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Communication and Language Development as Perceived Factors of Social Adaptation in Preschool Age

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Abstract: *The study starts from the perspectives of communication development in preschool children and aims to highlight the teachers' opinions on the premises of organizing activities to develop children's communication in the kindergarten environment. The research aimed to examine the correlations between children's language and kindergarten environment, the specificity of communication between teachers and children and the identification of favoring or inhibiting factors that influence the development of communication skills in preschoolers. The survey was attended by 615 respondents from Romania, teachers for preschool education. The data were analyzed according to different variables by means of Mann-Whitney, Friedman, Wilcoxon, Cochran Q and McNemar tests. The results of the research show that in the opinion of the respondents the enrichment of the vocabulary of preschoolers has a more important role in the formation or consolidation of interpersonal relationships than factors related to gender, family environment, social environment, etc. The data suggest that both the verification of comprehension and the development of reflexive thinking through language and the consolidation of the correct use of vocabulary are less valued. Also, human factors are of greater importance than material ones in negatively influencing the development of communication in preschoolers. Respondents consider the lack of reading in the family as a major negative potential factor for the development of communication in preschoolers. In the end, the results are discussed and directions for the development of research are suggested.*

Keywords: *language; environment; communication; kindergarten; activities; preschoolers.*

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Introduction

Preschool age is considered the golden stage for children, the period with numerous subtleties and evolutions in their development, especially in terms of language. Data from recent studies show that effective communication in children of preschool age also has an impact on their cognitive, behavioral and socio-affective development (Finders et al., 2023; Hilayati et al., 2024). In the kindergarten, as a space for human interaction, one of the most famous modern principles of communication is fully applied: "we can't not communicate" (Watzlawick et al., 1967). A feature of the holistic development of children during this period is related to providing an adequate stimulating language environment for the development of their intelligence, language, autonomy (Stan & Opriş, 2025) and sociability (von Suchodoletz et al., 2023). In addition to communication, recent research mentions socio-emotional, cognitive, moral-religious, physical-motor and artistic-creative dimensions as necessary for the harmonious development of children (Yunita & Puridawaty, 2024; Vasile, 2024).

Individual differences in language acquisition in young children partly reflect the variability of the language learning and practice environment, both in kindergartens and in the family environment (Justice et al., 2018). Improving interactions between educators and kindergarten children leads to better social and academic skills among children (Early et al., 2017). Speech, in the first 5 years of life, develops at a rapid pace, and early language skills correlate with a number of positive results in children in the formation of cognitive skills, academic and emotional performance (Suggate et al., 2018). Language input from the conceptual, interactive and linguistic level is considered to be the most relevant for understanding the contribution to language development in children (Meneses et al., 2023). During early childhood, communication is closely related to listening and speaking, which are predominantly used regardless of the activity in which the child is involved (Yunita & Puridawaty, 2024).

The prerequisites for the organization of language development activities are aimed at the holistic education of children and the provision of an adequate stimulating environment for the development of intelligence (von Suchodoletz et al., 2023), to stimulate their age-appropriate cognitive potential, so as to cope with the demands of the external environment, but also stimulation on content areas aimed strictly at literacy. In general, in kindergarten, the development of early literacy skills is addressed in the form

of teacher-led literacy training, followed by exercises and practice (Zettler-Greeley et al., 2018).

Duncan et al. (2022) expanded the study on the language environments of preschool children throughout the day, at three points in the school year, and correlated the data with other sociodemographic information of the family from which the preschooler comes, in order to link the data to the language environments from which the children come. The data show that the kindergarten and the teacher play an important role in managing the phenomenon of the word gap, and conversational turns or dialogues based on exchanges of replicas with preschoolers strengthen the development of communication in children. On the other hand, studies also highlight that to prove the effectiveness of these approaches, standardized tests are needed to assess children's progress by addressing, for example, storytelling as the primary means of literacy in children (Maureen et al., 2022; Bietti et al., 2019).

The literature also investigates the importance of the teacher in the process of developing the communication of children of preschool age, his role being related both to ensuring the psychological comfort for children and to guiding them in the field of knowledge (Mooney Simmie & Murphy, 2021). Moreover, the research that focused on the role of communication with preschoolers claims that the need to communicate is a fundamental one, and the teacher must ensure that no developmental limitations appear on this dimension in children, which can hinder learning but also the ability to manifest themselves with full rights within a social group (Doove et al., 2021; Hikmatuzzohrah et. al., 2024).

Effective communication in the school environment remains one of the fundamental competences in the teaching profession and any communication barrier between teachers and students can lead to poor results in the instructional-educational process (Hidalgo, 2020). In children, the acquisition of oral language skills is necessary for the learning process from the years of preschool and predicts the further development of reading (Sabol et al., 2021). Social communication, such as that in kindergartens, also involves the coordination of mutual collaborative behaviors (Hideki, 2023), the capitalization of relationships between environments and the linguistic relations of children (Anderson et al., 2021) and the openness of educators to communication, because daily conversations with children remain the strongest predictor in the growth of vocabulary of preschool children (Farrow et al., 2024).

Research shows that conversational interactions provoked by the teacher remain the most powerful inputs that encourage the development of

children's vocabulary in preschool (Hindman et al., 2019; Houen et al., 2022). On the other hand, similar research points out that fewer and fewer teachers allow children to respond broadly during activities (Hindman et al., 2019). Data from other more recent research shows that the lack of early communication development becomes a risk factor for children's development, with negative impact on subsequent social participation (Doove et al., 2021).

