

Manifestation of Biological, Cognitive Components of The Problem of Creativity

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Abstract:

The article describes the problem of formation and development of creativity. Researches of scientists on determining the sensitive period of creativity formation in children have been analyzed. Researches conducted using different methods of children's standard thinking and creative thinking, information about the period when creativity appears in children are cited. Socio-psychological factors affecting the development of creativity characteristics are expressed.

Key words: Creativity, standard thinking, ability, sensitive period, heredity, social environment, imagination, motive, preschool age, junior school age.

Introduction

From the analysis of existing materials, it can be understood that many researches devoted to the study of the characteristics of creativity, its structural components, showed the need to study it together with knowledge processes. As for the junior school age in this matter, that is, in the formation of creativity features in junior students, it is determined by the fact that the student as a subject can realize his abilities through knowledge activities, mental abilities, specific types of activities at a certain age.

Early research in this direction was conducted by Guildford, who noted that creativity was manifested as a trait in such components as divergent thinking and conversion ability (IQ). The differences between these components are that divergent thinking determines creative achievements, and intelligence determines the

success of understanding and mastering new material. According to him, the "upper limit" of problem-solving success for divergent thinking is predetermined by IQ. Also, this threshold is higher for verbal tests than for non-verbal ones. These assumptions were confirmed by studies with the definition of correlation coefficients. In particular, the correlation between intellectual tests and divergent thinking has been shown to be higher for semantic tests than for spatial and symbolic ones.

Researchers K. Yamamoto, D. Hardgreaves, and I. Bolton hypothesized a "lower limit" in the relationship between creativity and intelligence. That is, low IQ indicators limit the expression of creativity, but when IQ is above a certain "threshold", creative achievements do not depend on intelligence.

A similar conclusion was made by researchers J. Gilford and P. Christensen's [171] studies, that is, in the case of low IQ, the manifestation of creative talent is almost non-existent, and individuals with high IQ can have high and low levels of development of divergent thinking.

Researcher Torrenc concluded in his research that there is a one-way connection between intelligence and creativity. His intellectual threshold model presents creativity and intelligence as the only factors up to IQ <120 (when IQ limits the expression of creativity), and independently above this threshold.

The results of studies conducted by researchers Kogan and Wollak rejected the "lower" limit theory and presented the factors of creativity and intelligence as independent. Similar conclusions were obtained from research conducted by the IPRAN laboratory of psychology of abilities.

Among the studies related to this direction, D.H. Dodd and P.M. White analyzed the results of the study of the relationship between IQ and divergent productivity estimates and concluded that intelligence limits the level of creative productivity from above. Those divergent thinkers ruled that the highest scores had the highest IQ, but not the other way around.

Research conducted by N.G. Markova and N.N. Bats served to reveal the characteristics of the relationship between creativity and the level of intelligence, that is, a close relationship is observed only at high and above-average levels of intelligence, intelligence indicators have average and very high indicators, this relationship is not observed. Thus, the data of theoretical and experimental work on the relationship between creativity and intelligence became contradictory, which opened a new direction of research for a more comprehensive study of this issue.

Further studies were directed to the study of diagnostic methods in studying the characteristics of creativity. Researcher R. Kattell's intelligence test (non-verbal), L. Young (verbal), P. Torrenc (verbal) verbal and drawing tests were developed.

In M.R. McCabe's research, he also studied the characteristics of the formation of students' creativity and intelligence levels through oral and picture tests created by him. Through this test, it was possible to determine the students' ability to think logically, mathematically, and the rules of the mother tongue.

Researchers D. Harington and J. Block believe that determining the level of creative thinking at preschool age allows predicting children's further progress in mastering the school program.

These data can be compared with the experimental results of the Munich Longitudinal Study, which showed that the factors of the Munich model of giftedness (intelligence, creativity, social skills, musical and psychomotor abilities), at least at the secondary school level, are independent, which confirms the hypothesis of specific areas of giftedness.

The non-standard situations encountered in the studies of this direction, that is, in the studies on the formation of creativity characteristics of students of junior school age, sometimes conflicting results can be explained by taking into account the laws. Including

1) non-linearity of changes in creativity during the research process;

2) sequence of formation of creativity components - spontaneous manifestation based on motivational-cognitive and behavioral components. These hypotheses can be observed in the researches of V.N. Drujinin, N.V. Khazratovalar.

Thus, according to the scientific assumptions of the above studies, creative activity is stimulated by internal motivation, unregulated life conditions, but the "upper" limit of its level of manifestation is the level of general intelligence. Also, there is a "lower" limit (minimum level of intelligence), which scientifically justifies the conclusions that the subject's creativity cannot manifest itself without reaching it. So, it shows that we should pay more attention to high mental abilities of students of junior school age in forming creativity characteristics. The issues of studying the theoretical aspects of the problem of developing creative thinking of primary school students in the educational process, identifying conditions for accelerating cognitive activity through the development of creative thinking, improving psychological mechanisms for the development of creative features are considered.

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