



DOI: 10.22363/2313-1683-2025-22-1-7-24

EDN: TGHNGT

UDC 37.015.31

Research article

Project-Based Activities to Enhance Communicative Development in Young Children: Findings of a Double-Blind Control Study

Valeriya A. Plotnikova^{1,2}  , Aleksander N. Veraksa^{1,2} 

¹Lomonosov Moscow State University, *Moscow, Russian Federation*

²Federal Scientific Center of Psychological and Multidisciplinary Research, *Moscow, Russian Federation*

 ler.shinelis@yandex.ru

Abstract. Project-based activity is gaining increasing recognition in early childhood education as a means of fostering communicative development. While many studies assess the outcomes, the specific mechanisms through which these activities foster developmental change remain insufficiently explored. The present study aimed to investigate the conditions that facilitate communicative development in preschool children through project-based activities. A double-blind, randomized control experiment involving 66 children aged 5–6 was conducted across four groups: Creative Project, Research Project, Free Play, and Control group. Communicative development was assessed using the MAIN (Multilingual Assessment Instrument for Narratives) and the SCBE-30 (Social Competence and Behavior Evaluation) tools. In addition, structured observational analyses based on the “Play Matrix” and “Project Matrix” was performed to video-recorded sessions. The findings revealed that children in the Creative Project group demonstrated significantly greater improvements in narrative macrostructure, reduced social anxiety, and stable levels of aggression, compared to other groups. These children also exhibited higher levels of self-initiated actions and regulatory speech, with a corresponding decrease in adult-prompted behavior, suggesting greater internalization of initiative and agency. The results highlight the significance of organizing activities around challenging tasks, collaborative interaction, and personal meaning-making, as these elements can promote developmental shifts through the process of *perezhivanie*. These findings provide an empirical foundation for designing educational interventions aimed at enhancing communicative development in early childhood and may serve as a basis for further research into the mechanisms underlying child development.

Key words: cultural-historical approach, preschool children, social situation of development, *perezhivanie*, role play, project-based learning, communication, coherent speech

Funding. This research was supported by the Russian Science Foundation Grant No. 23-18-00506.

© Plotnikova V.A., Veraksa A.N., 2025



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License
<https://creativecommons.org/licenses/by-nc/4.0/legalcode>

Introduction

In recent years, increasing academic attention has been devoted to evaluating the impact of project-based approach on children's development. This approach has been linked to improved learning outcomes across multiple developmental domains. In particular, several studies have highlighted the positive impact of project-based activities on communicative development in early childhood (Başaran & Bay, 2023; Veraksa et al., 2023; Widayanti & Setiawati, 2019).

Communicative development refers to the acquisition of verbal (e.g. phonological, lexical, syntactic, semantic, pragmatic skills) and non-verbal (e.g. the use of gestures, facial expressions) means of communication, as well as behavioral skills (e.g. cooperation skills, respect in interpersonal interactions), that enable individuals to convey and interpret messages in social interactions (Berglund et al., 2005). Effective verbal communication, therefore, requires an integrated development of language and social competencies (Lowenthal, 2013). Empirical evidence suggests that project-based activities, which encourage collaboration and dialogue, facilitate improvements in language skills, conversational abilities, and overall communicative competence. For example, Ismail and Subagyo (2023) explored the impact of project-based activities on preschoolers' social skills. Their research reported significant improvements in the ability to respect each other, take responsibility for others, and empathize. Further supporting these findings, Başaran and Bay (2023) investigated how STEAM project-based learning in preschool settings contribute to children overall development. 57 children participated in the experiment that lasted for six weeks. Their findings revealed that STEAM group projects improved collaboration behavior and self-presentation skills. Recent systematic review showed that project-based activities contribute to group cooperation, research skills and cognitive development (Veraksa et al., 2023). Thus, studies reliably show the positive impact of project-based activities on various aspects of communicative development.

Although there is a substantial body of research examining the effects of project-based activity on communicative development, the majority of these studies focus on evaluating developmental outcomes. However, the process-oriented dimension remains relatively underexplored. Specifically, there is limited understanding of how the internal dynamics of project-based activities contribute to the developmental changes. Thus, key components of project-based activity and their relationship with children's development remain insufficiently explored.

Social situation of development as an explanatory principle of child mental development

From our perspective, the cultural-historical approach offers the most appropriate methodological framework for investigating these questions, as it conceptualizes development as a dynamic and multifaceted process involving qualitative transformations in the structure of human consciousness (Veresov, 2015; Vygotsky, & Rieber, 1997). Within this theoretical framework, the social environment is regarded as the primary source of psychological development (Vygotsky,

2019). Broadly defined, the social environment encompasses a range of objectively existing socio-cultural contexts — such as family, educational settings, and play situations — in which the child’s development unfolds. However, according to the cultural-historical theory, the environment becomes a genuine source of development only when the individual is actively engaged with it: “by acting, interacting, interpreting, understanding, recreating and redesigning *social situations of development*” (Veresov, 2019, p. 80).

Through such active engagement, individuals construct diverse types of social situations of development via the process of *perezhivanie*, which can be described as an “intensely-emotional-lived-through-experience” (Ferholt, 2010). As Vygotsky (1994) emphasizes, *perezhivanie* serves as a mediating lens through which the child interprets and internalizes experiences: “*Perezhivanie*, arising from any situation or from any aspect of environment, determines what kind of influence this situation or this environment will have on the child. Therefore, it is not any of the factors in themselves (if taken without reference to the child) which determines how they will influence the future course of his development, but the same factors refracted through the prism of the child’s ... *perezhivanie*” (pp. 339–340). Here, Vygotsky presents *perezhivanie* as a conceptual prism through which environmental influences are subjectively refracted. While the social environment plays a critical role, it is ultimately the individual who transforms and reconfigures this environment through creative and emotionally charged engagement, which leads to the development.