Leng et al. (2025) suggest that the socioeconomic level and personal knowledge of the family significantly predicted the level of learning in both urban and rural groups. Family and especially the specificity of family relationships and the type of family-child interactions represent one of the factors with a strong influence on children's development (Csibi, 2017). However, although previous studies have reported benefits of early reading in the family (Sénéchal & Lefevre, 2002), data from more recent studies draw attention to the difficulty of observing parents' language in the home environment and in actions such as parents' input in relation to children's books and results, parents' input outside of book-reading interactions, child-parent relationships in relation to the kindergarten environment (Demir-Lira et.al., 2018).

Problem investigated

The literature review congruently shows that training in kindergarten is a key element in the practice of language and communication at preschool age and for the subsequent stages of child development (Justice et al., 2018). Thus, efforts to improve the quality of communication and interactions between teachers and kindergarten children are fully justified, given their impact on the development of a set of skills in children (von Suchodoletz et al., 2023).

The present study aimed to provide new information in approaches regarding the development of language and communication in preschoolers, starting from variables that directly involve the kindergarten. We have proposed to investigate the opinion of preschool teachers in Romania on issues related to the importance of kindergarten as a linguistic and interactive environment for children (Justice et al., 2018), the role of educator-preschooler communication in kindergarten, the support of the family in the development of communication with preschoolers, as well as the factors influencing the development of communication in kindergarten.

The study was guided by the following research questions: (1.) Are there statistically significant differences in kindergarten support of communication development activities in preschoolers, depending on

variables related to kindergarten (environment and type of kindergarten program)? (2.) In the opinion of educators, the actions that support the kindergarten's role as a linguistic environment are statistically significantly influenced by the environment in which the kindergarten is located and by the type of its program? (3.) From the perspective of the role of communication between the teacher and preschoolers is the development of the child's language more important than favoring communication with other children, at a statistically significant difference? (4.) Is the rich vocabulary a favorable factor in the development of communication skills between preschoolers at a statistically significant difference compared to other factors, biological, family or educational/cognitive ones? (5.) Are there statistically significant differences between the factors affecting the language development of preschoolers and the development of communication?

Methodology

Design overview

The study employed a quantitative, descriptive, and correlational cross-sectional design, conducted through an online survey addressed to preschool teachers. Convenience sampling was used. This design was chosen to address the research objectives, which aimed to identify teachers' perceptions and compare them according to institutional variables (residence environment, type of kindergarten program). The instrument used was developed based on specialized literature, validated through expert evaluation and pilot testing, and its reliability was confirmed by the Cronbach's Alpha coefficient. Data analysis was conducted using nonparametric statistical tests, in line with the results of the Shapiro–Wilk test, which indicated significant deviations from normality.

Participants

The survey was attended by 615 respondents from Romania, distributed on four age levels: 22,9% under 30 years old, 30,1% between 31-40 years old, 32,8% between 41-50 years old and 14,1% over 51 years old. According to their level of education, the distribution is as follows: 8,9% high school, 51,5% Bachelor's degree and 39,5% master's degree. Depending on the work experience in education, the interval distribution is: 41,3% between 0-10 years, 26% between 11-20 years, 22,3% between 21-30 years, 10,4% between 31-40 years. Regarding teaching degrees, the frequency values are as follows: 13,8% beginners, 24,4% with the definitive teaching certification, 15,9% with the second teaching degree, and 45,9% with the

first teaching degree. Out of the total respondents, 70,2% work in a kindergarten in urban areas, and 29,8% in rural areas. For the two types of program according to which kindergartens operate, we have the distribution of respondents as follows: 29,8% in half-day kindergartens and 70,2% in full-day kindergartens.

Data collection

The survey was conducted between December 2024 and March 2025, online, using a Google Forms questionnaire. Throughout the study, the academic guidelines for research ethics were strictly followed; participation was voluntary, and no incentives were promised or provided for taking part in the survey.

The instrument underwent a rigorous validation process. First, the questionnaire was piloted with a small sample of 25 educators to assess item clarity and relevance. Subsequently, content validity was confirmed by a panel of five experts in Education Sciences from the Doctoral School "Didactics. Tradition, Development, Innovation" at "Babeş-Bolyai" University, Cluj-Napoca, who evaluated the consistency of the items with the research questions. During statistical analysis, the Cronbach's Alpha coefficient was calculated (0.901), indicating excellent reliability. Additionally, an exploratory factor analysis revealed a KMO index of 0.714 and a significant Bartlett's test ($p < 0.001$), confirming the suitability of the data for identifying latent dimensions. Thus, the instrument demonstrates both high internal consistency and construct validity.

Overall, the questionnaire contained 22 items; however, only five were used in this study, deliberately selected because they directly correspond to the five formulated research questions. Each item addressed a key dimension of the investigation: (1) institutional support for communication activities, (2) the status of kindergarten as a stimulating language environment, (3) the role of educator–preschool communication, (4) facilitating factors, and (5) inhibiting factors. This selection ensured coherence between the objectives, the instrument, and the applied statistical methods, and allowed for clear and focused results. The remaining questionnaire items can be used in future analyses and may be included in a doctoral thesis currently in preparation.

Research data analysis

The data were analyzed using the SPSS statistical package (version 22.0; Armonk, NY, USA: IBM Corp.). The statistical analysis was structured on several levels to ensure consistency and robustness of interpretations. In

a first step, basic descriptive statistics were calculated for each item of the questionnaire (N, mean, standard deviation, minimum and maximum values), in order to highlight the general trends of the answers. To assess the assumptions of normality, the Shapiro–Wilk test was applied to the main variables (Q1–Q5), and the results indicated p-values ≤ 0.05, confirming significant deviations from normality. Given that the items were formulated on a five-point Likert scale and the data are ordinal in nature, nonparametric tests were chosen exclusively.

