

# IMPROVING THE EXPERIMENTAL RESEARCH ACTIVITIES OF 6-7-YEAR-OLD CHILDREN THROUGH A LABORATORY TOOL

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**Abstract.** *This article explains the purpose of organizing a laboratory for children of the school preparation group, the tasks of improving experimental research activities through a laboratory tool and a description of the initial results. Also, through interesting and safe experiments, it is possible to develop logical, free, critical and creative thinking in children, to form the skills of analysis, to draw an independent conclusion, to allow children to express their free thoughts, to form research skills, to increase their interest in the exact and Natural Sciences, to form an ecological culture, to approach the environment, to, through interesting experiments, lighting of development areas, linking experimental activities through integration, shaping the skill of reasoning in children, analysis of equipment and materials in the laboratory area and, of course, quality preparation for school are highlighted.*

**Keywords:** *school preparation group, laboratory area, safe experiences, logical and free thinking, environmental management, creative thinking, curriculum, development areas, equipment and materials, research, observation, quality education, perception, nature, qualification, integration, advanced method, development, activity, exact and Natural Sciences, analysis.*

Inculcation of environmental education in children of preschool age, improvement of the content of environmental education was researched by N. Alexiadou, U. Altmann, J.Davis, R.Fisher, M.Fiewicz-Szult, M.Ferreira, B.Kalinski & J.Torquati, R.Velea&G.Tamburlini, Hanne Kole, Dr. Lauri Tuomi, Dr. Ritva Laakso Manninen, Tapio Lahtero, Ph.D , M.Somerville & C.Williams.

It is known that preschool age is the foundation of this education. Nowadays, very great attention is paid to quality education, the system of preschool education, early childhood education. It also plays an important role in this regard at the level of public policy in our country. These actions have reached an urgent political level not only on the scale of the Republic of Uzbekistan, but all over the world. In this regard, the decision to approve the concept of development of the preschool education system of the Republic of Uzbekistan until 2030 was adopted by the Cabinet of Ministers of the Republic of Uzbekistan dated 26.11.2018 “scientific research in the field of Ecology and Environmental Protection - Decree No. 958” on further improvement of the research base“, decree of the president of the Republic of Uzbekistan dated October 30, 2019 No. 434” on approval of the concept of development of environmental education in the Republic of Uzbekistan “ dated May 27, 2019 of the Cabinet of Ministers of the Republic of Uzbekistan, Decree of the Cabinet of Ministers of the Republic of Uzbekistan dated December

22, 2020 No. 802 on approval of the “ state standard of preschool education and upbringing” and a number of other decisions , decrees and laws have been developed.

**The purpose of the study:** To provide quality education to children through the laboratory area and interesting, carefree experiences organized in preschool educational organizations. Introduction of advanced methods and innovations in educational and upbringing activities that can be competitive at the level of international demand. It includes in itself free and logical thinking in children, explaining phenomena in nature, explaining the environment through simple scientific foundations based on exact and Natural Sciences, shaping ecological culture, developing research skills, providing quality education to children, as well as quality preparation for school.

**Research objectives:**

\* Study of social, philosophical, psychological, pedagogical and methodological resources on the problem;

\* Development of recommended safe experiment activities on the basis of the state curriculum;

\* Working out the recommendation of the level of demand of teachers, children and laboratory area;

\* Analysis of all equipment and materials used in the experiment and coverage of safety recommendations;

• To study the conditions for the establishment of laboratories in preschool educational organizations for experiments of children of the preparatory group to school;

\* Development of the form, means and methods of pedagogical and psychological ways of organizing laboratories for the experiments of children of the preparatory group for school in preschool educational organizations;

• Determining the purpose and tasks of setting up laboratories for the experiments of children of the preparatory group for school, clarifying the necessary tools for setting up a laboratory;

\* Conducting experimental-test work, analyzing and developing methodological recommendations;

\* Development of an electronic textbook based on experimental data;

In the new edition of the” FIRST STEP ” educational program, activities are carried out in preschool educational organizations in development centers based on monthly and weekly topics for the age of 6-7 years. Development centers below:

1. Building, construction and mathematics;
2. Plot-role-playing games and staging;
3. Language and speech;
4. Science and nature;
5. Art.

