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COGNITIVE-STYLE APPROACH TO PSYCHOLOGICAL SUPPORT OF THE GIFTED PUPILS MOUNTAIN SCHOOLS OF THE UKRAINIAN CARPATHIANS

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Abstract. The differential-cognitological point of view, giftedness is “a systemic quality of a personality that develops throughout life and determines their abilities to achieve exceptionally high results in one or more activities compared to those of other people”. Herewith, it is the fundamental concept of general aptitude, under which “the level of general abilities development that determines the range of activities in which a person can achieve great success” is understood. Within the structure of general aptitude intellectual giftedness is singled out as the level of development, as well as the type of organization of individual mental experience, which ensure an opportunity of creative intellectual activity, i. e. an activity, related to the creation of subjectively and objectively new ideas, to the use of innovative approaches to solving problems and openness to controversial aspects of the situation and so on. In order to identify talented children and adults the value of intellectual quotient (IQ) is still most commonly used. Psychometric approach (the measurement of psychic phenomena with the help of standardized IQ tests) to the diagnosis of intellectual giftedness, which is dominant in psychological diagnostics today, by definition, cannot “measure” the phenomena of an individual psyche, since the modern level of psychological science does not allow to proceed to psychological diagnosis, let alone prediction of a certain person’s behavior, on the basis of individual results in performing a psychological test (psychometric test of intelligence, personality questionnaire, projective methods etc).

In our opinion, many problems in psychological and pedagogical support of gifted children could be avoided by making use of cognitive-style approach to diagnosis of intellectual giftedness, creative abilities, propensities and peculiar mental traits of a separate individuality. Objectivity of such an approach is corroborated by the results of individual cognitive styles (hereinafter CS) diagnostics, carried out by means of experimental techniques. In contrast to standardized tests, such techniques allow to perform diagnostic tests individually and reveal the peculiarities of the arrangement and functioning of an individual mind.

Obviously, nowadays we are faced with the need for providing theoretical, methodological and empirical grounds for the development of a conceptual model that would consider giftedness as an integral psychological system, all aspects of which could be understood in the context of age dynamics and mental experience of an individual. CS approach to interpreting and diagnosis of giftedness provides a reliable theoretical basis for working out a systematic methodology of psychological diagnostics of the general aptitude, as it meets the basic principles of humanization of the educational environment in Ukraine. CS approach is child-centered, therefore, it brings in focus individual uniqueness and originality of each child.

Keywords: giftedness, creative intellectual activity, differential-cognitological point of view.

The topicality of the problem is due to the fact that the development of gifted children, their psycho-pedagogical support constitute a paramount task of the modern educational system. Systematization, generalization and appropriate interpretation of empirical data on this issue determine the necessity of working out a fundamentally new approach, which would allow to move from fragmented, static understanding of giftedness to studying it from the standpoint of integrity, dynamism and facilitating positive child development.

The purpose of the investigation consists in providing sufficient theoretical justification for applying a cognitive-style approach to diagnosis and psychological support of gifted students.

Nowadays psychopedagogy tries, on the one hand, to provide a solid theoretical ground for the general scientific concept of giftedness, and on the other hand – to solve problems in diverse application areas of intellectual giftedness diagnostics, encompassing all the age stages of ontogenetic development of an individual. It is also concerned with such issues as educational process, upbringing and psycho-pedagogical support of gifted children, optimization of the process of their socialization and self-realization. Although systematic research of giftedness was launched in the 20s of the last century, until now, scientists have not reached a consensus on the definition of the notion under investigation, as well as the optimal strategy for the diagnosis of giftedness as an integral mental phenomenon¹⁻¹⁵.

Modern definitions of giftedness, despite the active use of terms “system”, “system approach”, implicate mainly its already implemented forms – outstanding achievements, not only of adults but also of children. At the same time, the procedural-diagnostic side of those achievements is weakly disclosed from the psychometric perspective. Talent development is often identified with the dynamics of its separate aspects, without taking into account their interaction with other mental formations in the structure of an integrated personality. Adoption of a systematic approach in this field requires not only an almost complete reconstruction of the existing concepts of giftedness diagnostics, but also the development of new psychotechnological solutions, i.e. a supply of means capable of objective conceptualizing of the research subject as a multidimensional, holistic, dynamic and dependent on internal mental determinants and external conditions phenomenon^{9,p.3}.