Thus, a social situation can be conceptualized as a part of the social environment, presented as an event in which the child participates as an active agent (Veresov, 2016). The *social situation of development* emerges (or fails to emerge) within the social situation as a result of the child’s *perezhivanie* of particular elements of the situation — elements that are refracted through the child’s subjective, emotionally lived experience. It is only when the child actively engages with the social situation that it could become a source of development. In other words, the developmental potential of the environment is either realized or not, depending on whether the child becomes meaningfully involved in the social context. Consequently, in early childhood education, it is essential to create conditions that are the most conducive to the child’s engagement in the social situation — only then social situation can become a *social situation of development*.

Key components of project-based activity

Project-based activity is a form of interaction between adults (educators and parents) and children that emphasizes in supporting children’s initiative, engaging in in-depth exploration of topics relevant to their lives, and oriented toward the creation of a tangible product (Helm et al., 2023; Veraksa & Veraksa, 2008). This type of activity centers around a problem situation that is meaningful and relevant to the child. Problem situation is one that cannot be solved through direct, immediate action. As a result, the child requires collaboration with peers and adults. Together with the adult and other participants, the child explores a “space of possibilities”: analyzing potential solutions of the problem, selecting the most appropriate course

of action based on developed criteria, and ultimately realizing their plan in the form of a final product — such as a craft item, theatrical performance, mini-museum, or book etc. An essential component of project-based activity is the social presentation of the final product, typically within the peer group (e.g., in a kindergarten setting), where it receives social evaluation and positive feedback.

Two commonly recognized types of project-based activity in early childhood education are creative and research projects. Creative project-based activity focuses on producing an original creative product aligned with the ideas, needs, and transformative practices of children (Sidenko, 2008). It provides opportunities for children to express and realize their personal and social meanings, emotions, and ideas. In contrast, research project activity is oriented toward exploring questions that preschoolers have about observable phenomena and processes in everyday life, and understanding these from the perspective of scientific knowledge (Helm et al., 2023). Consequently, research projects primarily foster curiosity and exploratory learning behavior.

Thus, the key components of project-based activity include: the creation of a problem situation, movement within a “space of possibilities”, and the social presentation of the final product. Project-based activity inherently involves active peer interaction among children participating in the project. However, we argue that three core components mentioned above serve as conditions for the emergence of a social situation of development. At the same time, the specific nature of each type of project-based activity may determine whether the developmental potential inherent in the social situation is actualized within the project context.

Current study

In this study, settings of project-based activities that provide conditions for communicative development were investigated. The following research question was put forward: What conditions provide communicative development in project-based activities? To address this question double-blind control experiment was conducted to assess developmental effects of different social situations: creative project, research project and free play.

According to the cultural-historical theory (Filipi et al., 2023; Vygotsky, 1994), the idea of the importance of a child’s activity and subjective refraction of the social environment as a condition for the child development, two hypotheses were formulated:

1) Active group interaction is an insufficient condition for the emergence of a social situation of development. Whereas the creation of a problem situation, movement within a “space of possibilities”, and the social presentation of the product of activity creates sufficient conditions for realizing the developmental potential of social situation;

2) Creative project-based activity provides more favorable conditions than research project-based activity for the realization of a social situation of development. This assumption is based on the idea that creative project is more closely tied to children’s personal experiences and meanings.

Methods

Participants. The study was conducted in 2024 and involved an initial sample of 80 children (50% boys), aged between 5 and 6 years (mean age = 70.6 months), attending state-funded kindergartens in Moscow. Fourteen participants were excluded from the final analysis due to missing post-test data ($N = 3$), attending fewer than half of the sessions ($N = 7$), or absence in the video recordings used for analysis ($N = 4$). The final sample consisted of 66 children, including 34 boys (51.5%) and 32 girls (48.5%). Despite the fact that some children dropped out of the experiment for the reasons indicated, the groups maintained their equivalence in terms of gender and age composition (see Table 1). Informed written consent was obtained from the parents of all participants for both participation and video recording. The study protocol was approved by the Ethics Committee of the Faculty of Psychology at Lomonosov Moscow State University.

Table 1

Characteristics for Baseline and Final samples (sample size, gender distribution, mean age, age differences between groups)

Study group	Baseline sample			Final sample		
	N	Percentage of boys	Mean age (M±SD)	N	Percentage of boys	Mean age (M±SD)
Creative project group	20	50%	69.7±2.8	19	47 %	69.8±2.8
Research project group	20	50%	70.8±3.21	13	61%	69.6±3.55
Free play group	20	50%	72±1.73	15	53%	70.7±3.41
Control group	20	50%	70±3.42	19	38%	69.9±3.51
Gender distribution	$\chi^2(3) = 0, p = 1$			$\chi^2(3) = 4.65, p = 0.199$		
Age differences between groups (Kruskal – Wallis test)	$\chi^2(3) = 2.31, p = 0.68$			$\chi^2(3) = 0.873, p = 0.832$		

Procedure. The study employed a randomized experimental design with repeated measures. At the baseline stage, children’s communicative development was assessed using the MAIN and SCBE-30 instruments. Following the initial assessment, participants were randomly assigned to one of four groups: Creative Project, Research Project, Free Play, or a Control group. Each experimental condition (Creative Project, Research Project, Free Play) included 22 sessions, conducted in small groups of approximately 10 children. The sessions, lasting 20–30 minutes each, were held twice a week within the kindergartens. Different researchers were responsible for assessment and intervention, and the same experimenters remained with each experimental group throughout the intervention period. A post-test assessment, identical to the baseline measures, was conducted immediately after the intervention stage.

Sessions 4–6 and 18–20 in all groups were video-recorded using a smartphone to enable qualitative assessment of changes in children’s behavior and speech expressions. These recordings were subsequently evaluated by an expert who was

blind to the purpose of the study and had not been involved in either the assessment or the intervention. The expert used structured observational tools — the “Play Matrix” and its counterpart for project-based activity, the “Project Matrix” (Veraksa et al., 2022). These matrices function as observational maps encompassing behavioral, verbal, and emotional manifestations of children. They allow for the quantification of each type of manifestation within predefined categories. The *Project Matrix* included the following categories: impulsive actions, adult-prompted actions, self-initiated actions (within the context of project activity), extraordinary actions (in the context of project activity), emotional reactions, statements aimed at regulating others’ behavior, self-initiated statements related to the project, adult-prompted statements. The *Play Matrix* included: impulsive actions, role actions (in the context of play), extraordinary role actions (in the context of play), emotional reactions, statements aimed at regulating others’ behavior, and statements related to the play activity (including role-specific statements). These categories were selected for observation and recording because they reflect the child’s engagement in the social situation and the level of their active participation in the activity.

