

# Group work as a means of formation and development of primary school children communication skills at science lessons

## El trabajo en grupo como medio de formación y desarrollo de las habilidades de comunicación de los niños de la escuela primaria en las clases de ciencias

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### Contents

1. Introduction

2. Methodology

3. Results

4. Conclusions

Bibliographic references

#### ABSTRACT:

The article is devoted to the process of formation and development of communication skills of primary school children through organization of group work. It substantiates the importance of group work, identifies difficulties in the organization of joint activities of pupils and provides recommendations to overcome them. It uncovers effective methods and techniques of group work organization while studying the course "Surrounding world" at primary school. The article pays much attention to the phases of organization of group work.

**Keywords:** communication skills, Science lessons, group methods, educational cooperation

#### RESUMEN:

El artículo está dedicado al proceso de formación y desarrollo de las habilidades de comunicación de los niños de la escuela primaria a través de la organización del trabajo en grupo. Refleja la importancia del trabajo en grupo, identifica las dificultades en la organización de actividades conjuntas de los alumnos y proporciona recomendaciones para superarlos. Descubre métodos y técnicas eficaces de organización de trabajo en grupo mientras estudia el curso "Mundo circundante" en la escuela primaria. El artículo presta mucha atención a las fases de organización del trabajo en grupo.

**Palabras clave:** habilidades comunicativas, lecciones de ciencia, métodos grupales, cooperación educativa.

## 1. Introduction

The changes taking place in the modern society require rapid improvement of the educational environment, setting educational targets, which are aimed at the state, social and personal needs and interests. Modern education is focused on the formation and

development of pupils' socially significant communicative competences, among which there are abilities to listen and undertake dialogue, to participate in collective discussion on a number of issues, to cooperate and actively interact with other people, to express their thoughts correctly, to defend their points of view and be able to negotiate (Burgess, 2017). This is achieved through purposeful, active assignment of social experience to pupils.

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## 2. Methodology

The child learns to communicate and speak from an early age. By the time he enters school, he already has a number of speech skills. Achieving the results of communication activities requires developing specific skills, because the communication is not only the information transfer from one person to another, but also it reveals the behavioral side of people interacting. Psychological and pedagogical Sciences devote considerable attention to the development of speaking and writing abilities of junior schoolboys, including communicative and speech readiness of children before they start school (L.S. Vygotsky (1983), V.V. Davydov (1972), H.Y. Leymets (1975), D.E. Elkonin (1974), L.A. Wenger (2007), G.A. Zuckerman (2007)). The authors define primary school age as an important stage of socialization and development of personal communication skills. Their research shows not only the possibility of practical organization of effective forms of pupils cooperation aimed at teaching the school subjects, but also defines a positive impact of cooperation experience on the development of communication skills.

As an organizational form of learning in the dual system the group work provides significant opportunities for the formation of motivation achievements, which helps to enhance the self-esteem, to develop such communication skills as interacting, mutual influence, understanding. Learning dialogue in this case is the most favorable for the manifestation and development of the pupil's personality. Based on the theory of communicative activity approach developed by V.V. Davydov (1986) and others, as well as the generalization of best pedagogical experience in the organization of group activities, we pay attention to the difficulties experienced by teachers in the organization of joint work on the formation and development of communicative learning skills:

- group formation does not always go in a calm atmosphere, because children may be reluctant to gather in groups (in the classroom there are pupils who want to work independently);
- noisy group work;
- groups may be distracted from the educational task, may fail to identify with the tasks, may generate conflicts, may fail to move to the next phase of work;
- children often speak at the same time, do not listen to each other, do not try to help, do not ask for help, do not thank each other, do not respect someone else's opinion;
- some pupils do all the work in the group, while others shy away from group work, some feel insecure and refuse to work, some children try to command and show intolerance.

Teachers who try to use group work in their lessons face many obstacles at first. The failure of study groups is mainly due to either unwillingness or inability of pupils to work together. Providing primary school-age children with the skills of teamwork is a holistic process of their gradual inclusion in the situational communicative activities on the basis of creating a motivating environment of communication, which contributes the self-realization of the developing personality. Internal resistance, unwillingness, inability to establish joint work are overcome by methods of creating an atmosphere of trust, mutual support, security. To do this, it is important for the teacher to consider the principles of personality-oriented approach, cooperation, democratic style of relations, recognition the pupil as a subject of learning.

The group work requires the non-traditional organization of workplaces. Desks should be placed in such a way that every child can see his interlocutors, nobody sits back to visual materials, and everyone can get the educational supplies needed in the work, and reach the general sheet of paper, where the results of the work will be recorded.