In relation to the research objectives, the following statistical procedures were applied: Friedman test, for comparison of several ordinal paired variables, Mann–Whitney U test, for comparison of two independent samples, Wilcoxon test, for pair comparisons between ordinal variables, Cochran Q test, for repeated dichotomous variables, McNemar test, for pair comparisons between dichotomous variables. In situations where Friedman and Cochran Q tests showed significant overall differences, post-hoc analyses were performed using Wilcoxon and McNemar tests, applying the correction to adjust the materiality threshold relative to the number of paired comparisons. The results were reported together with test statistics and p-values to ensure transparency and rigour of interpretations. This stepwise approach, combining basic descriptive analyses, assessment of distributions, and the application of nonparametric tests suited to the data type, allowed for the generation of a comprehensive and valid overview of the relationships under investigation, in line with the formulated research objectives.

Results

1. The kindergarten's support for activities that develop communication skills in preschool children

To answer the first research question: *Are there statistically significant differences in kindergarten support of communication development activities in preschoolers, depending on variables related to kindergarten (environment and type of kindergarten program)?,* we analyzed the answer to the first item of the questionnaire. Through it, we asked the respondents to give a score from 1 to 5 (1 – the lowest score, 5 – the highest score), for six statements that highlights various ways in which the kindergarten supports activities for developing communication skills in preschool children: administrative support, infrastructure, teaching activities, communication with the family. The frequencies for each of the scores given to the six statements have been summarized in table 1.

Table 1. Frequency distribution (%) for each score given to statements regarding support by the kindergarten of communication development activities in pre-schoolers (Q1)

Statements	Score (%)				
	1	2	3	4	5
1. The director of the kindergarten in which I work always provides the educators with the material resources necessary to carry out the activity. *(Director's support)*	11,1	10,9	17,7	17,1	43,3
2. Our kindergarten owns a library with a very rich children's book fund. *(Children's books facilities)*	18,5	16,9	20,8	21,3	22,4
3. The kindergarten has a space specially designed for literary activities (celebrations, skits, meetings with different people) *(Space for literary activities)*	33,5	13,7	16,3	10,4	26,2
4. Each room is equipped with a video projector and laptop/ computer. *(IT facilities)*	17,9	10,4	13,3	13,2	45,2
5. We carry out at least one extracurricular activity per month aimed at developing the children's communication skills (such as short plays, visits to various cultural institutions, etc.) *(Extracurricular activities)*	4,4	12,2	19,0	21,5	42,9
6. Our kindergarten has an official website / Facebook page, where activities with children are frequently posted. *(Online promotion)*	13,8	6,7	14,0	13,5	52,0

The data in Table 1 show values higher than 50% for the maximum score in the case of the statement regarding the promotion through a website/ Facebook page of the activities carried out in the kindergarten. With very close values follow the statements referring to the provision of kindergartens with electronic teaching aids (45,2%), support from the management (43,3%), and the carrying out of at least monthly activities that develop children's communication skills (42,9%). The lowest percentages for the maximum score are in relation to issues directly related to the language development activities of preschoolers, namely the existence of a special space for literary activities (26,2%), respectively the existence of a library

with a rich children's book fund (22,4%), where we have the highest percentages for the minimum score: 33,5% and 18,5%, respectively.

The collected data allowed us to analyze the values of the central trend indicators (mean, median, mode) and the degree of data scattering (standard deviation), presented by us in Table 2.

Table 2. Indicators of the central trend (mean, median, mode) and the degree of data scattering for Q1 statements

		Statement 1 *(Director's support)*	Statement 2 *(Children's books facilities)*	Statement 3 *(Space for literary activities)*	Statement 4 *(IT facilities)*	Statement 5 *(Extracurricular activities)*	Statement 6 *(Online promotion)*
N	Valid	615	615	615	615	615	615
	Missing	0	0	0	0	0	0
Mean		3,71	3,12	2,82	3,57	3,86	3,83
Median		4,00	3,00	3,00	4,00	4,00	5,00
Mode		5	5	1	5	5	5
Std. Deviation		1,399	1,418	1,612	1,560	1,219	1,465

If we look at the mean for the six statements in comparison, we see that for five out of six statements, the mean is above the value of 3. The highest value of the mean is found in the case of statement 5 ($mean_5$= 3,86), relating to the organization of at least one literary activity per month. At a close value we find the mean for statement 6 ($mean_6$= 3,83), which takes into account the online promotion of the activities carried out, situation in which we have maximum values for the median ($median_6$ = 5) and mode ($mode_6$ = 5). The lowest value of the mean is in the case of statement 3 ($mean_3$= 2,82) which aim at the existence of a space intended for literary activities, where the lowest value of the median is also recorded ($median_3$ = 3) and mode ($mode_3$ = 1), which justifies the low value of the mean.

Based on the mean value and the standard deviation, we can calculate the coefficient of variation, for each statement, based on the formula: CV = (σ/m)x100. In the case of all statements, the value is above 30% (with a maximum of CV_3 = 57,2% in the case of statement 3), which reflects a large dispersion, i.e. a large degree of scattering of data around the mean.

Values of Shapiro-Wilk test in the case of the six statements show that in all situations the distribution is different from the normal one (p = 0,000), which leads to the application of nonparametric tests.

To find out if there are statistically significant differences between the answers to the six statements we applied the Friedman nonparametric test for more than two paired variables. The values are recorded in Tables 3 and 4.