Measures. The assessment of communicative development included the evaluation of coherent speech and social competence.

To assess the *coherent speech* development the “MAIN: Multilingual Assessment Instrument for Narratives” (Gagarina et al., 2019) was used. This tool evaluates both the macrostructure and microstructure of children’s narratives. The methodology has been developed and validated on a Russian sample of children aged 3 to 10 years (Akhutina et al., 2024; Gagarina et al., 2019). Additionally, macrostructural assessment was supplemented by criteria developed by T.V. Akhutina (Akhutina et al., 2019) to evaluate the semantic completeness and adequacy of speech, complementing the MAIN instrument (Akhutina et al., 2024). To minimize learning and memorization effects, children were presented with two equivalent picture sequences: “The Nest” at pre-test and “The Baby Goats” at post-test, following the recommendations of the MAIN developers. Each sequence consists of six pictures grouped into three episodes. The sequences were printed and arranged as a fold-out picture book. Children were invited to look through the booklet and received the following instruction: “Now I’m going to show you some comics. Do you like comics? Look. What happened here? Tell me the story so it sounds like a real one. Try to tell it in as much detail as possible.” Children’s narratives were recorded using an audio recorder. After transcription, the number of words in the child’s story was recorded, and both macro- and microstructure were evaluated. The macrostructure (maximum score: 10 points) consists of two subscales, each rated from 1 to 10, with the final score calculated as their arithmetic mean: (1) narrative structuring, which included semantic completeness, internal coherence, and adherence to the narrative framework (goal—action—outcome), and (2) semantic adequacy, reflecting the correspondence of the story to the pictures and understanding of causal relationships. The microstructure (maximum score: 10 points) also consisted of two subscales, each rated from 1 to 10 and averaged: (1) lexical formulation, assessing lexical accuracy and morphological variety, and

(2) grammatical and syntactic formulation, evaluating grammatical correctness, syntactic structure, and overall complexity.

To assess *social competence*, an adapted Russian version of the short form of the “Social Competence and Behavior Evaluation” (SCBE-30) questionnaire for educators was used (Butovskaya & Demianovitsch, 2002). It includes three scales: Social Anxiety–Withdrawal, Anger–Aggression, and Social Competence. Each scale consists of 10 items describing children’s emotional and behavioral characteristics (total – 30 items). Educators were asked to rate each item on a 6-point scale, ranging from 1 (the behavior is never observed) to 6 (the behavior is consistently observed).

Intervention. In this study, four groups were formed: two experimental groups (Creative Project and Research Project) and two control groups (Free Play and Control group).

In the Creative Project group, children completed two group projects: a space-themed craft and a self-authored performance. During the sessions, the experimenter created a problem situation, which the children were encouraged to solve. The solution to the problem became the final product of the project (the craft and the performance). Children proposed their own ideas, sketches, models, or a draft of the play script. One of the proposals was then selected through voting. The experimenter stimulated discussions and supported children’s ideas. The group then moved on to planning and implementing the project based on the collaboratively developed plan. During implementation, the experimenter acted as a meeting organizer and assistant, helping with technical aspects of the work (e.g., finding necessary materials, cutting out complex shapes). The experimenter also guided the children’s reflection on their ideas and the meanings they embedded in the project, for example by asking, “How will the audience know from your costume that your character is kind?” or “Why did you choose to make X this color?”. Upon completion, the children presented their collective project at the kindergarten. Kindergarten staff (e.g., psychologists, cooks, security personnel) and children from other groups were invited to the presentation.

In the Research Project group, two group projects were also carried out—one about space and one about electricity. As in the Creative Project group, the experimenter introduced a problem situation that the children were encouraged to solve. However, in this case, the solution was framed as an answer to a research question, which was presented in the form of a project product. For example, children might formulate questions such as: “How can we build a dollhouse with working lights?” or “What do you need to know about space to go on a space journey?”. The experimenter then helped the children create a plan for finding the answers, gather and record information, design a final product, and present their findings to peers and adults. As in the Creative Project group, the experimenter served as a meeting organizer and assistant, helping children reflect on the usefulness and significance of their findings — for instance, by asking, “Who could benefit from this information?” or “What do you think is the most important part?”. Upon completion, the children presented their collective projects at the kindergarten.

As an active control group, a Free Play group intervention was included to assess whether active group interaction among children could be sufficient to create a social situation of development. In this group, the experimenter helped children start a role play by facilitating a discussion about the play theme and assigning roles. After that, the experimenter did not intervene. Free play sessions took place in an enriched environment with non-play-specific materials such as sticks, cones, boxes, leaves, pencils, jars, and ribbons. These materials were included to diversify play themes and stimulate peer interaction.

No specific activities were organized in the Control group.

Data analyses. All statistical analyses were conducted using Jamovi version 2.5.7. Prior to the main analyses, descriptive statistics and preliminary checks for group equivalence were performed. The Kruskal — Wallis test (one-way ANOVA on ranks) was used to verify the absence of significant differences between the experimental groups at the pre-test stage for all measures. To assess the effectiveness of the interventions, gain score analyses were conducted by comparing the differences between pre- and post-test scores across the four groups. The Kruskal — Wallis test was used to identify overall group differences, followed by pairwise comparisons using the Dwass — Steel — Critchlow — Fligner (DSCF) procedure when appropriate. For the analysis of social situations of development based on observational data, both between-group and within-group comparisons were conducted. Between-group differences at the beginning and end of sessions were analyzed using the Kruskal — Wallis test. Changes within groups over time were evaluated using the Wilcoxon signed-rank test for paired samples. Effect sizes were calculated using epsilon-squared (ϵ^2) for between-group comparisons and r for within-group comparisons. All significance levels were set at $p < 0.05$.