Ways to create training groups can be different: on request, randomly, on the distribution by the teacher, at the choice of "leader". Numerous studies of pedagogical psychology and experience of practicing teachers suggest that it is impossible to allow arbitrary acquisition of groups of pupils sitting at one or neighboring desks. When recruiting groups, at least two characteristics should be considered: the level of educational success of pupils and the nature of interpersonal relations (Leymets, 1975). When creating groups according to the level of training, it is recommended to take into account the specifics of the subject. In such subjects as mathematics, the Russian language is advisable to create a group of pupils about the same performance. The level of academic performance has not the fundamental importance by teaching the subject "Science". Joint fulfillment of the task by the group, consisting of weaker and strong pupils, may cause concern by teachers. In this case a strong pupil will be a leader and do the tasks. By incorrectly based groups some pupils can benefit from the work of stronger classmates. Thus the role of the teacher, who will seek to create equal cooperation between the participants on the basis of dialogue, is very important. For example, a weak pupil is appointed as the leader who will speak on behalf of the whole group.

U.N. Kulyutkin (1985) considers that the group shows higher efficiency of joint activity if the character of interpersonal relations of pupils is considered. If the members of the group are able to coordinate their actions, create a relationship of goodwill, in this case there is a psychological atmosphere of mutual understanding and mutual assistance, anxiety and fear are removed (Kulyutkin, 1985).

The group activity requires the teacher an elaborate system of actions, both at the phase of development of the group task, and at the lesson in the process of its organization. Group tasks are made exclusively for joint search of the solution, which can be prevented only in group for limited time. The structure of the task should be such that it can be divided into "subtasks", the implementation of which is distributed to all members of the group. It is important for the teacher to think in advance all the details of the upcoming work, to represent their own activities and the activities of pupils in group work.

The teacher monitors the work of the groups. He should be ready to help, but only at the request of the group, without giving preference to any of the groups. Interrupting the work should only be when the work of the group goes in the wrong direction or the pupils do not understand the learning task. Even if the group is not on task, the teacher does not give direct clues, but guide the activity in the right direction ("please, repeat what we agreed..." "We should have..." "Do I understand correctly that..." " Do we have enough time to choose this method?" "And what if you try ...?"). In the group there should be no forcing children to work together or expressing their negative attitude to someone who does not want to work. Later, it is necessary to find out the reason for the refusal of group interaction. Joint work in primary school should not exceed 10-15 minutes to avoid fatigue and reduce efficiency, and should not ask younger pupils for absolute silence, but it is necessary to prevent shouting, disrespectful attitude to other members of the group work.

The organization of the group activities changes the position of the teacher in the educational process, as he becomes an organizer of communicative activities of children. In primary school age, the development of communication begins with the formation of children's readiness to engage in the activities in class: the ability to give full answers to questions, to comment on the answers of other pupils; to make small messages; to construct successive speech. Further, pupils should learn to express their thoughts clearly and specifically, based on their personal social experience. Only after that the skills of communicative cooperation of children are practiced, such as conversational skills, interactivity, work in pairs and in groups, participation in the protection of the results of project tasks.

The programmatic content of each subject at the primary level of education reveals certain opportunities for the development of communicative abilities of pupils subject to the choice of the optimal way of organization of educational activities. The specificity of the course "Surrounding world" is a clearly expressed integrated nature, which combines the basics of natural, social and human Sciences, necessary for a holistic and systematic vision of the

world and its critical interrelationships. It is especially important to organize of group works on the lessons, where initiatives of pupils, the ability to defend their point of view, to find a solution in certain situations develop through the joint work. However, this importance is underestimated in practice of primary education, and group work is often not included in the process of building of learning competences, including communicative. The course "Surrounding world" should reflect two interlocking paths of development of communicative skills: the practice of speaking and the formation of a set of skills, which are based on the experience of effective interaction.

In our opinion, the effectiveness of the formation and development of communication skills in group work in studying the course "Surrounding world" can be provided, if the pedagogical conditions of formation and development of communicative skills are implemented in the organization of group work with the primary school-age children on the lessons, including:

- implementing practices and methods, that provide cognitive motivation of pupils and encourage active discussion of the task;
- realization of the principle of speech orientation of the educational process and the principle of collective interaction in the educational process.
- pedagogical support in the formation of subjective position and interaction of younger pupils in group activities, where each pupil could show initiative, openness, kindness, creativity;
- involving learners in the reflexive and evaluative activities of social and communicative experience.

To implement these pedagogical conditions, we have developed and tested a system of tasks for the group form of work on the Science lessons within the teaching methodology program "Perspectiva" for 2nd grade.

First we organized the work in pairs to prepare pupils for group work. Developing the ability to negotiate and communicate was important at the work in pairs. Children learned to look at the interlocutor during a conversation, speak quietly, call the interlocutor by name, and listen to the answer carefully, then, if necessary, to correct, supplement, evaluate. Through the work in pairs in considering of new material, by knowledge repeat, retention and monitoring, that is at any phase of the lesson, we brought the children to the discussion. Discussing is to talk points, to ask each other questions, to express one's opinion, to check each other.