Table 3. Mean ranks (Q1)

	Mean Rank
Statement 1 *(Director's support)*	3,78
Statement 2 *(Children's books facilities)*	2,94
Statement 3 *(Space for literary activities)*	2,69
Statement 4 *(IT facilities)*	3,63
Statement 5 *(Extracurricular activities)*	3,95
Statement 6 *(Online promotion)*	4,01

Table 4. Friedman Test[a] (Q1)

N	615
Chi-Square	383,831
df	5
Asymp. Sig.	,000

a. Friedman Test

Value for Friedman test χ^2 (5) = 383,831, p = 0,000 shows the existence of statistically significant differences between statements, which shows a "hierarchy" by the respondents of the issues related to the support by the kindergarten of communication development activities in preschoolers. The highest value of the mean ranks is found in the case of online promotion of the activities carried out (MR_6 = 4,01), and the lower one, for the statement on the existence of a space intended specifically for literary activities (MR_3 = 2,69).

Given the fact that through this item we proposed to analyze to what extent the respondents have the support of the kindergarten in organizing the communication development activities in preschoolers, we conducted analyses through the Mann-Whitney U nonparametric test for two independent samples depending on the environment in which the kindergarten is located and the type of the kindergarten program.

The values for the Man-Whitney test according to the environment in which the kindergarten is located are presented in Tables 5 and 6.

Table 5. Mean ranks (Q1)

	Environment	N	Mean Rank	Sum of Ranks
Statement 1 *(Director's support)*	Urban	432	331,76	143322,00
	Rural	183	251,90	46098,00
	Total	615		
Statement 2 *(Children's books facilities)*	Urban	432	338,06	146041,50
	Rural	183	237,04	43378,50
	Total	615		
Statement 3 *(Space for literary activities)*	Urban	432	328,52	141918,50
	Rural	183	259,57	47501,50
	Total	615		
Statement 4 *(IT facilities)*	Urban	432	324,53	140197,00
	Rural	183	268,98	49223,00
	Total	615		
Statement 5 *(Extracurricular activities)*	Urban	432	329,94	142533,00
	Rural	183	256,21	46887,00
	Total	615		
Statement 6 *(Online promotion)*	Urban	432	340,68	147172,00
	Rural	183	230,86	42248,00
	Total	615		

Table 6. The Mann-Whitney U Statistics[a] (Q1)

	Statement 1 *(Director's support)*	Statement 2 *(Children's books facilities)*	Statement 3 *(Space for literary activities)*	Statement 4 *(IT facilities)*	Statement 5 *(Extracurricular activities)*	Statement 6 *(Online promotion)*
Mann-Whitney U	29262,000	26542,500	30665,500	32387,000	30051,000	25412,000
Wilcoxon W	46098,000	43378,500	47501,500	49223,000	46887,000	42248,000
Z	-5,354	-6,583	-4,546	-3,745	-4,953	-7,596
Asymp. Sig. (2-tailed)	,000	,000	,000	,000	,000	,000
a. Grouping Variable: Environment						

According to the data in Table 6, we can say that for all statements there are statistically significant differences (p = 0.000), and by analyzing the mean of ranks (Table 5) we notice that in all cases the differences are in favor of urban respondents, which shows a greater support, both human and material, for organizing activities aimed at developing communication in preschoolers.

The data for the Mann-Whitney U test according to the type of kindergarten program are presented in Tables 7 and 8.

Table 7. Mean ranks (Q1)

	Kindergarten type	N	Mean Rank	Sum of Ranks
Statement 1 *(Director's support)*	Half-Day Kindergarten	183	252,73	46249,50
	Full-Day Kindergarten	432	331,41	143170,50
	Total	615		
Statement 2 *(Children's books facilities)*	Half-Day Kindergarten	183	250,98	45929,50
	Full-Day Kindergarten	432	332,15	143490,50
	Total	615		
Statement 3 *(Space for literary activities)*	Half-Day Kindergarten	183	264,01	48313,00
	Full-Day Kindergarten	432	326,64	141107,00
	Total	615		
Statement 4 *(IT facilities)*	Half-Day Kindergarten	183	275,07	50337,50
	Full-Day Kindergarten	432	321,95	139082,50
	Total	615		
Statement 5 *(Extracurricular activities)*	Half-Day Kindergarten	183	266,35	48742,50
	Full-Day Kindergarten	432	325,64	140677,50
	Total	615		
Statement 6 *(Online promotion)*	Half-Day Kindergarten	183	241,40	44176,50
	Full-Day Kindergarten	432	336,21	145243,50
	Total	615		

Table 8. The Mann-Whitney Test[a] (Q1)

	Statement 1 *(Director's support)*	Statement 2 *(Children's books facilities)*	Statement 3 *(Space for literary activities)*	Statement 4 *(IT facilities)*	Statement 5 *(Extracurricular activities)*	Statement 6 *(Online promotion)*
Mann-Whitney U	29413,500	29093,500	31477,000	33501,500	31906,500	27340,500
Wilcoxon	46249,500	45929,500	48313,000	50337,500	48742,500	44176,500
Z	-5,275	-5,290	-4,130	-3,160	-3,983	-6,558
Asymp. Sig. (2-tailed)	,000	,000	,000	,002	,000	,000
a. Grouping Variable: kindergarten type						

The values for the Mann-Whitney U test (Table 8) show that for all statements there are statistically significant differences (p = 0,000), and the analysis of the mean ranks (Table 7) leads to the conclusion that they are in favor of the respondents who work in a full-day kindergarten.

2. Leveraging the status of the kindergarten as a stimulating linguistic environment for preschoolers

To answer the second research question: *In the opinion of educators, the actions that support the kindergarten's role as a linguistic environment are statistically significantly influenced by the environment in which the kindergarten is located and by the type of its program?,* we analyzed the responses to the Q2 item by means of nonparametric tests.

