

# The Role Of Extracurricular Activities In Developing Mathematical Literacy

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**Abstract:** The article discusses the importance of extracurricular activities in the development of mathematical literacy. It analyzes how mathematics clubs, games, quizzes, and olympiads contribute to the development of students' logical thinking and practical skills.

**Keywords:** Mathematical literacy, extracurricular activities, mathematics club, mathematical games, logical thinking, methodology, olympiad, quiz.

**Introduction:** In the current era of globalization, one of the main tasks of the education system is to develop students' functional literacy, particularly mathematical literacy. Mathematical literacy refers to students' ability to use mathematical knowledge in everyday life, analyze problems, and make effective decisions. This concept is recognized as an important competency in international assessment programs, including PISA studies.[1].

In school practice, the development of mathematical literacy should not be limited only to classroom instruction. Since classroom time is limited and it is difficult to engage all students equally, the need for extracurricular activities is increasing. Therefore, extracurricular activities are considered an important pedagogical tool for developing mathematical literacy.

Primary school mathematics textbooks also pay special attention to developing students' logical thinking, independent learning skills, and the ability to solve real-life problems [2].

Practical exercises and engaging teaching methods are also very important for improving mathematical literacy

and developing students' skills. Several methods can be used to develop mathematical literacy among primary school students. For example, teaching mathematics through games and practical activities can be both interesting and effective for students. Such practical activities increase students' interest and motivate them to learn mathematics [Mavlyanova G., Methodologist of Primary Education, Surkhandarya Regional Center for Pedagogical Excellence].

## Research Methodology

- The following methods were used in this study to determine the role of extracurricular activities in developing mathematical literacy:
- pedagogical observation;
- comparison and analysis;
- study of methodological literature;
- analysis of extracurricular activities.

During the research process, the following forms of extracurricular mathematics activities were studied:

- mathematics clubs;
- mathematical quizzes;

- mathematics olympiads;
- mathematical games;
- project work.

According to methodological sources, extracurricular activities are important for strengthening students' knowledge, teaching them independent thinking, and identifying gifted students [3]. Students began to apply creative approaches while solving mathematical problems, which enhanced their independent thinking skills.

The methods used during the research process, especially game-based approaches and real-life situation models, helped increase students' activity and participation. Students completed mathematical tasks with interest, which further strengthened their logical and analytical thinking abilities.

The results showed that developing mathematical literacy in the educational process not only improves the effectiveness of knowledge acquisition but also develops students' abilities to think independently, analyze problems, and make decisions. This demonstrates the need to improve approaches to mathematics education in primary school [Theoretical Aspects in the Formation of Pedagogical Sciences, International Scientific Online Conference, p. 147].

### Research Results and Discussion

The results of the study showed that extracurricular activities are an important factor in developing students' mathematical literacy.

#### The Role of Mathematics Clubs

Mathematics clubs help deepen students' knowledge. During these activities, students:

- solve complex problems;
- complete logical tasks;
- work on olympiad problems;
- reinforce their knowledge through mathematical games.
- As a result, students' mathematical thinking develops.

### The Importance of Mathematical Games

Mathematical games increase students' interest in the subject. Learning through games encourages students to think actively. Games such as Sudoku, rebuses, and

puzzles develop logical thinking skills [4].

### Quizzes and Olympiads

Mathematical quizzes develop students' quick-thinking skills, while olympiads deepen their knowledge and help identify gifted students.

### Practical Problems

Using real-life problems in extracurricular activities plays an important role in developing mathematical literacy. Examples include:

- money and trade calculations;
- time and distance calculations;
- working with units of measurement.

The research results show that students who participate in such activities develop a high level of mathematical literacy [5]. For example, students are able to connect mathematics with real life. They can calculate correctly while shopping, estimate the time needed to travel to school based on distance, and use measurement units effectively in everyday life.

In conclusion, extracurricular activities are an important pedagogical tool for developing mathematical literacy. They increase students' interest, develop independent thinking, connect knowledge with practice, and help identify gifted students.

Therefore, it is necessary to organize extracurricular mathematics activities systematically and effectively within the educational process.

Improving mathematical literacy in primary school creates a foundation for students' success in future stages of education. The following aspects are particularly important:

1. Intellectual Development: Mathematics develops students' logical thinking, analysis, and synthesis skills.
2. Problem-Solving Ability: Various arithmetic and logical problems teach students to solve problems independently.
3. Life Skills: Mathematical knowledge helps children in everyday life, for example, in calculating money and managing time ["Methods for Improving Mathematical Literacy in Primary Grades," article by Xolmirzaeva Feruza Valiyevna, teacher of Secondary School No. 4, Beshariq District].

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