

# Study of Academic Motivation of Gifted Students in the Context of the Phenomenon of Dyssynchrony

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**Abstract**—The relevance of the stated topic is due to the inter-scientific integration around the problems of development of gifted students with different levels of cognitive abilities. Formation of motivation of the teaching can be called one of the central problems of the modern world school. Updating the content of education and the dynamics of state standards around the world dictates new tasks of formation of students' methods of self-acquisition of knowledge and cognitive interests. In the course of the presented study revealed contradictions between the undeveloped diagnostic tools for the study of abilities and those areas in the work of teachers of educational organizations that these abilities have developed. There is a need to understand the psychological mechanisms of high achievements of gifted students, the nature of the phenomenon of dissynchrony, in particular, the role of productive and stable in time forms of educational motivation.

**Keywords**—*cognitive processes, educational motivation, giftedness, gifted students, dissynchrony of development of gifted*

## I. INTRODUCTION

Relevance of the study - in order to informatively-resource support of the pedagogical process, it is necessary to methodically correctly verify all the main components, including an understanding of the nature of the phenomenon of dysynchrony and forms of educational motivation. An essential aspect of our scientific interests is the assessment of mental development of intellectually gifted, in terms of the presence of psychological barriers that complicate its manifestations and lead to dissynchrony. The phenomenon of dissynchrony of mental development of gifted manifests itself in the mismatched state of systems of interconnected mental phenomena at a certain moment of their development, in the imbalance of somatic and other

components of mental development, including its motivational basis.

Social and internal dyssynchrony is the basis of the occurrence of stressful and uncomfortable socio-psychological climate in the school class. Pointing to the dissynchrony of mental development of the gifted, we highlight the problem of its study as influencing the formation of a holistic personal appearance of the subject and playing an important role in the structure of a holistic personality of an intellectually gifted person, describing the psychological "picture" of the heterogeneous development of intellectually gifted children methods of psychodiagnostics of dissynchronous development indicators and prevention of dissynchrony as a psychological phenomenon [5-7].

In this work we performed the study of the peculiarities of academic motivation and the level of development of some components of cognitive activity of Junior schoolchildren with different predictors of high achievement (giftedness) from the point of view of the effect of accelerated development of one of the mental processes in combination with normal (age-appropriate) or even a slower development of the other.

Based on the understanding of educational motivation as a system of education, a new direction of research is planned for the development and support of educational motivation and its components in the conditions of institutional learning, allowing at a new level to solve debatable questions about the high achievements, talent and opportunities for its development in primary school children.

## II. THE BASIC CONCEPT AND ITS MEANING

Research methods: in the process of research the following research methods were used: analysis of normative documents and products of activity, method of

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mental experiment, forecasting, systematization and generalization of facts and concepts, study and generalization of experience, diagnostic methods:

- Scoring methodology: to determine the result of joint work, a scale is assumed on which the assessment of the level of development of educational motivation is determined.
- Card techniques: a set of cards with a certain semantic content. Card techniques allow you to get a General idea of the development of cognitive activity. Card techniques are used when performing independent tasks, when checking residual knowledge.
- Associative projective techniques: a set of educational materials was used through play situations, which allowed the younger student with insufficient educational motivation.

Experimental base of research was the primary classes of secondary school. A total of 97 respondents took part in the study at different stages. 48 pupils of 1-2 classes of MAOU-Lyceum №2 of Almet'yevsk made a sample of them.

Investigation phase (the study was conducted in three stages):

- At the first stage: the preparatory stage we analyzed the current state of the problem in psychological theory and practice; slice diagnosis, covering the traditional hierarchy of motives of teaching and their dynamics
- At the second stage: the main stage-diagnosis of the functional structure of the motivational component of activity in the formation of new knowledge and skills of students
- At the third stage: the final stage-the systematization, understanding and generalization of the results of the study were carried out; the theoretical conclusions were clarified; the processing and registration of the results of the study were carried out.