Many experiments with children are carried out in the centers OF “science and nature”. These experiences are met with great interest in children. Because children will have a high level of interest in understanding the environment, finding answers to riddles during this young period. Children are interested in phenomena related to nature, and finding answers to these questions through practical experiments will further increase the child's interest in science.

**Nature** is the universe, which includes the whole creatures in the world. In particular, alive, inanimate, things and creatures existing with the human factor.

**Experience** is the process of testing, observation, experiment, qualification, theory in practice. Experience-activity developments can be carried out through games, excursion, labor, daily life work methods.

**Experiment-research-** In life, children are born explorers. Experimental research activities embody all activities. These include observation, intellectual awareness skills, elementary mathematical skills, teamwork, critical thinking, data analysis, and reflexive activity.

Sample list of materials for the development center “Science and nature” and the developing environment in groups

Devices:

- Table (1), chairs (2-4);
- \* open shelves for storing materials.

Materials:

- a set of various objects for research (sets of stones, sea shells, pine cone, minerals, snacks, seeds, plants (herbarium, etc.));
- \* magnifiers, magnifying glasses;
- \* microscope;
- \* set of magnets;
- \* sets for experimentation;
- \* scales;
- \* safe thermometers for children;
- \* hourglass, stopwatch;
- \* sets of measuring cups;
- weather calendar;
- \* globe, geographical maps, children's Atlas;
- \* educational books with images, posters, pictures

In order to continue the analysis of the above qualitative, approximate equipment and materials, a special additional recommendation list for the laboratory area is being compiled by specialists.

“First step” is improved second edition of the state curriculum.

In the organization of the laboratory area in preschool educational organizations, the safety of the pedagogue and the children demands special attention. It is also worth paying attention to the fact that the equipment and materials are absolutely secure. There are several places of the laboratory area:

1. Area for experiments to be carried out;
2. Greenhouse;
3. Reserve;
4. Adaptation area;
5. Laboratory experiments "STEAM".

The advantage of this laboratory area is that:

- \* Sufficient free activity is provided for children and pedagogue;
- Providing the total amount of material and equipment for the pre-school children in the organizations;
- A special place will be available to observe the processes in the experiment;

• In this area provided not only topics within the framework of the state educational program, but also an experimental area in which any questions of children can be answered;

In preschool educational organizations, a project was developed within the framework of the topic of the methodology for organizing a laboratory for children of the preparatory group for school. The introduction of this project into the project gives a number of positive results. Cooperation organizations were selected in the establishment of the laboratory area. Also, a clarifying experiment-test was carried out in 16 preschool educational organizations. According to the experimental-test analysis, 98% of 100% of educators in the organization agreed that it is permissible to organize a laboratory house. There was expressed the opinion that children's experimental and research activities will be developed through the means of this laboratory site.

The establishment of cooperation in the field of scientific research, and the impact of opinions, recommendations, analyses and conclusions of industry representatives and experts on a positive result in the study is extremely significant. Therefore, cooperation with several organizations on scientific research has been established.

Cooperation organizations in the implementation of the project in practice within the framework of the topic “Methodology for the organization of laboratories for the experiments of school preparatory group children in preschool educational organizations”

Organization number №	Organization name
1.	Institute for retraining and professional development of directors and specialists of preschool educational organizations
2.	Ministry of innovative development of the Republic of Uzbekistan
3.	Experimental state preschool educational organizations №. 324, 34, 559, 422, under the jurisdiction of the Ministry of preschool education of the Republic of Uzbekistan (ESPEO)
4.	Tashkent Institute of chemistry and technology
5.	“Favorite children” NMTT of Tashkent region, Kibray District
6.	SPEO № 1, 9, 10 and “Joy” of Syrdarya region, Gulistan
7.	SPEO № 9, 19, 27 of Fergana region, Kokand City
8.	SPEO № 548, 174, 345 of Tashkent City, Mirabad district; № 288, 554, 555 of Yunusabad district; № 2, 98, 113 of Mirzo Ulugbek District