Item Q2 asked respondents to choose from the list proposed by us a maximum of four actions that, from their point of view, contribute to the kindergarten's status as a stimulating language environment for the development of preschool communication. The types of activities proposed by us are aimed at developing vocabulary, understanding texts, developing oral speech skills, strengthening vocabulary, stimulating memorization and critical thinking, etc. Although we gave respondents the opportunity to propose actions that are not in the list, but consider them important, we received no other answers. In Table 9 we presented the frequencies for each of the actions, numbered by us from 1 to 5.

Table 9. Frequency for the actions of the educator contributing to the status of the kindergarten as a stimulating language environment for the development of preschool communication (Q2)

Actions of the educator	Values (%)	
	0	1
1. practice oral speaking daily with preschoolers *(daily communication)*	23,7%	76,3%
2. expose the preschooler to books, stories, memorization in kindergarten *(narrative expositions)*	10,6%	89,4%
3. go through a plan of additional questions at the end of reading a text (*post-reading questioning)*	43,6%	56,4%
4. repeat new words/ phrases several times (*verbal fixation)*	79,8%	20,2%
5. encourage children to ask questions (*encourage questions)*	25,2%	74,8%

These actions were constituted in dichotomous variables, so we applied the Cochran Q nonparametric test for more than two dichotomous paired samples. The result $Q(4) = 672{,}071$, $p = 0{,}000$ shows that among the five actions that contribute to the kindergarten's status of a stimulating language environment for the development of preschool communication there are statistically significant differences, which means that educators do not attach the same importance to them. If we analyze the frequency of choices (Table 9), we notice that three of them were chosen in percentages greater than 70%: Action 2: expose the preschooler to books, stories, memorization in kindergarten (89.4%); Action 1: practice daily oral speaking with preschoolers (76,3%); Action 5: encourage children to ask questions (74,8%). About half of the respondents chose Action 3: go through a plan of additional questions at the end of reading a text (56,4%). The fewest choices were recorded for Action 4 (20,2%), which considers learning by repeating new words/ phrases.

Data analysis by nonparametric Mann-Whitney U test, depending on the residence environment, shows that there are no statistically significant rural-urban differences, as can be seen from Table 10, in all situations $p > 0{,}05$.

Table 10. The Mann-Whitney Test[a] (Q2)

	Action 1 *(daily communication)*	Action 2 *(narrative expositions)*	Action 3 (*post-reading questioning)*	Action 4 (*verbal fixation)*	Action 5 (*encourage questions)*
Mann-Whitney U	38434,500	39018,000	37453,500	38022,000	38875,500
Wilcoxon W	55270,500	55854,000	130981,500	54858,000	132403,500
Z	-,737	-,475	-1,199	-1,076	-,431
Asymp. Sig. (2-tailed)	,461	,634	,231	,282	,667
a. Grouping Variable: Environment					

We analyzed the data also according to the type of kindergarten (Table 11)

Table 11. The Mann-Whitney U Test[a] (Q2)

	Action 1 *(daily communication)*	Action 2 *(narrative expositions)*	Action 3 (*post-reading questioning)*	Action 4 (*verbal fixation)*	Action 5 (*encourage questions)*
Mann-Whitney U	39357,000	37788,000	37761,000	39189,000	38875,500
Wilcoxon W	56193,000	54624,000	131289,000	132717,000	132403,500
Z	-,115	-1,622	-1,021	-,242	-,431
Asymp. Sig. (2-tailed)	,908	,105	,307	,809	,667
a. Grouping Variable: kindergarten type					

Nor did we obtain statistically significant differences for the Mann-Whitney U test value, depending on the type of kindergarten, as shown in Table 11, in all situations $p > 0,05$.

3. The role of educator-preschooler communication in kindergarten

To answer the third research question: *From the perspective of the role of communication between the teacher and preschoolers is the development of the child's language more important than favoring communication with other children, at a statistically significant difference?,* we analyzed the responses to the Q3 item, which asked respondents to choose a maximum of three answer variants

from a list proposing different roles of educator-preschool communication. The frequency for each of these roles was listed in Table 12.

Table 12. Frequency (Nr and %) for educator - preschool communication roles (Q3)

The role of educator-preschool communication	Values (Nr and %)	
	0	1
1. the child's interested participation in activities *(active involvement)*	380 61,8%	235 38,2%
2. increase the child's confidence in the educator (*trust*)	330 53,7%	285 46,3%
3. increase the child's confidence in himself (*self-confidence)*	251 40,8%	364 59,2%
4. child language development (*language)*	282 45,9%	333 54,1%
5. development of creativity in the child (*creativity)*	430 69,9%	185 30,1%
6. fostering communication with other children (*communication)*	410 66,7%	205 33,3%

Based on the Cochran test Q (5) = 170,083, p = 0,000, we can state that between these roles there are statistically significant differences. Given that linguistic development and interpersonal relationships are interconnected, communication being often the result of language skills, in order to see if there is a statistically significant difference between the child's language development (Role 4) and favoring communication with other children (Role 6), we applied the McNemar nonparametric test for two dichotomous pair samples and adjusted the significance threshold to the possible number of pairs: $\alpha = p/ 15 = 0,05/ 15 = 0,003$, and the data were listed in Tables 13 and 14.

