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Features of the Development of Linguistic and Communication Competences of Future Foreign Language Teachers

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Abstract---The relevance of the study is determined by the fact that the professional competence of a teacher constitutes a dynamic combination of knowledge, abilities and practical skills, ways of thinking, professional, ideological and civic qualities, moral and ethical values. The linguistic competence of the teacher depends entirely on the possibilities of professional growth and the dynamics of the development of professional and communicative competences. The novelty of the study is determined by the fact that in professional activity the teacher acts as an active subject of communication: transmits and accepts information from students, colleagues and parents, strives for the maximum realisation of the abilities of each student and ensuring their emotional comfort. The authors of this study have determined that one of the primary tasks of higher pedagogical education lies in the development of professional and pedagogical communicative competence of a teacher. The practical significance of the study is determined by the fact that professional and pedagogical communicative competence acts as a spiritual and moral factor and the scientific content of the educational process, where a major role is played by the teacher's knowledge, humanity,

spiritual generosity, as well as the desire to understand and help the student.

Keywords---competence, experimental work, foreign language, intercultural communication, linguistic and communication, professional development, teacher.

Introduction

For the implementation of the humanistic and personal technology of the development of professional and pedagogical communicative competence, it is important to determine the criteria for the development of professional and pedagogical communicative competence, as well as to determine the indicators of these criteria (Domingo et al., 2020). Criterion (from the Greek κριτής) is a sign by which the achievement of a certain result of the functioning or development of the individual is evaluated by the corresponding indicators (Xu et al., 2019). The criterion serves as the basis for evaluation, definition, or classification (Biktagirova & Khitryuk, 2016). The criteria are based on the goal of humanistic and personal technology for the development of professional and pedagogical communicative competence of the future teacher; scientific approaches principles (Prendes et al., 2010).

Comparative analysis of different approaches to the problem of development of professional and pedagogical communicative competence of future teachers allows identifying the criteria and indicators of development of professional and pedagogical communicative competence of future teachers. Furthermore, the study engaged in a theoretical analysis of the pedagogical, psychological, and methodological literature, which made it possible to identify the presence of two considerable components of the development of professional and pedagogical communicative competence: theoretical and practical (González et al., 2015). Based on the indicative version of the criteria for the development of professional and pedagogical communicative competence, a survey was carried out (Casillas et al., 2020). The final version contains parameters that receive at least 75% of positive statements (Del Moral et al., 2016). According to the survey results, three criteria were identified (Yang, 2018). The first combines the features of the theoretical component, the second corresponds to the theoretical and practical component, the third contains highly specific signs of the development of professional and pedagogical communicative competence of future teachers (Palomino, 2018).

Criteria:

- Criterion I – motivational and value-based;
- Criterion II – cognitive;
- Criterion III – activity-based.

The criterion structure of the development of professional and pedagogical communicative competence of the future teacher is presented in Table 1.

Table 1
Criteria for the development of professional and pedagogical communicative competence of the future teacher

Criterion name	Indicators	Methods used for evaluation
Motivational and value-based	<ul style="list-style-type: none"> • the presence of motives and needs for the development of professional and pedagogical communication skills; • the presence of a stable interest in pedagogical communication, a stable need for systematic communication with children; • Aspiration for self-improvement and increasing the level of development of professional and pedagogical communicative competence. 	Test for determining the need for communication; self-assessment of professional and pedagogical motivation; Methodology "Scale of assessment of the need for achievements"; Observation
Cognitive	<ul style="list-style-type: none"> • Knowledge of the structure of the communication act; • Knowledge of ways, methods, and techniques of organising communicative pedagogical interaction; • Knowledge of moral and ethical norms and rules of professional communication; • Knowledge of pedagogical communication styles. 	Modular control; Individual research assignments
Activity-based	<ul style="list-style-type: none"> • The ability to freely use professional and pedagogical vocabulary in a particular situation; • The ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication. 	The methodology of communicative social competence (CSC); Questionnaire "How to determine the style of pedagogical communication?" Diagnostics of the teacher's dominant communication style; Expert assessment method

Source: [Chao \(2015\)](#).

The formulated criteria and their indicators correspond to the general model of humanistic and personal technology for the development of professional and pedagogical communicative competence of future teachers ([Monthienvichienchai](#)

et al., 2002). The first criterion – motivational and value-based – is formulated to determine the professional and social communicative competence of future teachers; the second – cognitive – professional and methodological communicative competence; and the third – activity-based – professional and creative communicative competence of future teachers. The quantitative assessment of each parameter is carried out according to specially developed scales, which consist of a number of discrete numbers (from 1 to 5), each of which corresponds to a certain qualitative state of a particular characteristic of the structure of the analysed activity. Therewith, the number “5” expresses the manifestation of the parameter at the highest level, “3” – at the average, “1” indicates the absolute absence of the manifestation of the parameter. The use of this system, adapted to this study, ensures the achievement of sufficient differentiation of individual characteristics of teachers' activities (Boyatzis, 1993; Wass et al., 2001).

The motivational and value-based criterion allows determining the presence of motives and needs for the development of professional and pedagogical communication skills, identifying the level of need for communication, the presence of a value attitude and the development of reflexive skills in professional activity, the level of motivation for achievement in communication (Ritter & Gemünden, 2004; Hayakawa et al., 2016). The cognitive criterion allows determining the level of quality of knowledge of the structure of the communicative act, means, methods, and techniques of organising communicative pedagogical interaction, moral and ethical norms and rules of professional communication and knowledge of the styles of pedagogical communication. The activity criterion allows determining the presence of personal qualities that are expressed in the social orientation of the individual during the implementation of professional and pedagogical communication; the ability to freely use vocabulary in a particular situation, knowledge of pedagogical communication styles; mastering a high level of professional and pedagogical communicative competence (Blokesch, 2016; Koester & Lustig, 2015).