### III. THE TECHNIQUE

#### A. *Structure and content of the work*

The developed approaches in the practice of future specialists includes the target (goals, objectives); methodological (approaches, principles); content (direct conditions for the study of the dynamics of the study of educational motivation of gifted younger students with different levels of cognitive abilities); organizational and procedural (organizational and pedagogical conditions, scientific and methodological support) and effective components (performance indicators).

#### B. *Implementation phase*

The introduction of this technology involved the

following stages of experimental work:

In the diagnosis of educational motivation, we relied on the following criteria for the selection of methods for its implementation:

- definition of indicators of motivation of the doctrine on the basis of which diagnostics will be carried out;
- selection of diagnostic methods;
- determination of diagnostic capabilities of each technique in relation to the selected indicators;
- taking into account the methodological basis of the methodology-the theory on the basis of which this methodology was built and which must be taken into account when interpreting the results;
- the conformity of the texts of the methods to the age peculiarities of students;
- taking into account the individual characteristics of students;
- compliance of the diagnostic situation with the diagnostic purposes.

#### 3.2.1. Ascertaining stage

At the ascertaining stage of the experiment, diagnostics was carried out:

To divide children by the level of school motivation, we used a system of points. Answers to the questions were evaluated on a 30-point scale. There were 5 levels of evaluation of educational motivation. The study was conducted by a written survey. Having set the task of studying the educational motivation of gifted primary school students, we are faced with a variety of approaches, methods of detection, diagnosis of this phenomenon. Given the complexity of the concept of "giftedness" and interpreted by us this concept as a system, developing during the life of the quality of the psyche, which determines the possibility of achieving a person higher, "extraordinary" results in one or more activities in comparison with other people, we drew attention to the methods of diagnosis of a number of mental processes of younger students. After the conducted research, we concluded that the higher average values in the level of educational motivation of 1 "a" class, compared with 1 "B" class.

In the course of processing using the software product SPSS in the calculation of the t-criterion (see Annex 9) in the statistics of samples, the average value in the "a" class was 23.36 (with a standard deviation of 4,152 and a standard error of the average 0.830), in the "B" class the average value was lower and amounted to 19.17 (with a standard deviation of 4,764 and a standard error of the average 0.993). In the second class, the average value in the "a" class decreased by 0.6 and amounted to 22.72 (with a standard deviation of 3.995 and a standard error of 0.799), in the "B" class, the average value

decreased by 1.69 and amounted to 17.48 (with a standard deviation of 4,511 and a standard error of 0.941). As a result of the study, in the “a” class we recorded a higher level of development of components of cognitive activity of students than in the “B” class, which indicates a greater predisposition to the development of giftedness. The hypothesis of our study about the existence of differences in educational motivation in younger students with different levels of cognitive development is confirmed. Thus, it can be concluded that one of the sources of dissynchrony is a set of experienced mental States of children with a high level of development of cognitive processes in these conditions can lead to one of the sources of dissynchrony.

### 3.2.2. The main diagnostic stage. Job content:

At this stage of the experiment, scientific and methodological support of the project was developed and implemented.

In order to identify the relationship of educational motivation and the level of development of the components of cognitive activity in the procedure pair correlation module Statistical Base program SPSS using Pearson correlation coefficient (which is a measure of linear communication) and significance levels for him, we measured the relationship between the variables first for 2 “a” class:

In 2 “B” class we also revealed the relationship of educational motivation and components of cognitive activity. A correlation significant at the level of  $p \leq 0.05$  for educational motivation and concentration of attention (0.487) was established, correlations significant at the level of  $p \leq 0.01$  were revealed for educational motivation and stability of attention (0.898), for educational motivation and visual memory (0.627), educational motivation and thinking (0.615).

Thus, the hypothesis of our study about the existence of the relationship between cognitive abilities and educational motivation of younger students is confirmed. In this case, we can expect that an adequate educational environment, which supports a certain level of motivation, reduces the rates of dissynchrony. As a confirmation of the above, we can point to the experimental studies of scientists, which formed the basis for the confirmation of the concept of dissynchrony and are already reflected in scientific publications.