Results

Preliminary analysis and descriptive statistics

At the pre-test stage, the study groups (final sample only) did not differ significantly on any measured indicators, according to the results of a one-way ANOVA on ranks (the Kruskal — Wallis test, $p > 0.05$ for each indicator). Table 2 presents descriptive statistics, including mean scores and standard deviations for each measured indicator of communicative development at both pre- and post-test stages across the four study groups, as well as the results of the Kruskal — Wallis test assessing group differences. The groups had an equal gender distribution ($\chi^2(3) = 4.65$, $p = 0.199$). No significant gender-based differences were found in the baseline assessment (Kruskal — Wallis test, $p > 0.05$ for all indicators). Therefore, subsequent analyses of group differences were conducted without controlling for gender.

Table 3 presents the descriptive statistics for the categories of the Project Matrix and the Play Matrix, based on the results of categorical observation of video-recorded sessions as well as the results of the Wilcoxon signed-rank test assessing within group differences.

Table 2

Descriptive Statistics and results of the Kruskal — Wallis test for indicators of communicative development in different study groups

Indicators / Groups	Pre-test, M±SD	Kruskal – Wallis test, <i>p</i>	Post-test, M±SD	Kruskal – Wallis test, <i>p</i>
Word count in the narrative				
Creative project group	42.1 ± 17.9	0.798	64.9 ± 24.3	0.100
Research project group	38.8 ± 17		33 ± 16.7	
Free play group	42.2 ± 11.1		53.2 ± 12	
Control group	43.6± 15.9		48.4 ± 24.5	
Macrostructure of the narrative				
Creative project group	4.79 ± 1.62	0.742	5.87± 1.32	0.002
Research project group	4.62 ± 1.12		4.92 ± 1.4	
Free play group	4.93 ± 0.884		5.43 ± 0.98	
Control group	4.53 ± 1.39		4.18 ± 1.19	
Microstructure of the narrative				
Creative project group	5.26 ± 1.19	0.177	5.79 ± 1.54	0.05
Research project group	4.92 ± 1.19		4.85 ± 1.11	
Free play group	4.4 ± 0.986		5.33 ± 0.957	
Control group	5 ± 1.2		4.63 ± 1.95	
Anxiety—Withdrawal				
Creative project group	18.3 ± 7.56	0.482	15.6 ± 5.14	< 0.001
Research project group	15.7 ± 5.17		14.4 ± 3.45	
Free play group	20.3 ± 7.83		22.6 ± 8.13	
Control group	19.9 ± 10.2		24.4 ± 8.67	
Anger—Agression				
Creative project group	22.2 ± 9.34	0.078	21.7 ± 10.8	0.556
Research project group	18.8 ± 6.8		17.4 ± 7.31	
Free play group	19.2 ± 8.77		21.2 ± 9.86	
Control group	15.1 ± 4.6		19 ± 7.89	
Social Competence				
Creative project group	40.1 ± 10.4	0.652	39.8 ± 8.57	0.468
Research project group	39.9 ± 9.6		40.2 ± 10.9	
Free play group	39.7 ± 12.2		42.9 ± 13.4	
Control group	35.1 ± 11.4		36.4 ± 10.1	

Table 3

Descriptive Statistics and within group comparison for categories of the Project Matrix and the Play Matrix in different study groups

Categories of the Project Matrix / Play Matrix	4-6 sessions	18–20 sessions	Wilcoxon test
	M±SD	M±SD	
Impulsive actions/ Impulsive actions			
Creative project group	6.47 ± 5.48	7.32 ± 9.21	W = 70, p = 0.512
Research project group	7.42 ± 7.87	8.23 ± 6.18	W = 29, p = 0.475
Free play group	6.87 ± 4.14	6.1 ± 4.34	W = 22.5, p = 0.168
Adult-prompted actions / —			
Creative project group	2.05 ± 2.88	0.42± 0.84	*W = 60.5, p = 0.016, r = −0.833
Research project group	0.08 ± 0.289	0.31 ± 0.63	W = 29, p = 0.475
Free play group	—	—	—
Self-initiated actions (within the context of project activity)/ role actions (in the context of play)			
Creative project group	4.95 ± 5.66	6.47 ± 4.02	*W = 1.5, p < 0.001, r = 0.982
Research project group	0.583± 0.996	1.54 ± 1.51	*W = 2, p = 0.006, r = 0.939
Free play group	6.07 ± 4.59	6.42 ± 5.02	W = 37.5 p = 0.355
Extraordinary actions / Extraordinary actions			
Creative project group	0.05 ± 0.229	0 ± 0	W = 1, p = 1
Research project group	0 ± 0	0.23 ±0.60	W = 1, p = 1
Free play group	0.133 ± 0.352	0.17 ± 0.58	W = 1, p = 1
Emotional reactions / Emotional reactions			
Creative project group	6.63 ± 5.55	9.58 ± 5.19	*W = 26.5, p = 0.011, r = 0.69
Research project group	5.58 ± 8.5	8 ± 6.56	*W = 14.5, p = 0.026, r = 0.579
Free play group	2.33 ± 2.16	3.25 ± 1.6	*W = 2, p = 0.029, r = 0.889
Statements aimed at regulating others' behavior / Statements aimed at regulating others' behavior			
Creative project group	0.579 ± 0.607	1.37 ± 1.57	*W = 82.5, p = 0.058, r = 0.571
Research project group	0.25 ± 0.622	0.31 ± 0.48	W = 2.5, p = 0.424
Free play group	0.33 ± 0.724	0.25 ± 0.62	W = 1.5, p = 1
Self-initiated statements related to the project activity / Statements related to the play activity (including role statements)			
Creative project group	8.9 ± 4.195	17.82 ± 5.36	*W = 0, p < 0.001, r = 0.999
Research project group	6 ± 3.745	15.65 ± 4.66	*W = 2.5, p = 0.008, r = 0.924
Free play group	5.27 ± 3.29	5.59 ± 2.51	W = 14.5, p = 0.108
Adult-prompted statements / —			
Creative project group	1.74 ± 1.76	0.89 ± 0.99	W = 90.5, p = 0.084
Research project group	2.17 ± 2.25	1.23 ± 1.74	W = 25, p = 0.073
Free play group	—	—	—