Material and Method

Indicators of the levels of development of the motivational and value-based criterion Del et al., (2018):

- The presence of motives and needs for the development of professional and pedagogical communication skills: high level – the need to interact with others, high motivation in communication, the desire to listen and help the interlocutor; awareness of the importance of professional and pedagogical communication; awareness of the value of professional and pedagogical communicative competence in professional activities; medium level – the presence of an unstable need for communication, low motivation in communication, the desire to express only personal emotions and experiences; low level – no need for communication, restraint, and lack of sincerity in communication.
- The presence of a stable interest in pedagogical communication, a stable need for systematic communication with children: high level – understands the importance of developing the necessary professional competences and has the proper level of development of reflexive skills in

professional activity, the presence of interest, the desire to achieve high results in communicative interaction; medium level – partially understands the importance of developing the necessary professional competences and has not quite the proper level of development of reflexive skills in professional activity, the desire to realise their professional potential and acquire new skills and abilities is insignificant; low level – only partially understands the importance of developing the necessary professional competences and lacks reflexive skills in professional activity, does not seek to acquire professional skills and abilities in communicative interaction.

- The desire for self-improvement and improvement of the personal level of development of professional and pedagogical communicative competence: high level – has highly developed motives and needs for the development of personal professional and pedagogical communicative skills; medium level – has separate, but developed motives and needs for the development of personal professional and pedagogical skills; low level – does not see the need for special development of personal professional and communicative skills.

Indicators of the levels of development of the cognitive criterion:

- Knowledge of the structure of the communicative act: high level – has knowledge of the structure of the communicative act; medium level – has partial knowledge of the structure of the communicative act; low level – has fragmentary knowledge of the structure of the communicative act.
- Knowledge of means, methods and techniques of organising communicative pedagogical interaction: high level – has knowledge of the means, methods, and techniques of organising communicative interaction; medium level – has partial knowledge of the means, methods, and techniques of organising communicative interaction; low level – has no knowledge of the means, methods and techniques of organising communicative interaction.
- Knowledge of moral and ethical norms and rules of professional communication: high level – has a deep knowledge of the norms and rules of professional communication; medium level – has partial knowledge of the norms and rules of professional communication; low level – has almost no knowledge of the norms and rules of professional communication;
- Knowledge of pedagogical communication styles: high level – has knowledge of the style of pedagogical communication; medium level – has partial knowledge of the style of pedagogical communication; low level – has no knowledge of the style of pedagogical communication.

Indicator of the levels of development of the activity-based criterion [Pérez \(2010\)](#):

- Ability to freely use professional and pedagogical vocabulary in a particular situation: high level – fluent in professional and pedagogical vocabulary and uses it in accordance with a specific situation; medium level – superficial proficiency in professional and pedagogical vocabulary and its partial use in a particular situation; low level – no knowledge of

professional and pedagogical vocabulary and does not use it in a particular situation.

- Ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication: high level – has the ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication; medium level – insufficient level of development of the ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication; low level – fragmentary ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication.

Results and Discussion

The level of development of professional and pedagogical communicative competence of future teachers was identified with the help of the following methods and techniques. To take data on the indicators of the motivational and value-based criterion:

- Test for determining the need for communication.
- Self-assessment of professional and pedagogical motivation.
- Methodology “Scale of assessment of the need for achievements”.

To get data on the indicators of the cognitive criterion:

- Modular control.
- Individual research assignments.

To get data on the indicators of the activity-based criterion:

- Methodology of communicative social competence (CSC).
- Diagnostics of the teacher's dominant communication style.
- Questionnaire “How to determine the style of pedagogical communication?”
- Expert assessment and observation method.

Test for determining the need for communication. The purpose of the test is to identify the level of need for communication. The test contains 33 statements that correlate with the characteristics of two opposite groups: with a high and low level of need for communication. The analysis of the test indicates the following levels: low, below average; medium; above average; high. Diagnostics of communicative social competence (Flores & Roig, 2019; Hartono et al., 2021). This technique helps to get a more complete picture of the student, making a forecast of the success of his or her professional activity. The questionnaire includes 100 statements arranged in a circular order to simplify their counting using a stencil.

There are three alternative answers for each question (Shirikhani & Fahim, 2011; Figlio, 1997). The method is designed to study individual personality traits. The method makes provision for the assessment of the level of communicative and social competence on 7 scales (factors): factor A (high score + A – open, easy, sociable; low score – unsociable, closed); factor B (high score – with developed logical thinking, quick-witted; low score – lack of logical thinking); factor C (high score – emotionally stable, mature, calm; low score – emotionally unstable, uncertain, susceptible to feelings); factor D (high score – cheerful, carefree, cheerful; low score – silent, serious); factor K (high score – sensitive, drawn to others, with artistic thinking; low score – self-reliant, realistic, rational); factor M (high score – prefers personal solutions, independent, self-oriented; low score – dependent on the group, convivial, follows public opinion); factor H (high score – self-controlling, able to subordinate oneself to the rules; low score – impulsive, disorganised). Level assessment of factors (in points): 16-20 – maximum level; 13-15 – predominant distinctness of factors; 8-12 – average level; 5-7 – low level.

