



BRAINSTORMING AND MODERN TEACHING STRATEGIES IN PRESCHOOL EDUCATION¹

Teodora-Mirela BĂBUȚ

Abstract: The paper proposes in the first part a brief overview of teaching strategies, as flexible and operational approaches to action (which can be modified, reformed, changed). Among modern teaching strategies, an important place is occupied by interactive strategies which act beneficially in pedagogical processes, offering the possibility of productive, participatory learning from the actors involved, with opportunities for effective communication and cooperation. Interactive teaching strategies based on the use of interactive group methods and techniques, also aim to promote an optimal atmosphere of self-confidence and mutual respect. The second part of the paper presents an experimental research about the use of the brainstorming method, in kindergarten, as an illustration of interactive strategies. The results show that the brainstorming method can be successfully applied to improve the ability to work in a team, to tolerate the opinion of a colleague, to improve communication and sociability.

Key words: interactive methods, brainstorming, preschool children

1. Introduction

The current educational system requires strategies necessary for continuous development in knowledge and adaptation. In order to achieve this goal, the most appropriate are the modern teaching strategies because children manage to access knowledge and develop their intellectual abilities, skills, abilities, aptitudes, feelings and emotions (Boncea, 2016).

The didactic strategy, through the harmonious combination of all the factors involved, directs the proposed aspirations towards ensuring thorough learning, this being achieved through the participation of each child in this process of establishing their own agreements (Oprea, 2009). The application of modern teaching strategies uses the teacher's experience, his role aiming at "knowing and capitalizing on the child's learning experience, by organizing the assimilation of knowledge or learning experience of the student, by organizing the assimilation of knowledge or learning experiences, so that the object of study taught to be a factor related to the child's learning experience, which should benefit his natural inclinations" (Opriș, 2010). The enthusiasm of the teacher must be evident at each success of a child or a group of children, thus being stimulated and motivated for the following tasks (Breben, Gongea, Ruiu & Fulga, 2002). Children motivated by creative teachers will in turn become creative following the example of their teacher.

From the interactive methods, in this paper we analyzed the efficiency of the brainstorming method by applying it to a group of preschoolers, aged between 5 and 6 years. The field to which this experiment was applied is the Language and Communication Field, with the theme "Why do I like the spring season?". Through this method we aroused the children's creativity and interest in the activity, providing information on the present acquisitions regarding the question "What do you know about the spring season?"

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The result of applying this method is also greatly influenced by the teacher's ability to know the stages, situations and how to apply it. Teachers need to be innovative, with skills to exploit various teaching methodologies, raising the quality and performance in the educational act (Jesa & Nisha, 2017).

1.1. Conceptual delimitation of modern teaching strategies

From the perspective of some authors, the didactic strategies include a group of two or more methods and procedures, integrated in an operational structure, engaged at the level of teaching-learning-evaluation, to achieve its general, specific and concrete pedagogical objectives, at the parameters of superior quality (Cristea, 2000). They are “systems of didactic methods and procedures, teaching means and forms of organizing the instructive-educational activity, integrated in systemic vision in unitary, coherent and convergent operational structures, aiming at the efficient, optimal construction of learning situations that generate positive learning experiences, as well as the rationalization, regulation and optimization of the teaching process” (Bocoș, 2017).

The didactic methods define “the actions necessary for the child to fulfill the concrete objectives of the training activity, designed by operationalizing the specific objectives / competencies, established within the school curricula” (Cristea, 2018).

The didactic procedures represent “the operations necessary for the student to carry out the didactic action, employed by the basic method proposed by the teacher in relation to the general purpose and the concrete objectives of the training activity” (Cristea, 2018).

The means of education represent “the tools that facilitate the realization of the didactic procedures and methods” (Cristea, 2018). They are defined as didactic-material resources that provide the didactic-material base of the school.

The connections between modern teaching strategies and interactive teaching strategies lead to the intersection of modern forms of learning with interactive learning. Interactive teaching strategies involve “creating programs that correspond to the need for interrelationship and differentiated response to students' reactions” (Oprea, 2009).

Interactive teaching strategies take into account the collaborative work of children organized in teams to achieve the proposed objectives (Popescu & Grebeniuc, 2016).

1.2. Modern teaching methods

Teaching methods represent an efficient way of organizing and leading learning, a common way of proceeding that brings together in a familiar whole, the efforts of the teacher and his students (Cerghit, 2006). The pedagogical quality of the didactic method implies its transformation from a way of knowledge, proposed by the teacher, into a way of learning actually made by the preschooler, within the formal and non-formal training, with openings towards the permanent education.

