EduVision: Journal of Innovations in Pedagogy and Educational Advancements
Volume 01, Issue 03, March, 2025
brightmindpublishing.com
ISSN (E): 3061-6972

METHODOLOGY FOR DEVELOPING PSYCHOLOGICAL AND PEDAGOGICAL CHARACTERISTICS OF STUDENTS IN PRIMARY SCHOOL MATHEMATICS LESSONS

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Abstract:
This article addresses the development of the psychological and pedagogical characteristics of primary school students. It discusses the significance of mathematics as a subject and highlights the aspects teachers should pay attention to when teaching mathematics in primary school.

Keywords: Primary school students, mathematics, psychological and pedagogical characteristics, ability, logic, learning process.

Introduction

A person's childhood serves as the foundation for their future. Particularly, the primary education stage plays a crucial role in shaping a child's consciousness. Mathematics holds a vital place in this stage, being one of the most essential parts of the primary education system. It is during this period that children's thinking begins to develop, along with logical reasoning and problem-solving skills.

Mathematics is not only the science of numbers and calculations, but also a tool for understanding the environment, recognizing relationships among phenomena, and making logical inferences. In today's globalized and technologically advanced world, mathematics has become an integral part of our lives. In many fields of modern society, mathematical knowledge plays an essential role.

President Shavkat Mirziyoyev's decree from May 7, 2020, "On measures to improve the quality of education and the development of scientific research in the field of mathematics," once again underscores the importance and relevance of

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mathematics. According to this decree, specialized schools focusing on in-depth mathematics instruction are to be gradually established in each district and city, with students admitted based on merit and taught using modern curricula.

Overall, one of the primary tasks of today's education system is to prepare students for life. Mastering mathematics in primary school develops not only academic knowledge but also independent thinking and problem-solving skills.

In modern times, mathematics is not just an academic subject, but a key part of life itself. Therefore, it is as important to consider children's psychological and pedagogical characteristics as it is to teach mathematics effectively. When children begin to explore the world through numbers, calculations, and logic, acknowledging their psychological traits becomes crucial to increasing the effectiveness of education.

The mental state, abilities, and motivation of primary school students are closely linked to the teacher's approach. Children at this age are emotionally sensitive and impressionable. While their cognitive activity is still developing, they perceive their surroundings in a unique and personal way.

Key Aspects of Psychological and Pedagogical Development in Primary Students

1. **Intellectual Development**

- Concrete Operational Thinking: According to Jean Piaget's theory of cognitive development, children in this age group enter the "concrete operational stage," where their thinking is logical but still tied to concrete experiences. They strive to understand their environment through direct interaction and explore relationships between objects.
- Memory and Perception: At this stage, children exhibit heightened sensory perception and active memory. They begin to differentiate between intentional (goal-directed) and incidental memories, and absorb surrounding events at a rapid pace.

2. **Emotional Development**

- Expression of Emotions: Children openly express emotions such as joy, sadness, fear, and excitement. However, their emotional regulation is still developing and is significantly influenced by feedback from adults (parents and teachers).

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- Trust and Relationships: Children are highly responsive to positive reinforcement (praise, encouragement), while negative feedback can undermine their self-confidence.

3. **Volitional Development**
   - Independence and Decision-Making: Children aim to form their own opinions and make decisions independently, although they still require guidance from adults. Skills such as self-control, patience, and discipline are in the process of development.
   - Role of Teachers and Parents: Support and modeling from teachers and parents play a vital role in strengthening students' willpower and motivation.

4. **Socio-Psychological Development**
   - Interpersonal Relationships: Based on Lev Vygotsky's sociocultural theory, children develop social skills through active communication with those around them (parents, teachers, peers). Group work and role assignments help shape their personality and social awareness.
   - Personal and Group Dynamics: Children experience friendship, empathy, competition, and dialogue, which help them define personal boundaries. Support from adults facilitates adaptation to social environments.

5. **Learning Activity and Motivation**
   - Interest in Learning: For children, learning is not only about acquiring knowledge but also a means of personal growth. Motivation is enhanced through encouragement and assessment. Success and failure contribute to the development of self-evaluation.
   - Individual Approach: Lessons should be planned considering students' psychological traits and involve their active participation. These traits also influence the choice of teaching styles and methods. To ensure effective learning, teachers must have high levels of skill and pedagogical insight.

Teachers must approach every student with an understanding of their psychological state, especially in mathematics, a subject that requires logical thinking, precision, and creativity. A student's emotional well-being directly affects their learning performance.

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When a student is free from stress and anxiety before or during class, they are more likely to understand the material and apply logical reasoning effectively. However, high levels of stress and emotional unrest may lead to difficulties in concentrating and problem-solving.

A supportive and encouraging classroom atmosphere, as well as students' confidence in their abilities, is crucial for success in a subject like mathematics. When such an environment is provided, students become more willing to learn new topics and tackle complex problems.

Mathematics anxiety — or the "fear of math" — often stems from emotional instability. Helping students manage their emotions and maintain a positive attitude during class encourages active participation. In such situations, teacher support and psychological guidance are essential. Teachers must pay close attention to these aspects.

Every student has a unique psychological state, learning style, and capacity. Therefore, incorporating **individualized and differentiated instruction** in mathematics lessons is important. This allows each learner to develop strategies that suit their needs.

Teachers should help students develop positive self-perception, treat failures as a natural part of the learning process, and use motivational strategies to emotionally support them.

By considering students' psychological conditions, their **interest, confidence, and likelihood of success in math** can be significantly increased. A positive psychological environment, reduced stress, and a personalized approach enhance cognitive activity and facilitate more effective learning of mathematics.

Conclusion

Such an approach not only boosts students' self-confidence but also makes it easier and more engaging to teach complex mathematical concepts.

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