Self-assessment of professional and pedagogical motivation. This method allows determining the stage at which the student is on the motivational ladder. Namely, whether there is indifference, or occasional superficial curiosity, or there is interest, or developing curiosity, or a functional interest is developing, or the top is reached – the professional need to consciously study pedagogy and master the basics of pedagogical skill. The methodology consists of 18 statements. As a result of the study, the dominant scales are determined: professional need, functional interest, developing curiosity, interest, episodic curiosity, indifferent attitude. Expert analysis of the methodology helps to determine the high, medium, and low level of professional and methodological communication (Zeichner, 2005; Maba et al., 2018; Hepsiba et al., 2017).

Methodology “Scale of assessment of the need for achievements”. The methodology is aimed at studying the features of achievement motivation, that is, the desire to always achieve the goals set. The methodology consists of 22 statements and a key for calculating the results. The questionnaire is recommended for studying the impact of achievement motivation on performance, as well as for individual counselling. Motivation for achievement – the desire to improve results, dissatisfaction with current achievements, perseverance in achieving goals, the desire to achieve what has been planned – is one of the main characteristics of the individual, which affects the entire human life. Numerous studies have proved a close relationship between the level of achievement motivation and success in life. And this is no coincidence, because it is proven that people with a high level of this very motivation are actively seeking situations of achievement, are confident in a successful outcome, are looking for information to judge their success, are ready to take responsibility, are resolute in uncertain situations, express perseverance in striving for goals, enjoy solving interesting problems, do not get lost in a situation of competition, express great perseverance when encountering obstacles.

The test questionnaire will help to measure the level of achievement motivation. It contains statements that differentiate people from two opposite groups: those with high and low levels of the need for achievement. Questionnaire “How to determine the style of pedagogical communication?” and diagnostics of the dominant

communication style of the teacher (Parker, 2014; Maledo & Edhere, 2021). The proposed questionnaire and methodology allow determining the style of pedagogical communication, since this pedagogical category is largely described by relationships with students. The style of communication that the teacher has chosen for themselves plays an important part in relations with students, because the teacher is responsible for creating favourable conditions for the psychological comfort of the child. At present, there is a great variety of styles of pedagogical communication (from subordination to partnership and lack of directed influence), which determines the complexity and diversity of the teacher-student relationship; this study focuses on the most common styles.

- Authoritarian: a tendency to an imperious tone, crude remarks on the part of the teacher. The authoritarian teacher determines the overall goals of the work, gradually indicates the methods of completing the task, determines who will work with whom, while demonstrating the technique once, believes that they have done their job, and then it remains only to evaluate the success of each student. Any initiative on the part of students is considered as a manifestation of undesirable arbitrariness. Furthermore, the authoritarian leader, as a rule, subjectively assesses the success of his or her students, making comments not so much about the work as about the personality of its performer.
- Democratic: in this style, the facts are first evaluated, not the individual. The main feature of this style of communication is that the class actively takes part in the discussion of the entire course of future work and its organisation, and the teacher only encourages the independence of students, trying to take the position of “first among equals”.
- Friendliness and passion for working together: two communication styles that are closely related. Undoubtedly, friendly communication is the most important regulator of communication in general, and business pedagogical communication in particular. This is a stimulator of the development and fruitfulness of the teacher's relationship with the students. Passion for a common cause is a source of friendliness and at the same time friendliness itself, multiplied by interest in work. However, one should not forget that friendliness should be pedagogically appropriate, not contradict the general system of relations between the teacher and children. This style of communication is considered as a prerequisite for successful joint educational activities.
- Communication-flirting: due to the teacher's inability to organise productive communication. It arises as a result of the teacher's lack of understanding of the responsible pedagogical tasks facing them, the fear of communicating with the class and at the same time the desire to establish contact with students, as well as the lack of communication skills.
- Communication-distancing: distance is an indicator of the leading role of the teacher, based on their authority, but it should stem from the general logic of the relationship between the student and the teacher, and not be dictated by the teacher as the basis of the relationship. Communication-distancing to a certain extent constitutes a transitional stage to such a negative form of communication as communication-intimidation.
- Communication-intimidation – this style is associated with the inability to organise productive communication based on passion for a common cause.

Such communication not only fails to establish a communicative atmosphere that ensures creative activity, but, on the contrary, regulates it, orienting children not on what should be done, but on what should not be done, thereby depriving pedagogical communication of friendliness.

- Supportive: being patient with people, a person born to inspire, which makes such person the perfect candidate to turn to for help. Shows loyalty and care for people, giving someone else the function of risk. Is valued as a connoisseur of the rules and traditions, as well as for paying special attention to involving people in decision-making.

Undoubtedly, the professional level of training, the characteristics of the personality and temperament of the teacher substantially affect the style of their communication. However, despite everything, it should be remembered that the best assistants that help everyone find their personal unique style of communication with students are experience, moral values, and personal views. In the process of analysing the methodology, it is possible to study the important personal directions of students during communication, to identify the strengths and weaknesses of the development of the student's personality and the need for the implementation of professional and pedagogical communicative competence. The authors of the study chose motivational and value-based, cognitive, and activity-based criteria for the development of professional-pedagogical communicative competence of the future teacher (Espinosa et al., 2018). According to these criteria and indicators, the levels of development of professional and pedagogical communicative competence of future teachers are determined (high, medium, low) (Moreno et al., 2018).

To sum up, for successful interaction of future teachers with students, teachers, and parents, it is important to master the above-mentioned personal professional qualities and skills at a high level, including verbal and non-verbal speech, the ability to freely use professional vocabulary, the presence of motivation and a value-based attitude towards the development of professional and pedagogical communicative competence (Gartmeier et al., 2015). Proceeding from the purpose and objectives of the formative and summative stages of the experimental part of the study, the method of the control stage of the experiment was developed, which allowed identifying the quantitative characteristics of the studied processes.