Table 13. Frequencies (Nr) Role 4 & Role 6 (Q3)

Role 4 (*language)*	Role 6 (*communication)*	
	No	Yes
No	200	82
Yes	210	123

Table 14. The McNemar Test[a] (Q3)

	Role 4 (*language)* & Role 6 (*communication)*
N	615
Chi-Square[b]	55,236
Asymp. Sig.	,000
a. McNemar Test	

b. Continuity Corrected

Value for the McNemar test χ^2 = 55,236, p = 0,000 shows the existence of a statistically significant difference between the two roles of educator-preschool communication. Based on the data of Table 13, we calculate the difference D = 82 – 210 = -182, this is in favor of role 4, that is, the respondents consider, at a statistically significant difference, that the development of the language of the preschooler is more important in the kindergarten-preschool communication than favoring his/her communication with other children.

4. Factors that favor the development of communication with preschoolers

To answer the fourth research question: *Is the rich vocabulary a favorable factor in the development of communication skills between preschoolers at a statistically significant difference compared to other factors, biological, family or educational/cognitive ones?,* respondents were asked to express their consent to certain statements that can be made in relation to fostering communication with preschoolers. The frequencies for each statement corresponding to each of the five levels of the Likert scale (1 – total disagreement; 5-total agreement) were listed in Table 15 (Q4).

Table 15. Frequency of the level of expression of agreement for factors that favor communication with preschoolers (Q4)

Agreement / Statements	Total disagreement	Partial disagreement	Undecided	Partial agreement	Total agreement
1. Girls communicate more easily than boys. (*girls communicate more easily)*	13,7	10,6	15,3	48,3	12,2
2. The ability to communicate is higher in children raised by grandparents.	18,9	23,9	28,5	24,1	4,7

(*influence of grandparents)*					
3. Children who have older siblings express themselves and communicate more easily. (*communication-brothers)*	1,3	6,2	9,6	39,2	43,7
4. Children who learn to read in the upper kindergarten are more communicative. (*reading kindergarten-communication)*	7,5	14,5	22,3	37,2	18,5
5. Children who have a richer vocabulary express themselves more easily also in relation to other children. (*vocabulary-communication)*	1,3	3,3	7,6	20,2	67,6
6. The high level of education of parents favors communication with children. (*education parents-communication)*	3,4	9,1	15,6	38,0	33,8

As seen from Table 15, factors can be classified into the following categories: biological, family, cognitive and educational. Friedman nonparametric test χ^2 (5) = 1232,359, p = 0,000 shows the existence of

statistically significant differences between these factors, which means that the respondents do not attach the same importance to them, as follows from the mean value of the ranks (Table 16).

Table 16. Mean ranks (Q4)

	Mean Rank
Statement 1 (*girls communicate more easily)*	2,94
Statement 2 (*influence of grandparents)*	2,02
Statement 3 (*communication-brothers)*	4,32
Statement 4 (*reading kindergarten-communication)*	3,05
Statement 5 (*vocabulary-communication)*	4,87
Statement 6 (*education parents-communication)*	3,80

The data show the highest-ranking mean value for factor 5, a cognitive/ linguistic factor that links vocabulary levels to the ability to communicate effectively with other children.

To see if there are statistically significant differences between this factor and the other five in the list, we conducted five Wilcoxon tests, between five pairs of variables in which factor 5 enters, we adjusted the significance threshold to the total number of tests/ pairs that can be performed, $\alpha = p/ 15 = 0,05/ 15 = 0,003$, the data being listed in Tables 17 and 18.

Table 17. Mean and sum of ranks (Q4)

		N	Mean Rank	Sum of Ranks
Statement 5 (*vocabulary-communication)* - Statement 1 (*girls communicate more easily)*	Negative Ranks	30[a]	171,37	5141,00
	Positive Ranks	429[b]	234,10	100429,00
	Ties	156[c]		
	Total	615		
Statement 5 (*vocabulary-communication)* - Statement 2 (*influence of*	Negative Ranks	15[d]	132,20	1983,00
	Positive	518[e]	270,90	140328,00

grandparents)	Ranks			
	Ties	82[f]		
	Total	615		
Statement 5 (*vocabulary-communication)*- Statement 3 (*communication-brothers)*	Negative Ranks	71[g]	140,30	9961,50
	Positive Ranks	219[h]	147,18	32233,50
	Ties	325[i]		
	Total	615		
Statement 5 (*vocabulary-communication)*- Statement 4 (*reading kindergarten-communication)*	Negative Ranks	19[j]	143,82	2732,50
	Positive Ranks	409[k]	217,78	89073,50
	Ties	187[l]		
	Total	615		
Statement 5 (*vocabulary-communication)*- Statement 6 (*education parents-communication)*	Negative Ranks	34[m]	142,07	4830,50
	Positive Ranks	279[n]	158,82	44310,50
	Ties	302[o]		
	Total	615		
a. Statement 5 < Statement 1; b. Statement 5 > Statement 1; c. Statement 5 = Statement 1				
d. Statement 5 < Statement 2; e. Statement 5 > Statement 2; f. Statement 5 = Statement 2				
g. Statement 5 < statement 3; h. Affirmation 5 > affirmation 3; i. Statement 5 = Statement 3				
j. Statement 5 < statement 4; k. Affirmation 5 > affirmation 4; l. Statement 5 = Statement 4				
m. Statement 5 < statement 6; n. Affirmation 5 > affirmation 6; o. Statement 5 = Statement 6				

Table 18. Wilcoxon Test[a] (Q4)

	5 (*vocabulary-communication)* – 1 (*girls communicate more easily)*	5 (*vocabulary-communication)* – 2(*influence of grandparents)*	5 (*vocabulary-communication)* – 3 (*communication-brothers)*	5 (*vocabulary-communication)* – 4 (*reading kindergarten-communication)*	5 (*vocabulary-communication)* – 6 (*education parents-communication)*
Z	-17,296[b]	-19,654[b]	-8,367[b]	-17,382[b]	-12,906[b]
Asymp. Sig. (2-tailed)	,000	,000	,000	,000	,000

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

In all situations, the value of the Wilcoxon test is statistically significant (p = 0,000). To identify which factor the difference is in favor of, we analyze in Table 17 the sum of the ranks, the higher value in the case of all pairs being in favor of the positive ranks, that is, in favor of the Factor 5, which shows that the enrichment of the vocabulary of preschoolers has a more important role in the formation or consolidation of interpersonal relationships than factors related to gender, family environment, social environment, etc.

