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APPLYING CHT AND ACTIVITY APPROACH FOR FACING CONTEMPORARY CHALLENGES

КУЛЬТУРНО-ИСТОРИЧЕСКАЯ ПСИХОЛОГИЯ И ДЕЯТЕЛЬНОСТНЫЙ ПОДХОД: ОТВЕТЫ НА СОВРЕМЕННЫЕ ВЫЗОВЫ

Mastering Way of Action as an Integral Indicator of the Development of Intellectual Abilities in Learning: to the Problem of Constructing an Activity Diagnostics of Abilities

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The papers describes results of theoretical within activity approach analysis and experimental monitoring research of developed in educational institutions abilities. Authors propose theoretical conclusions that ability is determined by the individual acquisition of the ukturl way of action in joint activity when solving an educational problem. But at the same time ability is not identical with the revealed and reconstructed way of action on that it is based. It is the abilities under formation that are being mastered by the student in the educational process represent one of the leading mechanisms, the protagonists of the development of human subjectivity. The papers presents results the monitoring diagnostics of the ability to understand in different age groups of schoolchildren. Diagnostics of the ability to understand was considered on the basis of students mastering 6 different methods and techniques of understanding. Authors claim complex activity diagnostics of the development of understanding, along with diagnostics of other abilities (reflection, theoretical thinking, mutual understanding, goal-setting, self-determination, etc.) makes it possible to assess the quality of national education.

Keywords: ability, activity approach, the way of action, thought act, joint activity, thought activity, ability of understanding, the monitoring diagnostics.

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1. What and how is assessed in education

The issue of assessing educational success and the effectiveness of teaching methods is associated with the diagnostics of the results achieved by students on the basis of the developed indicators. As a rule, the developed indicators are based on the assessment of the performance of tasks by students or answers to questions. In one case, these are correct or incorrect answers to the presented test, the problem to be solved, the task being performed, or the question asked. In the second case, it is the interpretation of errors when performing tasks, based on the analysis of which a conclusion is made about the strength of the assimilated material and about the depth of their development and consistency. In the third case, this is a reconstruction of the

way the student acts when solving a problem, setting of a problem, or fulfilling a task.

Three possible approaches to diagnosing learning outcomes are based on different ideas about what is formed and developed as a result of learning. In one case, it is a specific skill or practiced ability to answer accurately a question asked, perform an operation or apply a rule in a given specific task context. In the second case, it is the assessed competence of the student, the presence and level of development of which is agreed by the teachers or school supervisor evaluating it. In the third case, it is a formed and developed intellectual ability.

In the first case, the language of description of the units of the content of education being mastered coincides with the language of description of what the student has mastered and what he has formed. In this case, it is assumed that the student masters exactly what the teacher explains and shows to him. Whether it be the division operation, the rule for multiplying fractions, or the formulation of Ohm's law. In the second case, the assessment is based on mutual recognition that the student has mastered a certain communicative universal learning action — for example, the ability to enter into a dialogue and conduct it, taking into account the peculiarities of communication with various groups of people. In the third case, the subject of assessment is the student's way of action, for example, deepening the understanding of a certain meaningful version by understanding the versions of "others" in the context of interaction and collective communication, thanks to which the level of development of the individual ability of understanding is assessed.

The fundamental point of assessing the learning outcome is that in the latter case, not one, but three different ways of describing the result are used:

1. Description of what is being mastered in the form of subject material;

2. Description of educational content units presented through a certain way of action;

3. Description of what is shaped in the students themselves as new mental formations.

Obviously, the ways of describing learning outcomes do not coincide, although they should be integrated with each other. Units of educational content are mastered by students in the form of ways of action — setting of a problem, modeling action, schematization of understood data, etc. In this case, one must proceed from the fact that they develop intellectual abilities of understanding, reflective thinking, goal-setting, etc.

The generalization of the mastered methods of action is the main indicator of the development of abilities. And the meta-subject learning outcome is the formed intellectual abilities based on certain general (universal) types of activity. The need to distinguish and at the same time connect three ways of describing learning outcomes (the language of subject learning material, the language of methods of action, and the language of abilities) characterizes a fundamentally new approach to building a system for diagnosing learning outcomes.

The view on the learning outcome as the mastery of generalized methods of action by students was deeply worked out by V.V. Davydov [16]. According to V.V. Davydov, the teacher should organize the educational material in such a way in a situation of searching for a solution to the educational problem so that, working with it, the student would discover a new way of action and the corresponding system of concepts. To do this, the student must perform special educational activities — modeling, schematization, formulating a research hypothesis, putting forward a design concept, etc.