The diagnostic analysis was carried out by means of selected experimental methods, which included a survey, testing, modelling, monitoring the professional training of future teachers, logging, observations, the results of performing creative tasks, the use of business pedagogical games, trainings. The effectiveness of the development of professional and pedagogical communicative competence of the future teacher was determined by comparing the data of the formative and control diagnostics in two groups: control and experimental (Pascual et al., 2019). The first criterion – motivational and value-based – was determined according to the following indicators:

- The presence of motives and needs for the development of professional and pedagogical communication skills.
- The presence of a stable interest in pedagogical communication, a stable need for systematic communication with children.

- Aspiration for self-improvement and increasing the level of development of professional and pedagogical communicative competence.

To quantify the results, the following was used: a test to determine the need for communication; self-assessment of professional and pedagogical motivation; the methodology “Scale of assessment of the need for achievement”; observation. The results of the study are presented in Figure 1.

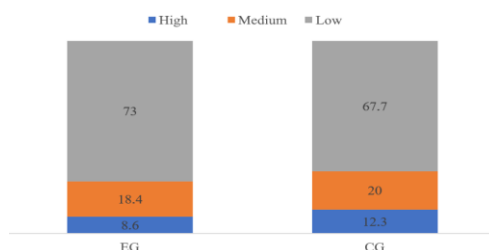


Figure 1. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment (motivational and value-based criterion)

The study allowed concluding that the majority of students (67.7% of the control group and 73% of the experimental group) have low motivation and need to develop professional and pedagogical communication skills, do not have a stable interest in pedagogical communication, a stable need for systematic communication with children, do not have a developed desire for self-improvement and increase personal level of professional and pedagogical communicative competence. The cognitive criterion was determined by analysing the results of the modular control and presentation-defence of individual research tasks according to the following indicators: knowledge of the structure of the communicative act; knowledge of the ways, methods and techniques of organising communicative pedagogical interaction; knowledge of moral and ethical norms and rules of professional communication; knowledge of the styles of pedagogical communication.

The results of the study suggest that the majority of students (67.7% of the control group and 73% of the experimental group) have fragmentary knowledge about the structure of the communicative act, practically lack knowledge about the means, methods, and techniques of organising communicative interaction, about the style of pedagogical communication and do not use them in their practice, have only partial knowledge about the norms and rules of professional communication (Figure 2).

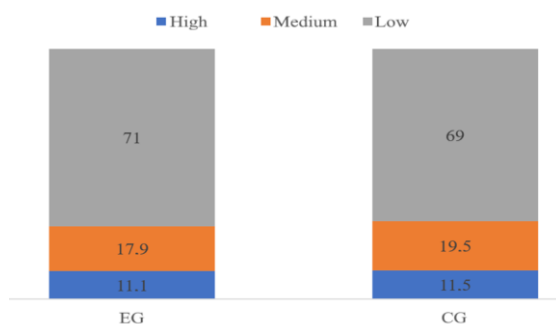


Figure 2. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment (cognitive criterion)

The activity-based criterion was determined using the following techniques and methods: the method of communicative social competence; the questionnaire “How to determine the style of pedagogical communication?” diagnostics of the dominant style of communication of the teacher; the method of expert assessments. The following indicators of the activity-based criterion were diagnosed: the ability to freely use professional and pedagogical vocabulary in a particular situation; the ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication.

The results of the study suggest that the majority of students lack the ability to freely use professional and pedagogical vocabulary in a particular situation, the majority of respondents lack the ability to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as to initiate and support the process of pedagogical communication (Figure 3).

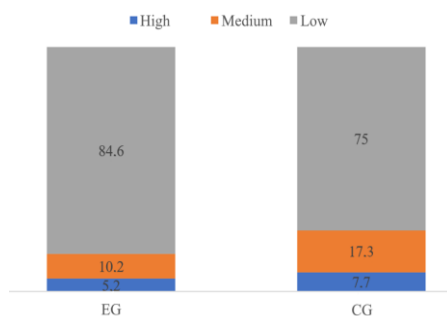


Figure 3. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment (activity-based criterion)

The summary results of the development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment are presented in Table 2.

Table 2
Levels of the development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment

Sr. No.	Criteria characteristics	Number of students CG 220 people, %			EG 234 people, %		
		low	medium	high	low	medium	high
1.	Motivational and value-based criterion	149 67.7%	44 20%	27 12.3%	171 73%	43 18.4%	20 8.6%
2.	Cognitive criterion	152 69%	43 19.5%	25 11.5%	166 71%	42 17.9%	26 11.1%
3.	Activity-based criterion	165 75%	38 17.3%	17 7.7%	198 84.6%	24 10.2%	12 5.2%
	Generalised indicator	156 70.9%	45 20.5%	19 8.6%	181 77.4%	35 14.9%	18 7.7%

To verify the reliability of the conclusions on the approximately equal level of development of professional and pedagogical communicative competence of the future teacher in the control and experimental groups at the beginning of the experiment, the methods of mathematical statistics were used, in particular, the χ^2 -criterion. The supervisory value of the χ^2 criterion was determined according to the formula:

$$\chi^2 = \sum \left[\frac{(f'_E - f'_k)^2}{f'_k} \right] \quad (1)$$

Where f'_E the relative frequency of the interval of one is row; f'_k is the relative frequency of the interval of the second row.