### C. *Experimental verification of the effectiveness of the proposed content of work*

In the course of our longitudinal study for two years, we revealed negative dynamics of educational motivation of younger students with giftedness: the average value of the level of educational motivation of 1 “a” class was 23.36 (according to the data obtained using the software product SPSS in the calculation of the t-criterion in the sample statistics). In the second class in the sample statistics, the average value in the “a” class decreased by 0.6 and amounted to 22.72.

In “B” class dynamics of educational motivation during the experiment is also negative. The average value of 1 “B” class was lower compared to 1 “a” class and was 19.17. For the year in “a” class the average value decreased by 1.69 and amounted to 17.48.

Thus, the study showed that the decrease in the level of motivation in the “B” class compared to the “a” class was more significant (1.69 vs. 0.6 points). Therefore, the hypothesis of the study of a smaller decrease in the level of educational motivation in younger students with a high level of cognitive abilities than in younger students with low cognitive abilities has been proved. It turned out that the lower level of development of the components of cognitive activity, revealed by us in the course of studying the level of development of the components of cognitive activity in the “B” class, affects the dynamics of educational motivation; its reduction is more intense.

Thus, it is not less significant in enriching the concept of dyssynchrony mental development of gifted and believe the study of motivation as a component of dyssynchrony on a sample of gifted [7], who, in turn, confirm the possibility of the description of the formula of the coefficient of dyssynchrony characterizing the degree of dispersion of indicators of mental development in the age range of norms (in the period of the longitudinal study and in accordance with the conditions of development).

The peculiarity of the project is that the results of the study demonstrated the existence of differences between the level of educational motivation of students in classes with different levels of intellectual abilities at all age stages of schooling.

The advantage in the intellectual and creative development of gifted students “a” class compared to “B” class is found at the very first stage of education in primary school.

Analysis of the dynamics of the level of educational motivation showed that in the classroom with a higher level of development of the cognitive sphere, it decreases less intensively. In addition, we have identified correlations significant at the level of  $p \leq 0.01$  for educational motivation and attention stability (0.671), for educational motivation and visual memory (0.614), for educational motivation and motor-auditory memory (0.523), educational motivation and thinking (0.724) – in the “a” class; correlations significant at the level of  $p \leq 0,01$ , for educational motivation and stability of attention (0,898), for educational motivation and visual memory (0,627), educational motivation and thinking (0,615) – in “B” class are revealed.

Thus, we have confirmed our hypothesis about the existence of the relationship between cognitive abilities and educational motivation of younger students.

It is assumed that the learning motivation of primary school children is also directly connected with the peculiarities of the relationship of children to learning, and the level of satisfaction

with the training. We agree with the opinion of psychologists that it is an indicator of the correspondence of the content, forms and methods of teaching to the cognitive needs and opportunities of children, where dissynchrony can act as a reason for the non-adaptive behavior of a gifted child or teenager in his relationship with the environment. Features of training can both enhance and weaken the dissynchrony.

It is known that a high level of intellectual development not only does not guarantee a gifted student success in the learning process, but often combined with great difficulties in establishing contact, and this is the phenomenon of intellectual and social dissynchrony.

The positive attitude of schoolchildren to learning is the most important psychological condition for the development of their giftedness.

Emphasizing in the guidelines the importance of continuous monitoring of educational motivation and components of the cognitive sphere of younger students in secondary schools, we offer teachers to use available and adapted for use in this age group techniques in the prevention of dissynchrony.

#### IV. CONCLUSION

The results of the research allow to improve the training of teachers, to consider individual and differentiated approaches in working with children with talent and high motivation in order to reduce the phenomenon of dissynchrony. The materials of the

article can be useful in practical terms for specialists and teachers. Taking into account the results of this study, it is possible to identify a number of scientific problems and promising areas that require further consideration: the deepening and expansion of some of the provisions set out in the article related to the formation and accumulation of psychological and pedagogical experience.

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