



SOCIAL AND PSYCHOLOGICAL ASPECTS OF DEVELOPING SCIENTIFIC THINKING IN STUDENTS

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Abstract: *This article analyzes the process of developing scientific thinking in students from a socio-psychological perspective. Scientific thinking plays a crucial role in understanding reality, drawing scientifically based conclusions, and enhancing critical thinking. The study examines the influence of social factors, individual psychological characteristics, and the educational environment on the formation of scientific thinking. Additionally, it focuses on fostering independent thinking, cultivating an innovative approach, and supporting creative reasoning among students.*

Key words: *Scientific thinking, student, socio-psychological aspects, critical thinking, educational environment, innovative approach.*

The development of an individual's worldview is always closely connected with socio-political processes taking place in society. A distinctive feature of modern education is the transition from a knowledge-centered paradigm to a learner-centered paradigm. This shift requires a reconsideration of fundamental pedagogical principles, including approaches to shaping students' worldview. Each historical period addresses the problem of worldview formation in accordance with the level of social development, science, and education.

Analyzing scientific and psychological studies devoted to the problem of forming psychological determinants of social intelligence in young families, it becomes evident that thinking plays a crucial role in shaping students' scientific worldview. In this process, thinking performs the function of analysis and synthesis of ideas, concepts, and theoretical approaches, offering practically valuable and scientifically significant solutions and perspectives. Thus, scientific thinking serves as a core mechanism for the intellectual development of students.

In contemporary society, the development of students' scientific thinking is considered one of the priority directions of the education system. Scientific thinking enables individuals to objectively perceive reality, analyze existing problems, and search for effective solutions. Therefore, the process of developing scientific thinking among students should be thoroughly studied from both social and psychological perspectives.

Scientific thinking is defined as an individual's ability to understand knowledge about reality in a logical and scientifically grounded manner [1]. It represents one of the higher stages of cognitive development and is formed through rational reasoning, experimentation, and analytical processes. According to Piaget (1972), human thinking develops under the influence of experience and social interaction [2]. Consequently, the development of



students' scientific thinking is closely related not only to the education system but also to broader social factors.

Social and Psychological Factors Influencing the Development of Scientific Thinking

The main social and psychological factors affecting the development of scientific thinking in students include the following:

1. The Influence of Family and Society.

A student's scientific worldview is largely shaped by their family environment and social surroundings. Vygotsky (1986) emphasized that social interaction and cultural experience are key determinants in the development of thinking [3]. Through communication, cooperation, and shared activities, students acquire cognitive tools necessary for scientific reasoning.

2. The Role of the Educational Environment.

Universities and academic institutions play a decisive role in fostering students' scientific thinking. Interactive teaching methods, involvement in research activities, and the application of innovative pedagogical approaches significantly enhance students' analytical and investigative abilities [4].

3. Development of Critical and Creative Thinking.

Critical thinking is an essential component of scientific thinking. As noted by Dewey (1933), scientific inquiry is fundamentally based on observation, reflection, and analysis [5]. Encouraging students to question assumptions, evaluate evidence, and generate original ideas contributes to the formation of a scientific mindset.

Several effective methods can be employed to develop students' scientific thinking:

Problem-Based Learning.

This approach encourages independent thinking by presenting students with real scientific problems and motivating them to seek solutions through research and reasoning [6].

Creative Approaches and Experiments.

Scientific thinking develops through experimentation and practical engagement. Therefore, laboratory work, practical training, and participation in scientific projects play a vital role in enhancing students' cognitive abilities [7].

Creating a Scientific Environment.

Organizing scientific seminars, conferences, and research clubs within universities contributes to the development of students' scientific thinking and research culture [8].

In conclusion, the development of scientific thinking in students is essential not only for their personal intellectual growth but also for the overall progress of society. Social and psychological factors exert a significant influence on this process. Therefore, the role of educational institutions and society in fostering scientific thinking among students should be further strengthened and systematically developed.



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