With confidence probability $p=0.99$, $c=3$, degrees of freedom $c-1=2$, $\chi^2_{crit} = 9.21$.

The comparison of the levels of development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment at the summative stage of the pedagogical experiment is presented in Table 3.

Table 3
Comparison of the levels of development of professional and pedagogical communicative competence of the future teacher at the beginning of the experiment (%)

	Number of students	The level of development of the criterion of professional orientation					
		low		medium		high	
Frequency f'_k	220	156	70.9	45	20.5	19	8.6
Frequency f'_E	234	181	77.4	35	14.9	18	7.7
Relative frequency 1, f'_k			70.9		20.5		8.6

Relative frequency			
$2, f'_E$	77.4	14.9	7.7
$f'_E - f'_k$	-6.5	5.6	0.9
$\frac{(f'_E - f'_k)^2}{f'_k}$	42.45	31.36	0.81
$\frac{(f'_E - f'_k)^2}{f'_k}$	0.56	0.27	0.09
Criteria values χ^2			
observational		critical	
0.92		9.21	

$\chi^2_{post} < \chi^2_{crit}$, hence the confidence hypothesis that the aggregates are the same is accepted with a confidence probability of 99%. The level of development of professional and pedagogical communicative competence of the future teacher in the control and experimental groups at the beginning of the experiment is the same.

The formative stage of the experiment lasted two years. During the final survey, a study of the development of professional and pedagogical communicative competence of the future teacher was conducted according to certain criteria and indicators that were used at the beginning of the experimental work. The data on the distribution of students by high, medium, and low levels of professional and pedagogical communicative competence clearly demonstrated the qualitative changes that occurred in the structure of the experimental group.

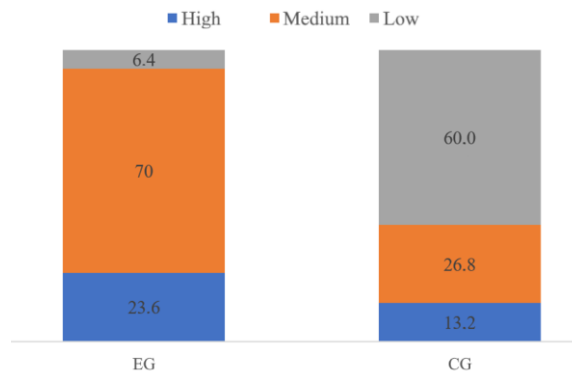


Figure 4. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the control stage (motivational and value-based criterion)

The study suggests that 93.6% of students in the experimental group have sufficient and high levels of motivation and need for the development of professional and pedagogical communication skills, a stable interest in pedagogical communication, stable needs for systematic communication with children, have a developed desire for self-improvement and increase their level of development of professional and pedagogical communicative competence, while in the control group this indicator is 30%. The above diagram fully reflects and

clearly indicates the positive changes in the experimental group regarding the development of professional and pedagogical communicative competence of the future teacher according to the motivational and value-based criterion.

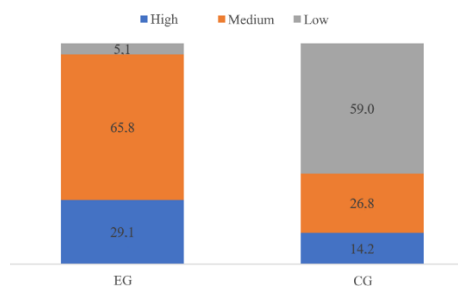


Figure 5. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the control stage (cognitive criterion)

The analysis of the obtained results allows concluding that 29.1% of students in the experimental group have a high, and 65.8% – an average level of knowledge about the structure of the communicative act, means, methods, and techniques of organising communicative interaction, about the style of pedagogical communication and use them in their practice, know the norms and rules of professional communication, while in the control group, these indicators are 14.2% and 26.8%, respectively.

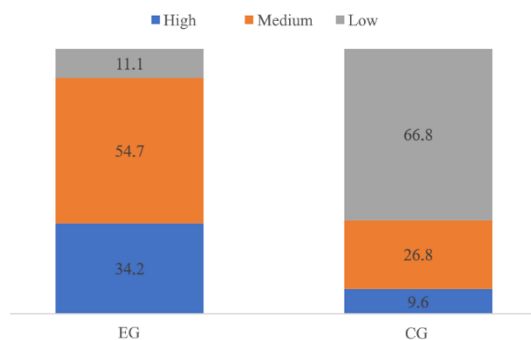


Figure 6. Diagram of the development of professional and pedagogical communicative competence of the future teacher at the control stage (activity-based criterion)

The results of the experimental work indicate the effectiveness of the implemented humanistic and personal technology for the development of professional and pedagogical communicative competence. Quantitative indicators clearly illustrate the positive changes in the experimental group: according to the motivational and value-based criterion, the number of students with a low level of professional and pedagogical communicative competence significantly decreased – at the beginning of the experiment, it was 171 people (73%), and at the end – 15 people (6.4%). The same pattern is observed for all criteria: cognitive – 166 people (71%) at the beginning, 12 people (5.1%) – at the end; activity – 198 (84.6%) – at the beginning, 26 (11.1%) – at the end.

It can be considered that the introduced humanistic personal technology of development of professional and pedagogical communicative competence of the future teacher and the pedagogical conditions for its provision had the greatest impact on students with a low level of training, who, due to the acquired knowledge and personal initiative, rose to a higher level of development of professional and pedagogical communicative competence, and the number of students with a low level sharply decreased. Summary indicators of the results of the experimental work are presented in Table 4.