Note: * indicates statistically significant within group changes

Comparative Analysis of Communicative Development Effectiveness

A one-way ANOVA on ranks was conducted to examine group differences in score changes from pre-test to post-test (gain score analysis). For narrative macro-structure, significant differences between groups were identified (Kruskal — Wallis test, $\chi^2(3) = 10.62$, $p = 0.014$, $\varepsilon^2 = 0.16$). Children in the Creative Project group exhibited a significantly greater improvement in this indicator compared to the Control group (DSCF, $W = 4.47$, $p = 0.009$). Significant group differences were also found for narrative microstructure scores (Kruskal — Wallis test, $\chi^2(3) = 8.76$, $p = 0.033$, $\varepsilon^2 = 0.13$). Pairwise comparisons did not identify specific differences. It was revealed that the groups differed in the changes of anxiety-withdrawal scores (Kruskal — Wallis test, $\chi^2(3) = 11.44$, $p = 0.01$, $\varepsilon^2 = 0.17$). Children in the Creative Project group showed a greater reduction in anxiety compared to the Control group (DSCF, $W = -3.64$, $p = 0.049$). Significant group differences were also found for anger-aggression (Kruskal — Wallis test, $\chi^2(3) = 14.62$, $p = 0.02$, $\varepsilon^2 = 0.22$). Preschoolers in the Creative (DSCF, $W = -4.123$, $p = 0.019$) and Research Project groups (DSCF, $W = -4.56$, $p = 0.007$) demonstrated stable scores on this indicator, while the level of aggression increased significantly in the Control group. No significant group differences were found for the remaining indicators.

Analysis of Social Situations of Development in study groups

A one-way ANOVA on ranks was conducted to assess differences in children's engagement in activities between the two project groups at the beginning of the sessions, as well as to evaluate changes from the start to the end of the sessions based on categorized observational data collected using the Project Matrix and the Play Matrix. The results indicated that already during the initial sessions, the project groups differed in the number of children's self-initiated actions (Kruskal — Wallis test, $\chi^2(1) = 13.98$, $p < 0.001$, $\varepsilon^2 = 0.466$) and the number of utterances aimed at regulating the behavior of other participants (Kruskal — Wallis test, $\chi^2(1) = 4.76$, $p = 0.029$, $\varepsilon^2 = 0.159$). In both cases, higher values were observed in the Creative Project group. At the same time, significant group differences were found for the change in the number of adult-prompted actions (Kruskal — Wallis test, $\chi^2(1) = 6.32$, $p = 0.012$, $\varepsilon^2 = 0.211$). A significantly greater decrease in this type of behavior was observed in the Creative Project group compared to the Research Project group.

To assess the dynamics of the social situation of development within the groups, the Wilcoxon signed-rank test was applied. In the Creative Project group, a significant increases were observed in the number of self-initiated actions (Wilcoxon test, $W = 1.5$, $p < 0.001$, $r = 0.982$), self-initiated statements (Wilcoxon test, $W = 0$, $p < 0.001$, $r = 0.999$), utterances aimed at regulating others' behavior (Wilcoxon test, $W = 82.5$, $p = 0.058$, $r = 0.571$), and expressive emotional reactions (Wilcoxon test, $W = 26.5$, $p = 0.011$, $r = 0.69$). A significant decrease was found in the number of adult-prompted actions (Wilcoxon test, $W = 60.5$, $p = 0.016$, $r = -0.833$). In the Research Project group, significant growth was noted in the number of self-initiated actions (Wilcoxon test, $W = 2$, $p = 0.006$, $r = 0.939$),

self-initiated statements (Wilcoxon test, $W = 2.5$, $p = 0.008$, $r = 0.924$), and expressive emotional reactions (Wilcoxon test, $W = 14.5$, $p = 0.026$, $r = 0.579$). In the Free Play group, there was a significant increase in the number of expressive emotional reactions (Wilcoxon test, $W = 2$, $p = 0.029$, $r = 0.889$). No significant changes were identified for the other matrix categories in any of the groups.

Discussion

The present study aimed to investigate the conditions that contribute to the emergence of a social situation of development. Specifically, the study compared the impact of different types of activities — creative project, research project, and free group play — on communicative development in preschool children. In addition, the internal processes unfolding within these types of activities were analyzed to clarify how children engage in different formats of interaction. The results demonstrated that participation in the creative project was associated with significant improvements in the macrostructure of speech, a reduction in social anxiety, and a stabilization of anger and aggression indicators. The research project was found to be effective only in stabilization of anger and aggression indicators. Free group play did not show significant changes in communicative development. These findings are supported by video analysis, which showed that children in the creative project were most actively engaged in the activity and demonstrated high levels of initiative, thereby increasing the likelihood of realizing a developmental potential of social situation.

In the Creative Project group, children exhibited a higher number of self-initiated actions and regulatory utterances from the very beginning of the sessions, suggesting that the creative format more effectively engaged children in autonomous and socially oriented behaviors. Over time, this group also showed a marked decrease in adult-prompted actions, along with an increase in the number of self-initiated actions, self-initiated statements, and utterances aimed at regulating the behavior of others. These dynamics indicate a growing internalization of initiative and the voluntary nature of higher mental functions — core features of a maturing social situation of development (Klopotova & Yaglovskaya, 2024; Vygotsky, 2019). From the perspective of cultural-historical approach, not all changes in activity and interaction are considered developmental. The changes in the social situation that create conditions for development may take several forms: (1) a contradiction or “small drama” (Veresov, 2015, p. 59); (2) a child’s transition to a qualitatively new level of functioning (e.g., from unmediated to mediated actions); (3) the shift from using external signs to employing them as internal means of organizing behavior and activity; or (4) a child’s movement within the zone of proximal development, where the level of potential development becomes the level of actual development (Veresov, 2024). In the study, within the Creative Project group, children transitioned from relying on external means of behavior regulation (through adult questioning, prompting, and directives) to internal regulation of their own and others’ behavior. This shift may indicate qualitative

changes in development, suggesting that the developmental potential of the social situation of development was realized.