From the differential-cognitological point of view, giftedness is “a systemic quality of a *personality* that develops throughout life and determines their abilities to achieve exceptionally high results in one or more activities compared to those of other people”^{3,p.353}. Herewith, it is the fundamental concept of *general aptitude*, under which “the level of general abilities development that determines the range of activities in which a person can achieve great success” is understood^{3,p.353}. Within the structure of general aptitude *intellectual giftedness* is singled out as “the level of development, as well as the type of organization of individual mental experience, which ensure an opportunity of creative intellectual activity, i. e. an activity, related to the creation of subjectively and objectively new ideas, to the use of innovative approaches to solving problems and openness to controversial aspects of the situation and so on”^{8,p.243}. In order to identify talented children and adults the value of intellectual quotient (IQ) is still most commonly used. *Psychometric approach* (the measurement of psychic phenomena with the help of standardized IQ tests) to the diagnosis of intellectual giftedness, which is dominant in psychological diagnostics today, by definition, cannot “measure” the phenomena of an individual psyche, “since the modern level of psychological science does not allow to proceed to psychological diagnosis, let alone prediction of a certain person’s behavior, on the basis of individual results in performing a psychological test (psychometric test of intelligence, personality questionnaire, projective methods etc)”^{7,p.67}.

In our opinion, many problems in psychological and pedagogical support of gifted children could be avoided by making use of *cognitive-style approach* to diagnosis of intellectual giftedness, creative abilities, propensities and peculiar mental traits of a separate individuality. Objectivity of such an approach is corroborated by the results of individual cognitive styles (hereinafter CS) diagnostics, carried out by means of experimental techniques. In contrast to standardized tests, such techniques allow to perform diagnostic tests individually and reveal “the peculiarities of the arrangement and

functioning of an individual mind"^{6,p.8}. Professor M.A. Holodnaya commented on the subject: "Let us reflect on this situation! For measuring different cognitive styles at operational level quite simple procedures, aimed at identifying individual distinctions in cognitive functioning, are used... However, these individual distinctions in cognitive functioning are associated with a wide range of different psychological characteristics of individuality, starting with sensomotoric skills and ending with the mechanisms of psychological protection"^{6,p.265}.

Since the first investigations of human intelligence in the 20-40s of the 20th century (R. Amthauer, A. Binet, R. Cattell, H. Eysenck, J. Raven, C. Spearman, L. Thurstone, D. Wechsler and others) in European and American psychological studies and educational systems giftedness is understood in terms of a high level of general intelligence; for identifying talented individuals special tests aimed at gauging intellectual quotient (IQ) are used^{4,p.331-340}.

In the US and European systems of Education the classification of levels of giftedness depending on the quantitative values of IQ is in current use. According to it, all gifted children can be ascribed to one of 5 levels: 1) 115 points and more "bright"; 2) 130 and more – "gifted"; 3) 145 and more – "highly gifted"; 4) 160 and more – "exceptionally gifted"; 5) 175 (sometimes 180) and more – "profoundly gifted"^{2; 12; 13}.

Today, however, many psychologists refuse to use a high value of IQ as the sole criterion for the diagnosis of giftedness. Thus, in a review article on modern research of the phenomenon of giftedness, E. Winner provides different views on this issue¹⁵, the matter of which essentially comes down to outlining the "special" types of giftedness, following the classification of special abilities (mathematical, linguistic, musical etc.). We are of the opinion that such classifications lack the main thing: understanding of giftedness as a unique *phenomenological component of an integrated personality* and not just its cognitive-productive, motivational, activity-related or behavioral aspects.

The narrowness of the psychometric approach to the notion of giftedness has led to the appearance of a six-level classification of giftedness in the report of the US Federal Department of Education: 1) high general intelligence (IQ over 130); 2) high special abilities (mathematical, linguistic etc); 3) high creative or productive thinking (putting forward new ideas, new products, new design devices etc.); 4) leadership skills (high social intelligence, different kinds of leadership etc); 5) propensities to fine or performing arts (artistic talents); 6) psychomotor ability (sports achievements)¹¹.

Consequently, several natural questions arise: What do actually intelligence tests measure? What lies behind the well-known IQ index? M. A. Holodnaya notes that each task of a test (task systems, such as intelligent scales techniques by R. Amthauer, R. Cattell, J. Raven, D. Wechsler etc) reflects some psychological symptom in a gauge of the evidence of some intelligence qualities, which become apparent in a specially designed form of activity. The specific and standardized material, as well as situational environment of the probationer (age, level of development, background knowledge, emotional state, motivation etc) is also important in this context. In fact, we deal with an efficient index that assesses the accuracy and speed of response. Is it consistent to switch from the symptoms (reaction) immediately to the definition of such a complex integrated structure as intellect? Such an attempt would be nothing but professional frivolity^{7,p.66-67}.

One should take into account, that each standardized methodology is designed to measure the mythical "average respondent" and is rather a means for experimental scientific research than a practical (pedagogical) activity. The main thing, these tests lack is the unique human identity, which cannot be measured with one single tool, no matter how perfect it is. A renowned classical testologist A. Anastasi, commented on this occasion: "No psychological test is capable of measuring more than some features of behavior. Whether or not this behavior is indicative of any other kind of behavior is can be checked empirically"^{1,p.20}.