Table 4
Levels of the development of professional and pedagogical communicative competence of the future teacher

Sr. No.	Criteria characteristics	Number of students CG 220 people, %			EG 234 people, %		
		low	medium	high	low	medium	high
1.	Motivational and value-based criterion	149 67.7%	44 20%	27 12.3%	132 60%	59 26.8%	29 13.2%
2.	Cognitive criterion	152 69%	43 19.5%	25 11.5%	130 59%	59 26.8%	31 14.2%
3.	Activity-based criterion	165 75%	38 17.3%	17 7.7%	147 66.8%	52 23.6%	21 9.6%
Generalised indicator		156 70.9%	156 70.9%	45 20.5%	19 8.6%	139 63.2%	58 26.4%

A comparative analysis of the levels of development of professional and pedagogical communicative competence of the future teacher in the experimental and control groups demonstrated that the introduction of humanistic personal technology for the development of professional and pedagogical communicative competence of the future teacher and the pedagogical conditions for its implementation contributed to an increase in the levels of development of professional and pedagogical communicative competence of the future teacher according to all criteria: motivational and value-based, cognitive, and activity-based.

A comparative analysis of the distribution of students by high, medium, and low levels of development of professional and pedagogical communicative competence of the future teacher demonstrated that prior to the experiment, the majority of students in the control and experimental groups had a low level of development of professional and pedagogical communicative competence, although students had knowledge obtained in the course of the compulsory subjects provided for in the curriculum: pedagogy, psychology, professional methodology, etc. A high level of education was identified only in individual students, who, as a rule, were noticed in each study group and were distinguished by their erudition and general abilities. After the pedagogical experiment, the distribution of students at high, medium, and low levels according to the criteria characteristics changed substantially.

To verify the conclusions obtained during the formative experiment and confirm the hypothesis of the study, a statistical analysis was performed. To establish the

presence of a substantial difference in the results of the experimental and control groups, that is, the consequence of the action of the research system, and not the influence of random factors, the method of hypotheses is used – the Student's t-test, which is determined according to the following formula:

$$t = \frac{M_1 - M_2}{S_{M_1 - M_2}} \quad (2)$$

Where M_1, M_2 the arithmetic mean in the experimental and control is groups; $S_{M_1 - M_2}$ is the standard error of the difference between the arithmetic mean.

Statistical indicators as a result of the completion of the formative experiment on the development of professional and pedagogical communicative competence of the future teacher are summarised in Table 5.

Table 5
Expert opinions

Levels	EG (234)	CG (220)
Low	2 pts x 19	2 pts x 139
Medium	3 pts x 147	3 pts x 58
High	4 pts x 24 5 pts x 44	4 pts x 23

In the groups at the beginning and at the end of the experiment, there were 234 people in the experimental group and 220 people in the control group. To calculate the Student's t-test, the initial data were summarised in Table 6.

Table 6
Initial data for calculating the Student's t-test

	Points		Auxiliary formulas	
	EG	CG	X_1^2	X_2^2
	X_1	X_2	X_1^2	X_2^2
	795	544	632,025	295,936
Σ	795	544	-	-
M	3.4	2.47	-	-
ΣX_s^2	2,883	1,446	-	-

The calculation of the arithmetic averages was performed according to the following formula (3):

$$M = \frac{\Sigma X_i}{N} \quad (3)$$

The results are listed in the table, where X_i is the results, N is the number of respondents, and Σ is the sum sign. ΣX_s^2 is the sum of the squares of the points multiplied by the number of respondents with these points. The initial data were the indicators at the end of the experiment in the experimental and control

groups. To determine the results of the experiment, the coefficient of variation was calculated according to the following formula (4):

$$SS_x = \sum (X_i - M)^2 = \sum X^2 - \frac{\sum X^2}{N} \quad (4)$$

Where X_i the results of the respondents, N is the number of respondents, \sum is the sign of the sum.

First, the sum of the squared deviations from the arithmetic mean was calculated using the formula $(X-M)^2$. This expression is laid out in the form of SS_x characters. The sum of the squares of the deviations in this case was found according to the formulas (5, 6):

$$SS_1 = 2883 - \frac{632025}{234} = 2883 - 2700.96 = 182.04 \quad (5)$$

$$SS_2 = 1446 - \frac{295936}{220} = 1446 - 1345.16 = 100.84 \quad (6)$$

Next, a measure of the variation of the estimates, or the variance was found according to the formula $S^2 = \frac{SS}{N-1}$ for each group (7, 8):

$$S_1^2 = \frac{182.04}{233} = 0.781 \quad (7)$$

$$S_2^2 = \frac{100.04}{219} = 0.46 \quad (8)$$

Next, the standard deviation S was determined according to the formula $S = \sqrt{\frac{SS}{N-1}}$, respectively, in each group (9, 10):

$$S_1 = \sqrt{0.781} = 0.884 \quad (9)$$

$$S_2 = \sqrt{0.46} = 0.678 \quad (10)$$

Next, the statistical error of S_M was calculated according to the formula (11, 12, 13):

$$S_{M1} = \sqrt{\frac{SS}{N(N-1)}} = \frac{1}{\sqrt{N}} S \quad (11)$$

$$S_{M1} = \sqrt{\frac{0,884}{234}} = 0.058 \quad (12)$$

$$S_{M1} = \sqrt{\frac{0,678}{220}} = 0.046 \quad (13)$$

The standard errors of the difference of the arithmetic mean S_{M1-M2} were found according to the following formula (14):

$$S_{M1-M2} = \sqrt{\frac{SS_1+SS_2}{N_1+N_2-2} \left(\frac{1}{N_1} + \frac{1}{N_2} \right)} \quad (14)$$

For the groups of this study (15):

$$S_{M1-M2} = \sqrt{\frac{182.04+100.84}{234+220-2} \left(\frac{1}{234} + \frac{1}{220} \right)} = \sqrt{0.0055} = 0.075 \quad (15)$$

The Student's t-test was calculated according to the formula (16):

$$t = \frac{3.4-2.47}{0.075} = \frac{0.93}{0.075} = 12.4 \quad (16)$$

Having used the table with the Student distribution, $K=234+220-2=452$ degrees of freedom, it was found that $t=12.4 > t_{cr}$ for any significance level (for $q=5\%$, $t_{cr}=1.965$, for $q=0.1\%$ $t_{cr}=2.586$).