5. Inhibiting factors in the development of communication with preschoolers

To answer the fifth research question: *Are there statistically significant differences between the factors affecting the language development of preschoolers and the development of communication?,* we asked respondents to give a score from 1 to 5 (1 – the lowest score, 5 – the highest score) for the influence of each of the factors in Table 19 in the braking of communication development in kindergarten children (Q5).

In the list proposed by us, there are two variants that explicitly consider problematic aspects related to the development of language in the family, due to the lack of reading activities performed by parents (factor 2) and problematic aspects related to the development of communication in preschoolers, due to the low involvement of the teacher (factor 6). In Table 19 we have the frequencies for each of the grades awarded by the respondents.

Table 19. Frequency of scores for factors that inhibit the development of language and communication with preschoolers (Q5)

Inhibiting factors	Score (%)				
	1	2	3	4	5
1. Atmosphere marked by verbal and physical violence in the family. (*negative atmosphere family)*	4,1	3,6	9,3	15,8	67,3
2. Lack of reading activities carried out by parents. (*lack of parental reading)*	3,3	4,6	15,3	28,3	48,6
3. Parents leaving the child in front of the phone, TV, etc. (*screen hours)*	3,9	2,3	7,2	13,0	73,7
4. Low social interactions in children after the kindergarten program. (*poor social interactions)*	2,9	5,4	13,5	31,2	47,0
5. Poor endowments with material resources	6,0	11,9	29,8	28,0	24,4

of kindergartens (books, video, laptop) (*poor kindergarten resources)*					
6. Low involvement of the educator for the development of communication in children. (*poor communication educator)*	4,6	5,5	16,4	25,2	48,3

The data in Table 19 show a detachment of the percentage values for higher scores (4 and 5) recorded in the case of familial inhibiting factors, child abandonment in front of the screen (S = 13,0% + 73,7% = 83,7%), the existence of domestic violence (S = 15,8% + 67,3% = 83,1%). Very close values are also recorded for the lack of language development activities through family reading (S = 28,3% + 48,6% = 76,9%) and for low social interactions after the end of the kindergarten program, respectively (S = 31,2% + 47,0% = 78,2%). Among the factors related to the kindergarten, the highest percentage values for high scores can be found in the lack of interest of educators in developing communication with preschoolers (S = 25,2% + 48,3% = 73,5%). Although the sum of percentages is less in case of lack of a material base in the kindergarten, it exceeds the value of 50% (S = 28,0% + 24,4% = 52,4%).

These values are also supported by the analysis of the central trend indicators and the degree of data scattering, summarized in Table 20.

Table 20. Statistical indicators of central tendency and data dispersion (Q5)

		Factor 1 (*negative atmosphere family)*	Factor 2 (*lack of parental reading)*	Factor 3 (*screen hours)*	Factor 4 (*poor social interactions)*	Factor 5 (*poor kindergarten resources)*	Factor 6 (*poor communication educator)*
N	Valid	615	615	615	615	615	615
	Missing	0	0	0	0	0	0
Mean		4,39	4,14	4,50	4,14	3,53	4,07
Median		5,00	4,00	5,00	4,00	4,00	4,00
Mode		5	5	5	5	3	5
Std. Deviation		1,062	1,046	1,000	1,032	1,157	1,129

The data in Table 20 show mean values in the range of 4,00 – 4,50 for five of the six inhibiting factors and maximum values of the mode. The only exception, with a mean of 3,53, respectively mode = 3 is in the case of the lack of appropriate facilities, which shows that human factors have a greater importance than material ones in negatively influencing the development of communication in preschoolers. Also in the case of dispersion, based on the coefficient of variation, we can say that in the case of factor 5 the value is over

30% (high data dispersion), and in the other five situations, the dispersion is moderate, being in the range of 20-25%: CV_1 = 24,19%, CV_2 = 25,26%, CV_3 = 22,22%, CV_4 = 24,92%, CV_5 = 32,77%, CV_6 = 27,73%.

To see if there is a statistically significant difference between the inhibiting factors explicitly aimed at language development (factor 2) and communication in preschoolers (factor 6), we applied the nonparametric Wilcoxon test for two paired variables. The value is Z = -1,221, p = 0,222, p > 0,05, which shows that there are no statistically significant differences between the two factors, the respondents considering them equally harmful, even if, at the trend level, the difference is in favor of factor 2: the sum of the ranks is higher corresponding to the negative ranks (Table 21).

Table 21. Mean and sum of ranks (Q5)

		N	Mean Rank	Sum of Ranks
Factor 6 (*poor communication educator)* – Factor 2 (*lack of parental reading)*	Negative Ranks	154[a]	153,96	23709,50
	Positive Ranks	142[b]	142,58	20246,50
	Ties	319[c]		
	Total	615		
a. Factor 6 < factor 2; b. Factor 6 > factor 2; c. Factor 6 = Factor 2				

Respondents consider the lack of reading in the family as a factor with a greater negative influence for the development of communication in preschoolers, than the low involvement of the teacher in such activities, but not at statistically significant differences.

