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EFFECTIVE METHODS FOR ENHANCING MATHEMATICAL LITERACY IN PRIMARY EDUCATION

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ABSTRACT. Developing mathematical literacy in primary grades is not only a vital component of the educational process, but also the foundation for children's future intellectual and logical development. This article analyzes the significance, existing challenges, effective methods, and modern pedagogical approaches related to mathematical literacy.

Keywords: primary education, mathematical literacy, game-based methods, modern technologies, motivation, innovative pedagogy.

INTRODUCTION. Mathematics is one of the core disciplines of primary education. At this stage, students must develop logical thinking skills, master basic mathematical concepts, and form independent reasoning abilities through problem-solving. However, in practice, a number of problems exist in enhancing mathematical literacy: the complexity of textbooks, insufficient individualization in teaching, and the underutilization of methods designed to boost student motivation.

The primary education stage serves as the bedrock for every child's intellectual development and plays a key role in shaping their cognitive competencies. Fostering mathematical literacy at this stage strengthens students' critical thinking, problem-solving skills, and logical reasoning. Nevertheless, several obstacles are encountered in practice when developing mathematical literacy among primary school students, including:

Inadequacy of Educational Content: Textbooks and assignments do not fully align with young learners' cognitive capacities;

Lack of Pedagogical Approaches: Insufficient use of interactive methods;

Low Student Motivation: Monotonous and uninspiring organization of the learning process.

Today, applying modern approaches to develop cognitive competencies in mathematics during primary education is essential. In particular, student engagement can be enhanced through real-life contextual problem-solving, game-based technologies, information technologies (e.g., mathematical software), and creative approaches. Developing and applying methodological strategies aimed at improving cognitive abilities during the process of enhancing mathematical literacy ensures the relevance and timeliness of this topic.

This paper examines the directions for developing primary school students' cognitive competencies based on mathematical literacy, addresses existing issues, and proposes effective solutions. Furthermore, recommendations and suggestions regarding the application of advanced pedagogical technologies are provided.

MAIN BODY. 1. Concept and Significance of Mathematical Literacy. Mathematical literacy is reflected not merely in children learning basic arithmetic, but in their ability to apply mathematical reasoning in practical situations. This skill serves as a fundamental foundation for solving complex tasks and achieving success in technical fields in the future.

2. Challenges in Developing Mathematical Literacy. Misalignment of Textbooks and Resources: The complexity of topics in certain textbooks does not match students' age levels.

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Insufficient Motivation: Game-based and practical teaching methods are rarely used, which lowers students' interest.

Lack of Individualized Instruction: Failure to consider varying ability levels within a group leads to difficulties in content mastery.

3. Effective Methods for Developing Mathematical Literacy.

Interactive Methods: Engaging students through mathematical games such as "Math Dominoes" or "Sudoku."

Modern Technologies: Making lessons visual and interactive using mathematical applications and software (GeoGebra, Khan Academy, Mathletics).

Contextual (Real-Life) Learning: Solving problems based on everyday situations (market prices, time calculation, etc.).

Collaborative Learning: Developing communication and analytical skills through group work and discussion.

4. The Role of the Teacher and Innovative Approaches. Teachers can foster mathematical literacy by encouraging students, nurturing their individual capacities, and applying creative approaches to the instructional process. Students should be prompted not only to solve textbook problems, but also to create their own problem scenarios.

5. Accounting for Students' Age and Individual Characteristics It is essential to adapt instructional materials and methods based on each student's abilities, age, and interests. This ensures that learners achieve success during the learning process.

Substantiating the Link Between Mathematical Literacy and Cognitive Competencies. Mathematical literacy serves as a primary tool in developing the cognitive competencies of primary school children. It encompasses not only theoretical knowledge, but also solving real-life problems, analysis, and logical deduction.

Cognitive Competencies: Comprise the formation of students' skills in knowledge, comprehension, application, analysis, synthesis, and evaluation. Enhancing mathematical literacy in primary education supports the sustainable development of these cognitive domains.

Pedagogical Approaches. The teacher’s role is crucial in expanding students' cognitive capacities: Person-Centered Approach: Conducting lessons while considering the individual traits of each learner. Collaborative Learning: Developing analytical and social skills through group work and joint problem-solving. Problem-Based Learning: Shaping independent thinking by guiding students to discover new knowledge on their own.

Practical Experience and Observations. Empirical observations regarding mathematical literacy indicate that: Contextual tasks oriented toward real-life situations serve as an effective mechanism for cognitive development. Interactive methods (such as mathematical games) significantly increase student interest in mathematics. Incorporating information technologies leads to noticeable improvements in logical reasoning and engagement.

Problems and Solutions. Key challenges encountered: Misalignment of curricula with modern demands; Lack of teacher proficiency in applying interactive technologies; Low student interest and motivation.

To resolve these challenges, it is recommended to: Modernize educational content; Organize regular professional development programs for teachers; Employ methods that motivate students and involve them in creative activities.

CONCLUSION AND RECOMMENDATIONS. To develop mathematical literacy among primary school students, it is essential to: Align mathematical problems closely with real-life scenarios; Expand the application of modern technologies and interactive instruction; Establish an individualized approach that accounts for each student's unique qualities. Implementing these

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methods in the future will enhance not only students' mathematical literacy, but also their overall critical thinking abilities and passion for learning.

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