnership principles into the educational process has a positive effect on the development of teachers' professional competence, in particular on the development of its methodological component. This can be confirmed by the fact that teachers use new forms of interaction and teaching methods when implementing the Pedagogy of Partnership. The hypothesis of our study was partially confirmed.

Our findings are similar to [21], were concluded that partnerships between teachers, students, and parents contribute to the formation of sustainable competencies. Was noted that the Pedagogy of Partnership is also effective for STEM education, [22], and that the Pedagogy of Partnership, as one of the directions of pedagogy, is an effective means of achieving educational goals based on the active and voluntary interaction of participants in the educational process, which is confirmed by our results of self-assessment of teachers, [23].

The analysis of questionnaires regarding the difficulties that arise in the professional activity of teachers determined that the Pedagogy of Partnership reduced difficulties in achieving the goals of project research activity, and generalization of pedagogical experience. The majority of teachers began to experience fewer difficulties in organizing students' joint work. Thus, primary school teachers did not note difficulties in organizing students' joint activities (the indicator decreased from 41% to 12%), while among Ukrainian language and literature teachers, the indicator decreased from 45% to 19%).

This is also explained by the change in the teacher's role not as a transferrer of knowledge, but as a partner, a coach, [24], which makes it possible to establish "subject-subjective" relationship between teacher and students, [25]. Was also concluded that the cooperation pedagogy gave an impetus to the creative activity of many teachers, and initiated the activity of author schools, [26]. This also confirms the opinion in [27], that Ukraine is currently on a difficult path to establishing democratic values. In contrast to similar studies, in particular from [21], [22] and [23], our study is based on empirical evidence of the development of professional competence of teachers of various subjects. We specified the difficulties and the impact of partnership pedagogy on teachers' professional activity.

According to the obtained statistics, the correlation coefficient between the teaching experience and the level of teachers' competence is quite high. Teachers with 5 to 10 years of experience are the most adaptable to changes (0.988). An increase in experience may be one of the factors that contribute to the improvement of the level of competence, but there may be other factors, such as professional training, methodical support, or individual characteristics of the teacher, which also affect the level of competence. This is also confirmed by the theoretical findings in [28], [29].

A. Research limitations

The main limiting factor of the study is the limited period of the experiment (one academic year). However, the research can be replicated over many years as future work and will determine pedagogical partnerships' sustainability and long-term effects on developing teachers' professional competence.

B. Recommendations

To further develop this issue, we recommend dividing teachers by qualification category according to the locality (city/village) where the teachers work.

VI. CONCLUSIONS

In the current educational context, which is focused on the development of students' activity, independence, and critical thinking, the Pedagogy of Partnership becomes a key factor in successful learning. Dialogue, interaction, and respect are integral components of this approach, which contribute to the creation of a favourable environment where students are actively involved in the learning process build meaningful learning and together with the teacher.

The implementation of the Pedagogy of Partnership principles in the educational process is a significant factor contributing to the improvement of the teachers' professional competence. This conclusion is based on objective evidence and research results.

Implementation of the Pedagogy of Partnership involves active interaction between teachers, students, and parents. This approach helps to change the traditional role of the teacher as a transferrer of knowledge to the role of a partner who builds knowledge together with students and parents. Such joint activity encourages the teacher to find new forms of interaction and teaching methods, expands the arsenal of pedagogical tools, and contributes to the development of the methodological component of teachers' competence.

The implementation of the Pedagogy of Partnership principles promotes active and voluntary interaction between the participants of the educational process, which positively affects the achievement of educational goals. This is confirmed by the results of teachers' self-assessment. This approach contributes to the expansion of the methodological tools, active interaction, and exchange of experience between all participants of the educational process, thereby promoting professional growth and the achievement of a qualitatively new level of education.

The obtained results can be used in schools, universities, and other educational institutions to support the development of pedagogical partnerships, as well as in professional development programs for teachers to improve their qualifications. The obtained results can become the background for further research, development of new methodologies and approaches.

Future research can focus on the effectiveness of virtual communication tools in supporting the open exchange of information between all participants in the educational process.

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