**Conclusion:** There is a great opportunity to improve the research-cognitive and effective reflexive activities of 6-7 year old children, which is a small area of development, through the laboratory tool. The lack of free space and special equipment and materials in the group for experimental activities increases the need for laboratory space. “Interesting and safe activity development” is recommended in order to make children feel like explorers and increase their interest in experimental activities and science. Also, it allows effective use of experimental and research activities of fields and regions in pre-school educational organizations. The positivity of the opinions of teachers and educators to carry out experimental-research activities through the means of the laboratory area is one of the foundations of the implementation of this scientific research.

Special attention is paid to four important aspects in improving the experimental research activities of 6-7-year old-children through laboratory tools:

- Provision of regulatory legal documents in the country as a basis in the field of conducting scientific research;
- Territorial regional equality;
- Economic situation;
- Establishment of cooperation agreements on scientific research

### **REFERENCES**

1. The Law of the Republic of Uzbekistan "On education". ZRU-637 of 09/23/2020.
2. The Law "On Preschool education and upbringing" of the Republic of Uzbekistan was adopted by the Legislative Chamber on October 22, 2019. Approved by the Senate on December 14, 2019. (National Database of Legislation, 17.12.2019, No. 03/19/595/4160; 27.04.2021, No. 03/21/685/0373, 12.10.2021, No. 03/21/721/0952)
3. Resolution on approval of the concept of development of the preschool education system of the Republic of Uzbekistan until 2030.
4. Decree of the President of the Republic of Uzbekistan "On the Strategy of actions on five priority areas of development of the Republic of Uzbekistan in 2017-2021" UP No. 4947 dated February 7, 2017 // Teacher of Uzbekistan. – Tashkent, 2017. – № 6 (2453). – 10 February. – page 70. <http://lex.uz/docs/3107036>
5. Decree of the president of the Republic of Uzbekistan dated October 30, 2019 No. 5863 "On the approval of the concept of Environmental Protection of the Republic of Uzbekistan for the period up to 2030".
6. Resolution No. 958 of the Cabinet of Ministers of the Republic of Uzbekistan dated 26.11.2018 on "Further improvement of the research base in the field of Ecology and Environmental Protection".
7. Resolution No. 434 of the Cabinet of Ministers of the Republic of Uzbekistan dated May 27, 2019 "On approval of the concept of development of environmental education in the Republic of Uzbekistan".
8. State requirements of the Republic of Uzbekistan for the development of children of early and preschool age.
9. The second edition of the improved state educational curriculum "First step".
10. Grosheva I.V. and others. Variable program of development, education and training "Ilm Yuli" to prepare children aged 6-7 years old for school. T., 2020
11. Abdullaeva N.Sh. Improvement of preschool education on the basis of a variative approach// ped.f.b.f.D. (PhD) dissertation abstract –Tashkent: MTTRMQTMOI, 2019. - 25 b.
12. Begmatova N. Scientific and methodological foundations of the use of multimedia technology in preschool educational institutions// candidate of Pedagogical Sciences dissertation - Karshi, 2012. -150 B.
13. Berdaliyeva G.A. Improving the methodology of teaching of independent thinking during the speech development lessons in pre-school organizations // p.f.b.f.d. (PhD) dissertation abstract. - Tashkent: MTTRMQTOI, 2019. – page 48.
14. Berdieva M.M. Mechanisms for improving the intellectual abilities of pupils of preschool educational organizations through pedagogical support. PhD dissertation. - T., MTTRMQTOI, 2020. -148 B.
15. Preschool educational organization and family cooperation. The module 3, Toshkent 2008 y.