What specific conditions contributed to the realization of the social situation of development in the project-based activity? The present study demonstrates that the mere organization of joint group activities is not sufficient for achieving a developmental effect. Rather, certain conditions appear to be essential for the emergence and realization of a social situation of development. In our view, the creation of a problem situation, movement within a “space of possibilities,” the social presentation of a final product, and personal reflection on the meaning embedded in that product are the key components contributing to the realization of such a situation. These aspects generate dramatic moments or challenges that are refracted through the child’s *perezhivanie* (Veraksa et al., 2023). This refracted experience leads to qualitative changes in the child’s mental functions and transforms the way the child becomes aware of, interprets, and relates to their sociocultural environment. For instance, a child may begin to perceive the social situation as interesting and supportive, which, in turn, fosters initiative and active participation. This reorganization of perception transforms the broader social situation of development, for instance decreasing the degree of adult control and supporting the child’s agency. In the Creative Project, such conditions were intentionally designed: dramatic or challenging moments were embedded in the activities and offered opportunities for transformation through *perezhivanie*. These experiences functioned as “turning points” in the child’s individual developmental trajectory, leading to observable qualitative shifts in behavior and communication.

However, the developmental potential of a social situation may remain unrealized, as was observed in the Free Play group. Although role play is considered to be the leading activity in preschool age (Elkonin, 2005; Ryabkova & Sheina, 2023), our study did not find significant changes in communicative development within this experimental condition. In role play, *perezhivanie* typically unfolds through maintaining the balance between the real and the imaginary levels of the play, a phenomenon known as “double subjectivity” (Kravtsov & Kravtsova, 2010). Children simultaneously experience themselves as characters within the play and as children above the play who direct and shape its course. Through this dual perspective — both living and reflecting upon social roles — they gradually come to a conscious understanding of the social world (Elkonin, 2005). The imaginary situation is a necessary condition for the emergence of a social situation of development in play (Veraksa et al., 2023; Vygotsky, 2016). However, our observations revealed that children in the Free Play group often fell out of the imaginary situation. They became distracted by objects or impulsive actions; for example, children frequently addressed each other by real names rather than by character names or assigned roles. The observed increase in emotional expressions throughout the play sessions may reflect the rise in non-role behaviors, such as rough-and-tumble play. This finding underscores the role of spontaneous play in emotional expression (Hewes, 2014), but also highlights its limitations in promoting structured communicative development.

The study has several **limitations**. Although the sample size was sufficient for detecting significant effects, it nonetheless limits the generalizability of the findings to broader populations. Future research should explore longitudinal effects and examine individual differences in responsiveness to various conditions. Additionally, qualitative analyses of children's dialogues may shed further light on the mechanisms driving the observed developmental changes.

Conclusion

This study provides evidence that the realization of a social situation of development in preschool children is not merely a consequence of group participation, but rather depends on specific pedagogical conditions embedded within the activity and emotionally charged engagement of children. Among the three formats examined, the creative project demonstrated the greatest developmental potential, particularly in fostering communicative development. These effects were supported by observed increases in self-initiated actions and regulatory utterances, indicating a shift toward more autonomous and socially meaningful behavior. The research project showed a more limited effect, while free group play, despite its well-established role in early development, did not lead to measurable communicative gains within the current context.

The findings highlight the importance of structuring activity around meaningful challenges, social collaboration, and opportunities for personal reflection — conditions that can trigger developmental transformations through the mechanism of *perezhivanie*. When such conditions are present, the social situation becomes a powerful context for the development of higher mental functions. These findings support the cultural-historical understanding of development as rooted in the quality of a child's active participation in socially meaningful activity. The results have practical implications for the design of educational interventions aimed at supporting children's communicative development.

References

- Akhutina, T.V., Bukhalenkova, D.A., Korneev, A.A., Matveeva, E.Y., Oshchepkova, E.S., & Shatskaya, A.N. (2024). Neuropsychological approach to assessment of narrative skills in 5 years-old children. *Panamerican Journal of Psychology*, 18(2), 113–121. <https://doi.org/10.7714/CNPS/18.2.209>
- Akhutina, T.V., Korneev, A.A., Oshchepkova, E.S., Panikratova, Ya.R., & Matveeva, E.Yu. (2019). Understanding of grammatical constructions and story creation in first-, second and third-graders. *Journal of Psycholinguistic*, (1), 58–81. (In Russ.) <https://doi.org/10.30982/2077-5911-2019-39-1-58-81>
- Başaran, M., & Bay, E. (2023). The effect of project-based STEAM activities on the social and cognitive skills of preschool children. *Early Child Development and Care*, 193(5), 679–697. <https://doi.org/10.1080/03004430.2022.2146682>
- Berglund, E., Eriksson, M., & Westerlund, M. (2005). Communicative skills in relation to gender, birth order, childcare and socioeconomic status in 18-month-old children. *Scandinavian Journal of Psychology*, 46(6), 485–491. <https://doi.org/10.1111/j.1467-9450.2005.00480.x>