The effectiveness of the humanistic and personal technology for the development of professional and pedagogical communicative competence of the future teacher and the pedagogical conditions for its provision is proved due to the selected criteria and indicators, according to which there is a substantial increase in the level of development of professional and pedagogical communicative competence: increased motivation and needs for the development of personal professional and pedagogical skills; the majority of students have a stable interest in pedagogical communication, stable needs for systematic communication with children, the desire for self-improvement and increasing personal level of development of professional and pedagogical communicative competence.

The students of the experimental group mastered a sufficient level of knowledge, which revealed the structure of the communicative act, means, methods, and techniques of organising communicative pedagogical interaction, moral and ethical norms, rules, and styles of professional communication.

The results of the study suggest that the students of the experimental group are able to establish and maintain the necessary contacts with all subjects of the educational environment (students, their parents, and colleagues), as well as initiate and support the process of pedagogical communication, possess the ability to freely use professional and pedagogical vocabulary in a particular situation. The conducted research does not exhaust all aspects of the development of professional and pedagogical communicative competence of future teachers. The perspective of the development of the subject matter was based on the substantiation of information and communication technologies for the development of professional and pedagogical communicative competence of the future teacher, the study of the development of professional and pedagogical communicative competence of the future teacher in extracurricular work.

Conclusion

To test the hypothesis regarding the integrity and gradual nature of the technology of developing the professional and pedagogical communicative competence of the future teacher and the pedagogical conditions for its provision, a pedagogical experiment was conducted, where students of the 3rd and 4th years of study took part. The study substantiates the feasibility of conducting a pedagogical experiment, during which the dynamics of the development of professional and pedagogical communicative competence of future teachers according to certain criteria is clarified. During the experimental work, the experimental (234 people) and control (220 people) groups were formed. The total number of students was 454. The pedagogical experiment included the formative, summative, and final stages of the scientific and pedagogical search.

The results of the experimental work demonstrated the effectiveness of the implemented humanistic and personal technology for the development of professional and pedagogical communicative competence and the pedagogical conditions for its implementation. Quantitative indicators clearly illustrated the positive changes in the experimental group: according to the motivational and value-based criterion, the number of students with a low level significantly decreased – at the beginning of the experiment, it was 171 people (73%), and at the end – 15 people (6.4%). The same pattern was observed for all criteria: activity – based – at the beginning of 166 people (71%), at the end – 12 people (5.1%); cognitive – 198 people (84.6%) at the beginning, 26 people (11.1%) at the end, while the control group did not demonstrate a considerable increase in the overall level of development of professional and pedagogical communicative competence. To verify the conclusions obtained during the formative experiment and confirm the hypothesis of the study, data analysis was performed. To establish the presence of a substantial difference in the results of the experimental and control groups, that is, the consequence of the action of the research system, and not the influence of random factors, the method of hypotheses – the Student's t-test was used. The numerical value of the criterion confirmed not the randomness of the

obtained research results, but their dependence on the proposed experimental technology.

References

- Biktagirova, G. F., & Khitryuk, V. V. (2016). Formation of future pre-school teachers' readiness to work in the conditions of educational inclusion.
- Blokesch, M. (2016). Natural competence for transformation. *Current Biology*, 26(21), R1126-R1130. <https://doi.org/10.1016/j.cub.2016.08.058>
- Boyatzis, R. E. (1993). Beyond Competence: the choice to be a leader. *Human Resource Management Review*, 3(1), 1-14. [https://doi.org/10.1016/1053-4822\(93\)90007-Q](https://doi.org/10.1016/1053-4822(93)90007-Q)
- Casillas Martín, S., Cabezas González, M., & García Peñalvo, F. J. (2020). Digital competence of early childhood education teachers: attitude, knowledge and use of ICT. *European Journal of Teacher Education*, 43(2), 210-223.
- Chao, T. C. (2015). Constructing a self-assessment inventory of intercultural communicative competence in ELT for EFL teachers. *The Asian EFL Journal*, 17(4), 94-120.
- Del Mar Maestre, M., Nail, Ó., & Rodríguez-Hidalgo, A.J. (2018). Evolution of competences related to ICT and inclusive education in the initial practicum of teachers. *Revista de Pedagogía*, 69(3), 57-72.
- del Moral, M. E., Villalustre, L., & del Rosario Neira, M. (2016). Digital Storytelling: Activating Communicative, Narrative and Digital Competences in Initial Teacher Training. *Relatos digitales: activando las competencias comunicativa, narrativa y digital en la formación inicial del profesorado. Ocnos*, 15, 22-41.
- Domingo-Coscollola, M., Bosco, A., Carrasco, S., & Sánchez, J. A. (2020). Fostering teacher's digital competence at university: The perception of students and teachers. *Rev. Investig. Educ*, 38, 167-182.
- Espinosa, M. P. P., Porlán, I. G., & Sánchez, F. M. (2018). Competencia digital: una necesidad del profesorado universitario en el siglo XXI. *Revista de Educación a Distancia (RED)*, (56).
- Figlio, D. N. (1997). Teacher salaries and teacher quality. *Economics Letters*, 55(2), 267-271. [https://doi.org/10.1016/S0165-1765\(97\)00070-0](https://doi.org/10.1016/S0165-1765(97)00070-0)
- Flores-Lueg, C., & Roig-Vila, R. (2019). Personal factors influencing future teachers' self-assessment about the pedagogical dimension of ICT use. *Revista iberoamericana de educación superior*, 10(27), 151-171.
- Gartmeier, M., Bauer, J., Fischer, M. R., Hoppe-Seyler, T., Karsten, G., Kiessling, C., ... & Prenzel, M. (2015). Fostering professional communication skills of future physicians and teachers: effects of e-learning with video cases and role-play. *Instructional Science*, 43(4), 443-462.
- González Fernández, N., Gozávez Pérez, V., & Ramírez García, A. (2015). La competencia mediática en el profesorado no universitario. Diagnóstico y propuestas formativas.
- Hartono, H., Suparto, S., & Hassan, A. (2021). Language: a 'mirror' of the culture and its application English language teaching. *Linguistics and Culture Review*, 5(1), 93-103. <https://doi.org/10.37028/lingcure.v5n1.835>
- Hayakawa, S., Costa, A., Foucart, A., & Keysar, B. (2016). Using a foreign language changes our choices. *Trends in cognitive sciences*, 20(11), 791-793. <https://doi.org/10.1016/j.tics.2016.08.004>