The relationship between the didactic strategy and the didactic method, considers Oprea (2009, p. 31), highlights the existing differences at the level of the pedagogical time engaged in the design and realization of the training / education activities. Thus, the didactic method represents an action that aims at streamlining learning in terms of immediate results, evident at the level of a certain teaching-learning-assessment activity.

After an analysis of the literature, it can be noted that the application of modern methods leads to: active participation of children in building their own knowledge; collaborative work; intrinsic motivation in achieving goals (Tudor, 2010). The methods used in the formation of intellectual skills in teaching-learning activities, reading and writing skills, are more difficult to train in preschoolers aged 5-6 due to the level of abstraction they require (Zamfir-Străuț, 2008). The goal of education at all levels of education is to create skills and pass on knowledge and values to young generations (Jesa & Nisha, 2017).

The modernization of the didactic methodology represents a fundamental element of the pedagogical reform because, in the formation of the child, the methods play the role of some precious tools of knowing the reality, of real actions, of integration in the society. The primary requirement of progressive education, as Jean Piaget says, is to ensure a diversified methodology based on combining learning and independent work activities with cooperation, group learning and independent work activities (Piaget, 2012).

The reorientation of the didactic methodology in which the active-participatory methods predominate is among the priorities of the current education (Stoicuța & Vințan-Andronache, 2017).

1.3. Brainstorming as an interactive method of learning

Brainstorming is a method of stimulating creativity that consists in spontaneously stating as many ideas as possible to solve a problem in a non-critical atmosphere (Breben, Gongea, Ruiu & Fulga, 2002). It was initiated by A.F. Osborn in 1953. The purpose of this method is to unleash the imagination, unusual and original ideas, unconventional opinions, provoking a chain reaction, seemingly unrelated to the issue in question, developing other ideas from other participants (Oprea, 2009).

Among the advantages of this method, we can note that "students / children are able to come up with ideas for solving certain problems" (Khzaiyem ALshammari, 2015, p. 62), which helps to increase the creative potential in teamwork and taking into account the fact that the method of "assault of ideas" or "cascade of ideas" aims to issue as many solutions, ideas, on how to solve a problem, in the hope that by combining them the solution will be obtained. optimal.

To initiate a brainstorming session, Camelia Zlate and Mielu Zlate (1982) proposed the following stages: The preparation stage; The productive stage, of issuing creative alternatives; The stage of selecting the ideas issued, which favors critical thinking.

1.4. Previous studies performed

Tayyaba Zarif and Abdul Mateen (2013) conducted a study in Jordan on the role of brainstorming in teaching social studies to middle school students. The study aimed to investigate and examine the effectiveness of applying the brainstorming method to seventh grade students in geography and developing their attitudes towards it. The study involved 25 seventh graders who were randomly divided into two groups (experimental and control). The brainstorming method was used in the experimental group, and the traditional teaching methods were applied, which showed that there are significant differences between the means of the students' scores from the experimental and control groups in the achievement test and the attitude scale towards geography. The evidence of the findings indicated that brainstorming is a useful teaching technique and a favorable method to be used in the classroom.

The effect of this strategy on the development of creative thinking as a whole and below its abilities can be attributed to the advantages of this strategy which are accepted among students. Brainstorming is a technique, effective in groups that have been designed to increase the number of ideas generated by members to help find solutions to a problem (Khzaiyem ALshammari, 2015).

So far, we have not found research studies on the application of brainstorming at preschool level.

2. Method

The research was carried out during the first semester of the 2019-2020 school year. A one-group quasi-experimental method was used.

2. 1. Research instrument

Given the specifics of the children involved in the experiment, we proceeded to a pre-experimental observation and, after the activity, to a post-experimental observation.

The observation sheet, as a tool, contained items related to the responsibility of solving tasks, self-discovery of abilities and limits, ability to work in a team, tolerance towards the colleague's opinion, mutual respect, communication component, sociability, complex cognitive abilities (divergent thinking, critical thinking, lateral thinking), time to solve, the disappearance of the fear of failure and the courage to take the risk.

2. 2. Participants

The experiment involved 25 children age 5 and 6, who previously had a weak involvement in kindergarten activities, poor participation in inter-relationships with colleagues, difficulties in teamwork, fear of failure. Of the 25 children, 15 were girls: 8 6-year-old and 7 5-year-old and 10 boys: 7 6-year-old and 3 5-year-old.