- Butovskaya, M.L., & Demianovitsch, A.N. (2002). Social competence and behavior evaluation (SCBE-30) and socialization values (SVQ): Russian children ages 3 to 6 years. *Early Education and Development*, 13(2), 153–170. https://doi.org/10.1207/s15566935eed1302_3
- Elkonin, D.B. (2005). The psychology of play. *Journal of Russian & East European Psychology*, 43(1), 11–21. <https://doi.org/10.1080/10610405.2005.11059245>
- Ferholt, B. (2010). A synthetic-analytic method for the study of perezhivanie: Vygotsky's literary analysis applied to play worlds. In M.C. Connery, V.P. John-Steiner, A. Marjanovic-Shane (Eds.), *Vygotsky and Creativity: A Cultural Historical Approach to Play, Meaning Making, and the Arts* (pp. 163–180). New York: Peter Lang.
- Filipi, A., Davidson, C., & Veresov, N. (2023). *Conversation analysis and a cultural-historical approach: Comparing research perspectives on children's storytellings*. Cham: Palgrave Macmillan. <https://doi.org/10.1007/978-3-031-31941-9>
- Gagarina, N., Klop, D., Kunnari, S., Tantele, K., Välimaa, T., Bohnacker, U., & Walters, J. (2019). MAIN: Multilingual assessment instrument for narratives – Revised. *ZAS Papers in Linguistics*, 63, 20. <https://doi.org/10.21248/zaspil.63.2019.516>
- Helm, J. H., Katz, L. G., & Wilson, R. (2023). *Young investigators: The project approach in the early years* (4th ed.). New York: Teachers College Press.
- Hewes, J. (2014). Seeking balance in motion: The role of spontaneous free play in promoting social and emotional health in early childhood care and education. *Children*, 1(3), 280–301. <https://doi.org/10.3390/children1030280>
- Ismail, R., & Subagyo, T. (2023). Project based learning model to improve early childhood social skills in ternate. *Daengku: Journal of Humanities and Social Sciences Innovation*, 3(2), 300–312. <https://doi.org/10.35877/454ri.daengku1512>
- Klopotova, E.E., & Yaglovskaya, E.K. (2024). On the possibilities of regulating cognitive activity by older preschoolers. *Lomonosov Psychology Journal*, 47(3), 182–206. (In Russ.) <https://doi.org/10.11621/lpj-24-34>
- Kravtsov, G.G., & Kravtsova, E.E. (2010). Play in L.S. Vygotsky's nonclassical psychology. *Journal of Russian & East European Psychology*, 48(4), 25–41. <https://doi.org/10.2753/rpo1061-0405480403>
- Lowenthal, F. (2013). Communication in early childhood. In L.P. Steffe, T. Wood (Eds.), *Transforming children's mathematics education: International perspectives* (pp. 191–199). New York: Routledge. <https://doi.org/10.4324/9780203052372-26>
- Ryabkova, I.A., & Sheina, E.G. (2023). On the play of a child and an actor: to the question of the transformations in experience. *National Psychological Journal*, 18(3), 137–146. (In Russ.) <https://doi.org/10.11621/npj.2023.0313>
- Sidenko, A.S. (2008). Types of projects and stages of design. *Municipal Education: Innovations and Experiment*, (2), 76–79. (In Russ.)
- Veraksa, A.N., & Veraksa, N.E. (2008). Organization of project activity in kindergarten. *Pre-school Education Today*, (2), 16–20. (In Russ.)
- Veraksa, N.E., Veresov, N.N., & Sukhikh, V.L. (2022). The play matrix: A tool for assessing role-play in early childhood. *International Journal of Early Years Education*, 30(3), 542–559. <https://doi.org/10.1080/09669760.2022.2025582>
- Veraksa, N.E., Veraksa, A.N., & Plotnikova, V.A. (2023). Pretend play and project-based learning as factors in the development of preschool children. *RUDN Journal of Psychology and Pedagogics*, 20(3), 431–445. <https://doi.org/10.22363/2313-1683-2023-20-3-431-445>
- Veresov, N.N. (2015). Experimental-genetic method and psychology of consciousness: In search of the lost (Part two). *Cultural-Historical Psychology*, 11(1), 117–126. <https://doi.org/10.17759/chp.2015110113>
- Veresov, N., & Fleer, M. (2016). Perezhivanie as a theoretical concept for researching young children's development. *Mind, Culture, and Activity*, 23(4), 325–335. <https://doi.org/10.1080/10749039.2016.1186198>

- Veresov, N. (2019). Subjectivity and perezhivanie: Empirical and methodological challenges and opportunities. In G.F. Rey, A.M. Martinez, & D. Goulart (Eds.), *Subjectivity within Cultural-Historical Approach* (pp. 61–86). Singapore: Springer.
- Veresov, N.N. (2024). The problem of data analysis in cultural-historical research. *Cultural-Historical Psychology*, 20(3), 77–86. <https://doi.org/10.17759/chp.2024200308>
- Vygotsky, L.S. (1994). The problem of the environment. In R. van der Veer, J. Valsiner (Eds.). *The Vygotsky reader* (pp. 338–354). Oxford: Blackwell.
- Vygotsky, L.S. (2016). Play and its role in the mental development of the child (with Introduction and Afterword by N. Veresov and M. Barrs, Trans.). *International Research in Early Childhood Education*, 7(2), 3–25. <https://doi.org/10.4225/03/584e715f7e831>
- Vygotsky, L.S. (2019). *L.S. Vygotsky's Pedological Works. Volume 1. Foundations of Pedology. Perspectives in Cultural-Historical Research*. Singapore: Springer. <https://doi.org/10.1007/978-981-15-0528-7>
- Vygotsky, L.S., & Rieber, R.W. (Ed.). (1997). *The collected works of L.S. Vygotsky, Vol. 4. The history of the development of higher mental functions*. (M. J. Hall, Trans.). New York: Springer. <https://doi.org/10.1007/978-1-4615-5939-9>
- Widayanti, M.D., & Setiawati, F.A. (2019). Project based learning improves 5-6 years olds cooperative skills. *Joint Proceedings of the International Conference on Social Science and Character Educations (IcoSSCE 2018) and International Conference on Social Studies, Moral, and Character Education (ICSMC 2018). Advances in Social Science, Education and Humanities Research* (pp. 13–18). Dordrecht: Atlantis Press. <https://doi.org/10.2991/icosce-icsmc-18.2019.3>

Article history:

Received 30 November, 2024

Revised 20 December, 2024

Accepted 23 December, 2024

Authors' contribution:

Valeria A. Plotnikova — investigation, statistical analysis, text writing, text editing. Aleksander N. Veraksa — supervision, conceptualization, methodology, text writing.

For citation:

Plotnikova, V.A., & Veraksa, A.N. (2025). Project-based activities to enhance communicative development in young children: Findings of a double-blind control study. *RUDN Journal of Psychology and Pedagogics*, 21(4), 7–24 <http://doi.org/10.22363/2313-1683-2025-22-1-7-24>

Conflicts of interest:

The authors declare that there is no conflict of interest.