We used the method "Snow Ball" – work in a group, which begins with the decision of an individual task, for a smooth transition from the work in pairs to the group work on the Science lessons. All pupils received similar tasks and performed them independently. This was followed by the work in pairs. In pairs, pupils offered their ways of solving the task, from which they chose the best. Then two pairs consolidated and continued to work in a group of four people, where there was a discussion of solutions again and pupils chose the best of them. At the end of the work all students were in the same group. At this last phase, the groups not discussed the decision but reported on their work.

The Brainstorming method was used to generate ideas with the distribution of roles within the group. For example, on the lesson about "Time" the pupils were divided into two groups: "generators of ideas" and "analysts". The first group had to offer as many ideas as possible regarding the problematic question: How can you determine the time if there are no watches? Analysts listened carefully, recorded the answers, then chose the best ideas and offered their own. Children offered such answers as making a phone call; ask a passer-by; determine the time by the position of the sun in the sky; the dog's behavior (whether it wants to walk) and others. This task helped pupils learn new material, express their opinions and argue their point of view.

The group work on the method "Continue" was organized in the study of the topic "Seasons" through the work with a set of large pictures depicting the seasons and sets of small pictures depicting objects used by people in a particular time of year (clothing, tools, games and sports equipment). Pupils collectively sorted out the subject pictures on the

corresponding images of the seasons and explained why they made such a choice.

Answering the questions «Why do people need different types of tools, equipment, and clothing at different times of the year? What will it depend on?», "How does the season affect people's lifestyle?" children mastered in group work not only the ability to make a coherent story, but also learned to identify cause-and-effect relationships.

At the lesson "How do different animals prepare for the winter to come" we organized the group work on the method «A treasure hunt». The groups answered the questions "What animals are preparing for hibernation?", "What animals change wool cover?", "What animals do stocks winter supplies?", "How do amphibians and reptiles prepare for winter?", and «Who flies away to warm territories»? They used the resources of the Internet, a textbook and additional literature. Preparation of answers was accompanied by heated discussions within the groups, almost immediately there were leaders who shared responsibilities - who will look for in the textbook, who on the Internet, who writes, who reads. Many children remembered the personal experience on the theme. Someone needed an encyclopedia. Some pupils got read fairy tales. Others gave examples from cartoons. At the end of the task, each group read out its answer, then assessed its activities and the activities of other groups.

Children were asked to answer the problem question of the lesson "Be healthy": What should be done to be healthy? To solve the problem, we organized a group work, where each group had to make its own list of actions to promote and preserve health.

We used the method "Basket of ideas" on the lesson "Our spaceship Earth". Each group expressed its assumptions on the theme "Earth is..." after a preliminary discussion. The method "Round-table discussion" was used on the lesson "The Calendar is the Time Keeper and Memory Guard". We offered the children to take turns saying, what calendar means to them.

Such methods and techniques as "Catch a mistake", "Puzzle", "Zigzag", "Group discussion", "Recognize me", "Bus stop", "Conflict" also contributed to the formation and development of pupils' ability to hear other people, to formulate their statement, to distribute responsibilities among themselves, to negotiate with each other, to evaluate the work of their group.

By using the method "Catch a mistake" the groups receive texts where they need to correct semantic mistakes. After completing the task, the groups check each other's work and evaluate it upon assigned criteria by the teacher.

The methodical technique "Puzzle" involves the division of the theme into several parts so that each group would get its part of the theme. Also, all groups receive a list of necessary sources or the training materials, with which they learn the basics of the proposed part of the topic. After studying the material or completing the task, the groups are reorganized so that each new group includes 1 person from each previous group. Each member of the new group explains to his new colleagues his part of the topic, the basis of which he studied in the previous group and answers questions. In conclusion, the work of the group should draw general conclusions.

Performing the task by the method of "Zigzag" involves combining into groups of 4-5 pupils to work on the training material, which is divided into fragments. Then the children studying the same question, but consisting in different groups, meet and exchange information as experts on this issue. This is called the "Meeting of experts". Then they return to their groups and teach everything they have learned from members of other groups. They, in turn, report on their part of the mission.

Using of methodical technique "Know me" under the topic "Spring in the world of insects" contributed to the development of skills as making the thoughts in writing and orally, listening and understanding the speech of others. Each group chose one insect and gave the clues and the other group guessed.