Nevertheless, in Western psychology the tendency to evaluate intellectual giftedness on the basis of the standard psychometric test results is the dominating one. About 2% of the probationers achieve the highest scores – they are classified as "intellectually gifted". It all turns on the question: are these people really intellectually gifted? We shall try to answer this question from the perspective of the modern achievements of cognitive psychology. Convergence abilities are intellectual abilities that manifest themselves in the indices of the information processing efficiency, and primarily in terms of

accuracy and speed of the only possible (regulatory) response under restricting activity conditions^{8,p.244}. Hence, they characterize the adaptive abilities of an individual intelligence. Convergence abilities are presented by three properties of intelligence^{4,p.316-318}:

1. *Properties of the intelligence levels*, which characterize the achieved level of cognitive mental functions (verbal and nonverbal) development, providing the basis for the cognitive mapping processes (such as sensory discrimination, speed of perception, manipulation of spatial concepts, concentration and distribution of attention, and so on). L. Thurstone called these properties of intelligence “primary mental abilities”. R. Cattell divided them into “*fluid*” intellect, which is genetically determined and “*crystallized*” intellect – a product of socialization and learning. A typical example of “level” properties of intelligence are the characteristics of intellectual activity diagnosed by D. Wechsler’s or R. Amthauer’s intelligence scale tests.

2. *Combinatorial properties of intelligence* – characterize the ability to recognize different types of links, relationships and regularities. In the broadest sense, it is the ability to match elements of a problematic situation with one’s own knowledge into different combinations. In particular, the widely known tests of verbal analogies were worked out according to this principle.

3. *Procedural properties of intelligence* – characterize the elementary procedure of information processing, as well as operations, techniques and strategies of intellectual activity. In testology this type of properties was not even taken into account, since the test diagnostics focused solely on the assessment of the productive aspect of intellectual activity. Owing to numerous researches in the field of cognitive psychology, new ideas of intelligence as not a static property, but rather a dynamic system of information processing appeared.

Thus, convergence abilities – in the form of level, combinatorial and procedural properties of intelligence – characterize one of the aspects of intellectual activity. Accordingly, low or high test performance shows the degree of well-formedness of a particular convergence ability.

The problem of interpretation of test results should also be taken into consideration. An attempt to apply psychometric tests to these phenomena is based on the assumption that an intelligence feature is a linear (unipolar) measurement, which can be described in terms of “low index/ high index”. In fact, any psychological feature is a multidimensional formation, which has a complex structure. The character of an individual intellectual resource is determined by a balanced combination of cognitive abilities of various types, as well as the formedness of cognitive experience components, individual cognitive advantages, motivation, needs etc.

Problems arise when we try to interpret the lowest results of psychological testing as “bad”, and high – as “good”. Interpretations of such kind are not always correct. There are many individual variations in the character of manifestation of various intellectual features that cannot be limited to the norms of traditional evaluations of test results (for example, each child’s individual cognitive style determines the general profile of their intellectual abilities). Accordingly, deviation of test results towards lower or higher indices cannot be regarded as a deviation from the norm⁷.

Finally, when testing a child of pre-school or school age, one should bear in mind that their actual intellectual abilities show up only in the process of psychological development. All children have their individual pace of maturation and explication of psychological functions, not to mention the gender difference in the dynamics of psychological development.

Once convinced of the low diagnostic and prognostic validity of psychometric tests and the one-sidedness of their results, psychologists began to address a cognitive-style approach to the study of psychological phenomena, which contribute to the formation of an integrated personality. This line of research turned out to be especially effective in diagnosing intellectual giftedness of children of different age, as well as in psychological and pedagogical support of these children at different stages of ontogenesis. This can be accounted for by the fact that the status and phenomenology of cognitive styles (CS) and related intellectual and personal characteristics are determined by a number of fundamental factors: CS, being one of cognitive process characteristics, are viewed as a manifestation of personality foundation, since individual ways of information processing, as shown by experimental studies, were closely related to the needs, motives, affective-volitional and other spheres of

individuality. CS act as an intermediary means, facilitating the connection of situational influences of natural and social environment with behavioural reactions of a person. Furthermore, understanding the specificity of the evaluation and information processing by a person is of great practical importance, since it allows making predictions concerning human behavior in specific situations. The results of studying CS laid the basis for cognitive theories of personality. In contrast to personological concepts, CS theories claim that the determinants of personality traits and characteristics of individual behavior should be sought in the peculiarities of a person's perception, structuring, coding, categorization, interpretation, prediction and understanding of reality^{4; 6; 10}.

Nowadays psychologists describe about twenty different structural components of a holistic CS of an individual. Among them the best studied are field-dependence/independence, analyticity-abstractness, impulsivity-reflectivity tolerance to uncertainty, cognitive simplicity/complexity and others. The content of the abovementioned CS and methods of their diagnostics are beyond our research because they are widely covered in the specialized literature^{4; 5; 6}.