Bio notes:

Aleksander N. Veraksa, Doc. in Psychology, Professor, Full Member of the Russian Academy of Education, Head of the Department of Psychology of Education and Pedagogy, Faculty of Psychology, Lomonosov Moscow State University (11 bldg. 9 Mokhovaya St, Moscow, 125009, Russian Federation). Head of the Laboratory of Psychology of Childhood and Digital Socialization, Federal Scientific Center of Psychological and Multidisciplinary Research (9 bldg. 4 Mokhovaya St, Moscow, 125009, Russian Federation). ORCID: 0000-0002-7187-6080. E-mail: veraksa@yandex.ru

Valeria A. Plotnikova, Junior Researcher, Laboratory of Psychology of Childhood and Digital Socialization, Federal Scientific Center of Psychological and Multidisciplinary Research (9 bldg. 4 Mokhovaya St, Moscow, 125009, Russian Federation). PhD student, the Department

of Psychology of Education and Pedagogy, Faculty of Psychology, Lomonosov Moscow State University (11 bldg. 9 Mokhovaya St, Moscow, 125009, Russian Federation). ORCID: 0000-0003-1092-3290. +79854547544 E-mail: ler.shinelis@yandex.ru

DOI: 10.22363/2313-1683-2025-22-1-7-24

EDN: TGHNGT

УДК 37.015.31

Исследовательская статья

Проектная деятельность как средство коммуникативного развития детей дошкольного возраста: результаты двойного слепого контролируемого эксперимента

В.А. Плотникова^{1,2} , А.Н. Веракса^{1,2} 

¹ Московский государственный университет имени М. В. Ломоносова, *Российская Федерация, Москва*

² Федеральный научный центр психологических и междисциплинарных исследований, *Российская Федерация, Москва*
 ler.shinelis@yandex.ru

Аннотация. Проектная деятельность становится всё более популярным средством поддержки коммуникативного развития в дошкольном образовании. При этом, несмотря на наличие большого количества исследований, оценивающих результаты проектной деятельности, конкретные механизмы, с помощью которых эта форма работы способствует развитию ребенка, остаются недостаточно изученными. В настоящем исследовании проанализированы условия, способствующие развитию коммуникативных навыков детей дошкольного возраста в процессе проектной деятельности. Было проведено двойное слепое рандомизированное контролируемое исследование с участием 66 детей в возрасте 5–6 лет. Дети были распределены в четыре группы: «творческий проект», «исследовательский проект», «свободная игра» и контрольная группа. Для диагностики коммуникативного развития использовались методики MAIN (Multilingual Assessment Instrument for Narratives) для оценки связной речи и SCBE-30 (Social Competence and Behavior Evaluation) для оценки социальной компетентности. Дополнительно проводился структурированный анализ видеозаписей сессий с применением «матрицы игры» и «матрицы проекта». Результаты показали, что дети, участвовавшие в группе творческого проекта, продемонстрировали значимо более выраженные улучшения в развитии макроструктуры повествования, снижение показателей социальной тревожности и стабильный уровень агрессии по сравнению с другими группами. Кроме того, у детей этой группы были зафиксированы более высокие показатели инициативных действий и регулирующей речи наряду с уменьшением действий, происходящих по инициативе взрослого, что указывает на более высокий уровень интериоризации инициативности и субъектности. Полученные данные подчеркивают важность организации деятельности на основе решения значимых задач, совместного взаимодействия и личностного смысла, поскольку именно эти элементы способствуют развитию через процесс переживания. Результаты исследования создают эмпирическую основу для разработки образовательных программ, направленных на поддержку коммуникативного развития детей дошкольного возраста, и могут стать основой для дальнейших исследований механизмов психического развития ребенка.

Ключевые слова: культурно-исторический подход, дошкольный возраст, социальная ситуация развития, переживание, сюжетно-ролевая игра, проектная деятельность, коммуникация, связная речь.

Финансирование. Исследование выполнено при поддержке Российского научного фонда (проект № 23-18-00506).

История статьи:

Поступила в редакцию 30 ноября 2024 г.

Доработана после рецензирования 20 декабря 2024 г.

Принята к печати 23 декабря 2024 г.

Вклад авторов:

В.А. Плотникова — проведение экспериментального исследования, статистический анализ, написание текста, редактирование текста. *А.Н. Веракса* — научное руководство, концептуализация, методология, написание текста.

Для цитирования:

Plotnikova V.A., Veraksa A.N. Project-based activities to enhance communicative development in young children: Findings of a double-blind control study // Вестник Российского университета дружбы народов. Серия: Психология и педагогика. 2025. Т. 22. № 1. С. 7–24. <http://doi.org/10.22363/2313-1683-2025-22-1-7-24>

Заявление о конфликте интересов:

Авторы заявляют об отсутствии конфликта интересов.

Сведения об авторах:

Александр Николаевич Веракса, доктор психологических наук, профессор, академик Российской академии образования, заведующий кафедрой психологии образования и педагогики факультета психологии, Московский государственный университет имени М.В. Ломоносова (Российская Федерация, 125009, Москва, ул. Моховая, д. 11, стр. 9); руководитель лаборатории психологии детства и цифровой социализации, Федеральный научный центр психологических и междисциплинарных исследований (Российская Федерация, 125009, Москва, ул. Моховая, д. 9, стр. 4). ORCID: 0000-0002-7187-6080. E-mail: veraksa@yandex.ru

Валерия Андреевна Плотникова, младший научный сотрудник лаборатории психологии детства и цифровой социализации, Федеральный научный центр психологических и междисциплинарных исследований (Российская Федерация, 125009, Москва, ул. Моховая, д. 9, стр. 4). Аспирант кафедры психологии образования и педагогики факультета психологии, Московский государственный университет имени М.В. Ломоносова (Российская Федерация, 125009, Москва, ул. Моховая, д. 11, стр. 9). ORCID: 0000-0003-1092-3290. Тел.: +7-985-454-75-44. E-mail: ler.shinelis@yandex.ru