Work on the method "Bus stop" involves the distribution of groups to bus stops. We put a sheet of a large format with the questions according to theme at each stop (on a table). The groups' mission was to write down on sheet main ideas relevant to the question. The groups discussed the questions and recorded key ideas within 5 minutes. Then, on our command,

the groups moved clockwise to the next bus stop and got acquainted with the existing records, if necessary, supplemented them for 3 minutes. Existing records made by the previous group could not be corrected. Then there was the next transition to a new bus stop and another 3 minutes to meet, discuss and add their records. The group, returning to its first stop, for 3 minutes acquainted with all the records and determined the group member who will represent the material. After that, each group presented the results of the work on their issue. In conclusion, the teacher had to summarize what was said by all groups and, if necessary, makes adjustments and summarizes the results of the work.

The organization of group work with the use of these methods and techniques in its motivational orientation is similar to the game activity, which facilitated the assimilation of the lesson material and contributed to the formation and development of the following communication skills of the primary-age scholars: the ability to interact, cooperate and express their attitude; the ability to take into account the situation and the opinions of other participants; the ability to justify their point of view; the ability to evaluate themselves and friends; to recognize the feelings of others and own emotions; ability to express thoughts by verbal and non-verbal means. The participation of pupils in group play training situations and exercises provided the emergence of friendly relations between them, and group support caused a sense of security, and even the most timid and anxious children overcame their fears associated with the development of the lesson material.

It is important to have an individual search and exchange of ideas to ensure continued motivation to achieve educational success of primary school-age children in joint activities. First, everyone thinks and acts independently. Then there is an exchange of views and a general reflection on solving problems. The teacher must not to compel the work together, to require absolute silence, and punish the child with deprivation of the right to participate in joint work.

Informative and methodological supply of the process of formation of communication skills of pupils in group activities on the Science lessons relied on a phased work. We will reveal the phases of this work.

The group work began with the making assumptions and expressing of views by each participant. In the second grade, it is quite difficult for children to have a discussion in parallel with the selection of ideas. Therefore, at this stage it was important to teach children patience and respect for someone else's point of view and fixation on a piece of papers all the assumptions.

The second phase of the group work is devoted to the discussion of the ideas put forward. For a competent discussion, we tried to instill in pupils the ability to listen, to observe a certain order of discussion, to argue their consent or disagreement.

In the third phase of group work, children had to develop a group decision. This solution emerges in the process of critical discussion of the proposed solutions according educational problem and the choice of common solution for the group and the most optimal of them. The group was preparing for the reasoning behind their choice. Our pedagogical observation has shown that pupils find a general solution quite difficult, because there are often members who do not agree with the majority in the group. Since in groups pupils solved task-oriented problems, and it was important for us to bring them to a common way of solving educational problems (rule, pattern, algorithm, etc.), we tried to give the opportunity to put forward all reasoned ideas and present their own position to individual pupils.

The fourth phase is to discuss the results of the group work. When the representative of each group spoke, we recorded the views of the groups and then discussed them. We asked next questions to choose the correct solution: "Which of the suggested options do you like more? How is it different from others? What was the most important thing for you when choosing the right option? How do you see the most suitable option now? What requirements should it meet?" Thus, pupils are able to make independent formulation of the definition of the rules, assessment criteria, and optimal ways of learning activities.

If it was necessary to show the solution of the learning tasks in different ways, we asked questions: "Why are the results different? What is the main thing for the first, second and

other groups? And what more options could you offer?».

The fifth phase of group work is the reflexive discussion. Here we were asked questions related to: "What difficulties did you face in solving the learning tasks? Why it was difficult (easy) to cope with the task? What behavior of the group contributed to the work, and what interfered? What could be changed to make the discussion more productive?". The discussion brought the participants to reflection and therefore to develop the ability to work in a group. Every subsequent group work was successful only because some pupils realized the rules of discussion and saw the possibility of self-improvement.

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### **3. Results**

Observing the phases of group work, we provided pedagogical support in the formation of subjective position and interaction of pupils in group activities, where every child tried to show initiative, openness, kindness, creativity.

So, we can say that the group form of work is an efficient way to develop the communication skills studying the course "Surrounding world". The group work activates and motivates pupils, encourages them to study, keeping the learning process at a high level, is a tool for identifying learning outcomes. In the group work each child is forced not just to sit in the classroom, but to think, express their opinion. Each group is interested in learning, as the success of the group depends on the personal contribution of each participant, as well as in the joint decision of the group's learning objectives. This leads to mutual learning of pupils in the process of educational dialogue. The group work is a great opportunity to realize the learning abilities of each pupil, while solving the problem of individual approach in a collective learning.

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### **4. Conclusions**

The ability to work in a group, to coordinate their actions with the actions of other members of the group (team, collective) is a key competence of any specialist of modern society. The ability to cooperate, establish favorable interpersonal relations, the ability to build their activities taking into account the positions of others, to build communication, ensuring the implementation of the processes of distribution, exchange and mutual understanding, the ability to evaluate themselves and companions – all this begins with the first years in school during a specially organized group activities based on educational cooperation.

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[\[Index\]](#)

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