Conclusions and discussion

Communication is recognized as the strong bond between people and the factor with strong influences on children at early age. In relation to the kindergarten environment, communication supports the educational instructive process and contributes to the formation of foundations development of attitude, behavior, knowledge and skills necessary for the child to adapt to the environment (Mahatmaharti et al., 2020; Granone & Pollarolo, 2025). The research data show at statistically significant differences the advantages of education in urban kindergartens compared to rural ones, respectively in full-day kindergartens, compared to half-day ones, on the targeted aspects. Easier access to technology in urban areas suggests both consequences and limitations in carrying out education focused on communication development in preschoolers from rural areas, implicitly

affecting the provision of equal educational opportunities for children in rural environments. (Opriş & Popovici, 2025).

Recent educational research shows the moderating role of environmental inputs on the stimulation of communication in preschool age, but various obstacles are widely identified in assessing the characteristics of the kindergarten environment in terms of developing stimulating strategies in preschool language development (Anderson et al., 2021). These data are consistent with the results of the present study, on the section related to the actions by which teachers contribute the most to the language environment in kindergarten. Thus, although the formative valences of preschoolers' exposure to the content of some books are known (Farrow et al., 2024), there are kindergartens that do not have a special space intended for literary activities, respectively, they do not have a significant children's book fund, to ensure constant and direct access to the resources of stimulating reading.

In line with research highlighting the importance of teacher-led conversational interactions for supporting vocabulary development in preschool children (Hindman et al., 2019; Houen et al., 2022), the study data show that educators consider correct vocabulary use an essential element for communication development and for supporting preschoolers' social adaptation. Future studies directly assessing children's language performance could provide data to nuance teachers' perceptions.

On the other hand, the results of the present study show that, in kindergartens in Romania, less emphasis is placed on both checking understanding and developing reflective thinking through language, as well as on strengthening the correct use of vocabulary. The data suggest that in the expression of these options made by the educators there are no statistically significant differences depending on the environment in which they work nor on the type of kindergarten, even if according to these variables we have statistically significant differences in terms of human and material support in the organization of communication development activities in preschoolers.

The first three roles of teacher–preschooler communication focus on creating an environment conducive to learning by fostering the child's self-confidence as well as trust in the teacher, and on promoting cognitive activities reflected in language development. The last three places are occupied by roles in the motivational, relational, creative sphere, respectively. Based on educators' responses, cognitive activities (e.g., thinking and problem-solving exercises) are perceived as facilitating factors for language development in preschoolers. The results can be explained by the fact that language is, on the one hand, a curricular priority, and on the

other hand it is fundamental in the interpersonal relationship, communication being also dependent on the understanding and use of language, an aspect highlighted by other researchers that have targeted these issues (Mahatmaharti et al., 2020).

Communication in preschoolers is favored primarily by cognitive/ linguistic factors (rich vocabulary), at statistically significant differences compared to family-type factors (large family extension, presence of grandparents, parents with high education level), educational (early reading), biological (gender). These data correlate with those from investigations that highlight the relevance of the quality of the language used by the closest people of the child, which will affect his/her ability to speak or communicate in the next stage of his/her development (Juniati & Syamsuardi, 2022).

Among the various factors influencing preschool children's language development, family-related factors are frequently mentioned (Fitria, 2020). Family factors (abandonment of the child in front of the screen, exposure to scenes of violence, the lack of family support for the education provided in kindergarten, respectively), in relation to the social ones (lack of social relations outside the family) and to the educational ones (low involvement of the teacher in communication with preschoolers) are elements and contexts with strong influence in the development of communication in preschoolers. The fact that there are no statistically significant differences between the lack of education achieved by parents and the low interest of the teacher shows that the negative influence of any of the two educational factors is equally important, the negative effects of their non-involvement being statistically comparable.

Directions of research development

The study results indicate the need to further investigate receptive and expressive language development in preschoolers, given its importance for school success and social adaptation. Classical literature (Vygotsky, 1971; Bruner, 1983) has emphasized the role of language in cognitive development, and recent studies support differentiating between receptive and expressive dimensions (Yang et al., 2021; Ryan et al., 2016). Future research could examine in more detail the contribution of educational strategies to these two language components and their implications for inclusion and equity. Identified issues could also be explored from both teacher perspectives, through analysis of pedagogical roles and strategies (Stan, 2014; Mih, 2018), and child perspectives, through standardized assessments and systematic observations, to capture the real impact of these

practices (Hadley et al., 2022). Longitudinal or interventional studies across different educational contexts could highlight moderating factors and help integrate national results into the international discourse on early childhood education (Mashburn et al., 2008).

Limits of research

The research included only quantitative data from teachers working in kindergartens in Romania, without capitalizing on the perspectives of preschoolers or complementary data provided by direct observations. The absence of direct observations constitutes a limitation, as the data reflect only teachers' perceptions. Observations could have captured children's actual linguistic behaviors and the quality of teacher–child interactions, allowing comparisons between perceptions and objective data. Combining self-reports with direct observations in future research could enhance validity and robustness.

While the instrument's reliability was satisfactory, like other self-report studies (Mashburn et al., 2008), results may be influenced by teachers' perceptions and not fully reflect children's actual behaviors. This limitation, common in the literature, underscores the need to complement questionnaire data with observations or standardized tools.

We acknowledge that the use of convenience sampling may limit the generalizability of our findings and introduce selection bias. Nonetheless, the sample ensured broad geographical coverage within Romania, which strengthens the contextual relevance of the results. This study therefore provides valuable insights into Romanian preschool teachers' perceptions regarding communication and language development. Future research could build on this by employing stratified or randomized sampling strategies to further enhance representativeness and strengthen external validity.

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Informed Consent Statement | *Informed consent was obtained from all subjects involved in the study.*

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