Modern psychology defines CS as individual unique ways of processing information about surrounding reality (M.A. Holodnaya); sustainable ways of cognitive process organization, which manifest themselves in the individual traits, mental hierarchy that affects all levels, including personal character (A.V. Libin); integral character of personality, associated with the type of reaction or the choice of actions, strategies of behavior and peculiarities of controlling one's cognitive processes, covering a number of special features of cognitive activities in the course of personal development, which can be identified empirically (N.I. Povyakel)^{4,p.748}.

However, these somewhat divergent definitions have some common points, highlighting the distinctive features of CS: 1) CS is a structural characteristic of cognitive sphere, which emphasizes the peculiarities of its organization and has no direct relationship to the characteristics of its content; 2) CS constitutes individual methods of obtaining products of cognitive activity, i. e. instrumental characteristic of intellectual activity, which can be opposed to its productive characteristic; 3) CS, unlike traditional unipolar psychological measurements, is a bipolar measurement, in context of which a single CS is described in terms of the two extreme forms of intellectual behavior (for example, field-dependence/independence); 4) CS cannot be defined from the point of view of value judgments, since the representatives of a certain style have particular advantages in situations where their individual cognitive qualities contribute to effective adaptation; 5) CS is a general characteristic of the subject, consistently manifested at different levels of intellectual functioning and in different situations; 6) CS is showing a preference to a particular way of intellectual behavior (that is a person can choose any way of processing the information, however, he involuntarily chooses some particular way of perceiving and analyzing what is happening)^{6,p.40}.

The above described approach developed fundamentally new methodological techniques. In CS researches, a child is not supposed to solve the problems in the usual sense of the word. They are exposed to a simple situation without any hard-coded conditions, requirements and time constraints with open type instructions, according to which they can choose their own most convenient variant of response (e.g., to arrange some items into groups according to their own criteria, to express their opinion about a given situation, to make decisions within unlimited intervals of time and so on). In CS approach, there are no regularities for evaluation of individual results. Ascribing of a probationer to one of the two CS poles is carried out on the basis of such criteria as the median. In our investigation we paid attention to one more argument in favor of CS approach – to its humanistic, child-centric essence, which correlates with the pedagogical principle “Non-gifted children do not exist!”, this approach does not sort the children by the mythological criterion of IQ into the elite and the second- or third-best.

The efficiency of applying the approach to intellectual giftedness is determined by the following phenomena⁶:

- a certain ability characterizes the level of success in intellectual activity (i.e. serves as the evidence of its effectiveness). Style becomes a mode of realization of intellectual activity (i.e. its

procedural characteristic). Consequently, different styles can provide equally high success rate of solving a particular problem;

- an intellectual ability is a unipolar measurement (individual indices of ability levels are situated on a vertical scale from minimal to maximal figures), while a cognitive style is a bipolar measurement (individual indices are located on the two poles of the horizontal scale, and depend on the median criterion);

- abilities always have a value context (an increase of abilities is always good). The style phenomena are not concerned with such a context, because poles of any style are equivalent from the point of view of the possibility of effective intellectual adaptation;

- an intellectual ability is variable in time (its levels vary depending on the age, education, experience etc). CS is a stable characteristic of a person, inherent at different stages of ontogenesis and in different conditions of socialization;

- an intellectual ability is specific in relation to the content of certain activities. CS has a generalized form of self-manifestation in various kinds of mental activity.

One of the most surprising results in the field of the research of CS phenomenon consists precisely in the fact of the existence of numerous and diverse links between cognitive style characteristics and personality properties. M.A. Holodnaya emphasizes the contrast between CS approach and IQ-based approach, which at the level of empirical studies proved to be poorly associated with personality traits and peculiarities of social behavior. The implication is that the value of IQ has a very remote relation to the regulation of mental life a person. From this point of view, CS options turn out to be more relevant in gauging the level of intellectual maturity^{4; 6}.

Our analysis of contemporary approaches to diagnosis of gifted children demonstrates methodological, methodical, ethical and pedagogical inconsistency of the psychometric approach to the study of psychological phenomena of a person. The results of our investigation highlight the need for a holistic approach to the creation of a unified psychopedagogical concept of giftedness. Obviously, nowadays we are faced with the need for providing theoretical, methodological and empirical grounds for the development of a conceptual model that would consider giftedness as an integral psychological system, all aspects of which could be understood in the context of age dynamics and mental experience of an individual. CS approach to interpreting and diagnosis of giftedness provides a reliable theoretical basis for working out a systematic methodology of psychological diagnostics of the general aptitude, as it meets the basic principles of humanization of the educational environment in Ukraine. CS approach is child-centered, therefore, it brings in focus individual uniqueness and originality of each child.

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