2. 3. Carrying out the experiment

The experiment was carried out during the activities within the Language and the Field Communication. For example, one of the activities was "Why do I like the spring season?", it was based on the question "What do you know about the spring season?". We aroused the children's interest and curiosity in presenting their own opinions on the characteristics of the spring season. Each child intervened with a short statement, in the established order, without repeating the ideas of colleagues. The ideas issued were directly proportional to the number of group members. After the ideas were stated, the children were asked to stop and say which ones were closest to the truth. The same method was used in the other activities carried out during two weeks.

3. Results and discussion

It was interesting to collect the ideas of the children in case of every question discussed with the brainstorming method. They had many interested ideas on every topic, some of them based on what they have already known in the discussed topic (scientific facts) or what they have observed in their environment, other ideas were taken from children stories, and others are the result of children's imagination and creativity. For example, from the confrontation of ideas, spring revealed itself for the whole group as a naughty, cheerful, jumpy, troubled, rebellious or even vengeful young woman, passing from sunny days with migratory birds to flakes delayed by sharp winds. These ideas show that using the brainstorming method the children's curiosity and emotions were both stimulated due to the discovery.

The children's behavior changed by finding out several opinions regarding a single problem, they, being divided into teams, felt stimulated, and the responsibility for solving the tasks increased.

Table 1 presents the results of the pre-experimental observation. The number of children in case of who the observed behavior was present is presented in case of each criteria. It can be seen that there are more 5-year-old girls and 6-years-old boys who had a higher responsibility in solving the task. The ability to work in a team was higher in 6-year-old girls. Tolerance towards the opinion of colleagues is higher in girls than boys. The 5-year-old girls gained a higher mutual respect. Boys are much more communicative and sociable than girls. The complex cognitive abilities of girls were higher than these abilities of boys.

Table 1. *Observation before applying the brainstorming method*

Brainstorming methods	Observation before brainstorming						
	Responsibility in solving the task	Ability to work in a team	Tolerance towards the opinion of colleagues	Mutual respect	Communication	Sociability	Complex cognitive skills (critical thinking)
Girls 6 years	2	4	1	3	2	2	6
Girls 5 years	4	2	5	5	1	0	4
Boys 6 years	5	3	1	3	4	3	4
Boys 5 years	1	0	0	0	1	1	1
Total	12	9	7	11	8	5	15

After the application of the brainstorming method the same observation sheets were filled in, the results are presented in Table 2. It can be seen that no major improvements were observed regarding the responsibility in solving the task. The ability to work in a team has been improved, especially in the case of 5-year-old children. In the case of girls, tolerance towards the opinion of colleagues has also increased. There were no improvements in mutual respect. In the case of communication, girls develop this skill by applying the brainstorming method. The sociability within the group has increased very much. By applying this method, complex cognitive abilities have not changed.

Table 2. *Observation after applying the brainstorming method*

Brainstorming methods	Observation after brainstorming						
	Responsibility in solving the task	Ability to work in a team	Tolerance towards the opinion of colleagues	Mutual respect	Communication	Sociability	Complex cognitive skills (critical thinking)
Girls 6 years	4	4	4	3	5	4	0
Girls 5 years	3	5	1	1	4	4	0
Boys 6 years	0	4	5	3	2	3	0
Boys 5 years	0	2	2	2	2	2	0
Total	7	15	12	9	13	13	0

As can be seen, the brainstorming method can be successfully applied to improve the ability to work in a team, to tolerate the opinion of a colleague, to improve communication and sociability.

4. Conclusion

The introduction of modern teaching methods is measurable by the results and feedback obtained from children. Following the evolution of children during activities, I believe that the effectiveness of the brainstorming method can be proven in: the emergence of new, modern ideas; encouraging personal contribution; social development by acquiring social components (self-respect, sense of identity, ability to withstand adversity); the use of higher level mental processes: abstract thinking, critical thinking; cultivation: tolerance, motivation, desire for knowledge, creativity, individual and group responsibility; using self-assessment based on analysis and compared to colleagues.

The results of the experimental research presented in this paper show that the brainstorming method can be successfully applied to improve the ability to work in a team, to tolerate the opinion of a colleague, to improve communication and sociability.

The research has few limitations. First of all, it was applied only to one preschool group. Following the research, it was found necessary to apply the experiment to several groups of preschoolers for more conclusive results. The absence of a control group is another limitation of the research because the group cannot be tested with another method that is not interactive (traditional). Also the two week period of the intervention could be too short for obtaining more significant change in childrens behavior and competencies. It could be possible that applying for a longer period of time this method could have an impact also on cognitive skills.

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Author

BĂBUȚ Teodora-Mirela, Babeș-Bolyai University, Cluj-Napoca (România). E-mail: mirela5600@yahoo.com