- Hepsiba, N., Burugapudi, E. G., & Rao, Y. P. (2017). Teacher education. *International Research Journal of Engineering, IT and Scientific Research*, 3(5), 12-18.
- Koester, J., & Lustig, M. W. (2015). Intercultural communication competence: Theory, measurement, and application. *International journal of intercultural relations*, 48, 20-21. <https://doi.org/10.1016/j.ijintrel.2015.03.006>
- Maba, W., Perdata, I. B. K., Astawa, I. N., & Mantra, I. B. N. (2018). Conducting assessment instrument models for teacher competence, teacher welfare as an effort to enhance education quality. *International research journal of management, IT and social sciences*, 5(3), 46-52.
- Maledo, R. O., & Edhere, J. U. (2021). Experiential metafunction: representing environmental degradation. *Linguistics and Culture Review*, 5(1), 129-145. <https://doi.org/10.37028/lingcure.v5n1.1081>
- Monthienvichienchai, C., Bhibulbhanuwat, S., Kasemsuk, C., & Speece, M. (2002). Cultural awareness, communication apprehension, and communication competence: A case study of Saint John's International School. *International Journal of Educational Management*.
- Moreno Rodriguez, M. D., Gabarda Mendez, V., & Rodriguez Martin, A. M. (2018). Informational literacy and digital competence in teacher education students. *PROFESORADO-REVISTA DE CURRICULUM Y FORMACION DE PROFESORADO*, 22(3), 253-270.
- Palomino, M. D. C. P. (2018). Information and communication technologies and inclusive teaching: Perceptions and attitudes of future early childhood and primary education teachers. *Problems of education in the 21st century*, 76(3), 380-392.
- Parker, I. (2014). *Discourse dynamics (psychology revivals): Critical analysis for social and individual psychology*. Routledge.
- Pascual, M. A., Ortega-Carrillo, J. A., Pérez-Ferra, M., & Fombona, J. (2019). Competencias digitales en los estudiantes del grado de maestro de educación primaria. El caso de tres universidades españolas. *Formación universitaria*, 12(6), 141-150.
- Pérez Cañado, M. L. (2010). Using virtual learning environments and computer-mediated communication to enhance the lexical competence of pre-service English teachers: a quantitative and qualitative study. *Computer Assisted Language Learning*, 23(2), 129-150.
- Prendes, M. P., Castañeda, L., & Gutiérrez, I. (2010). ICT competences of future teachers. *Comunicar*, 35, 175-181.
- Ritter, T., & Gemünden, H. G. (2004). The impact of a company's business strategy on its technological competence, network competence and innovation success. *Journal of business research*, 57(5), 548-556. [https://doi.org/10.1016/S0148-2963\(02\)00320-X](https://doi.org/10.1016/S0148-2963(02)00320-X)
- Shirkhani, S., & Fahim, M. (2011). Enhancing critical thinking in foreign language learners. *Procedia-Social and Behavioral Sciences*, 29, 111-115. <https://doi.org/10.1016/j.sbspro.2011.11.214>
- Wass, V., Van der Vleuten, C., Shatzer, J., & Jones, R. (2001). Assessment of clinical competence. *The lancet*, 357(9260), 945-949. [https://doi.org/10.1016/S0140-6736\(00\)04221-5](https://doi.org/10.1016/S0140-6736(00)04221-5)
- Xu, S., Yang, H. H., MacLeod, J., & Zhu, S. (2019). Interpersonal communication competence and digital citizenship among pre-service teachers in China's teacher preparation programs. *Journal of Moral Education*, 48(2), 179-198.

- Yang, P. (2018). Developing TESOL teacher intercultural identity: An intercultural communication competence approach. *TESOL journal*, 9(3), 525-541.
- Zeichner, K. (2005). Becoming a teacher educator: A personal perspective. *Teaching and teacher education*, 21(2), 117-124.
<https://doi.org/10.1016/j.tate.2004.12.001>