In our opinion, the meta-subject result is associated both with the development of a generalized method of action, and with the development of the corresponding abilities and cannot be reduced only to universal educational actions. This is impossible, if only because the action itself must be reflexively distinguished and its features studied. To do this, students need to form the ability of reflective thinking, which in its structure is more complicated than all universal skills and the development of which depends on the age of the children. Thus, we are faced with a kind of paradox: in order to consider educational skills as an achieved meta-subject result, a student must form a general ability (reflective thinking), which in its content is more complicated than these skills.

It is inappropriate to transform universal learning activities and abilities into a fixed set of learning units for students to master. By including the child in solving specific educational problems and tasks, one cannot close the opportunity for him to master a fundamentally new way of action, tracing the conditions for the origin of knowledge, or initiate conditions for the emergence of new abilities. The way of action is not given before its implementation, and the ability is mediated by the process of students' search for a common way of solving problems. Therefore, it is impossible to form abilities without building a zone of searching, transforming action. In numerous works of L.V. Berzfai [4], V.V. Rubtsov [20; 21; 23; 24] and N.G. Alekseev [2; 3], it is shown that the development of a general method for solving a problem:

1) is based on search and testing actions that reveal the meaning of the educational task and the principle of performing the action in the situation of the educational task;

2) is inextricably linked with the very form of organizing the joint action of the students themselves, students and the teacher, which is the initial and predetermines the individual actions of the participants in the situation,

3) is provided by reflection of the form of organization and implementation of collective action

4) requires constructing an idea of collective action and analyzing the conditions for its implementation.

2. Way of action as the original unit of ability

The transforming action is carried out in all spheres of human activity. We can consider action in the ideal reality of thinking with an indefinite set of ideal operations (V.V. Davydov, V.P. Andronov [15]), study action in communicative-dialogical processes (V.V. Rubtsov [23; 24], R.Ya. Guzman [20], A.A. Margolis [22], Elvira S. Akopova, Olga I. Glazunova, Yury V. Gromyko [1]),

and finally, consider the features of constructing action in a situation of uncertainty and unstructuredness of collective interactions (O.I. Glazunova, Yu.V Gromyko [9]).

In his famous work Thinking and Speech, L.S. Vygotsky emphasized that "thinking and speech have completely different genetic roots" [5]. Following L.S. Vygotsky, it is legitimate to assert that thinking, communication and action have different origins. V.V. Davydov [14] identified the structure of the act of thought. G.P. Shchedrovitsky [31] and V.Ya. Dubrovsky [18] described the structure of the act of action. John Langshaw Austin [19] and John Rogers Searle [26] identified the communicative act providing special conditions to implement actions.

Abilities, respectively, are manifested in three different acts (thinking, communication, act of action) and have different forms of implementation. Moreover, the actor action is included in both thinking and communication. Such abilities as reflexive thinking, understanding, imagination, goal-setting, modeling, schematization, putting forward a design concept in the project action, the advancement of a research hypothesis are determined by the context of solving the problem in which they are implemented. This means that the ability is realized in the form that is specified by the search conditions for a general way of action that single out a certain class of action tasks. In other words, abilities are organized differently depending on the form in which the way of action with the content of the object of the task is implemented in thinking, communication and, in fact, in the situation of action.

Analysis of works in the field of the theory of human activity and learning activity allows us to consider ability as a dynamic integrity of states of consciousness, connecting object of activity with the meaning of situation and providing a systematic search for a way of action [1; 9]. This dynamic integrity of states of consciousness organizes the way of action and is characterized by special dynamic transitions (casts). It is these transitions that connect the three acts described above: the act of thought, the act of communication, and the act of action. The transitions unfold in the range from grasping the ideal principle in thinking to identifying a "living" difference in communication of one's own subjective vision of this principle and the vision of the possible action of another participant in the situation, and then to the implementation of the principle in a specific situation of collectively organized action. The ideal, individual subjective, collective-subjective and joint-objective become constant points of reference and a space of mutual mediation in the structure of "living" ability. In Fig. 4, the top line uniting zones 1 and 2 conventionally denotes the sphere of objective. The bottom line, uniting zones 3 and 4, denotes the sphere of subjective. The column on the left uniting zones 2 and 3 is the sphere of collective, collaborative. The column on the right uniting zones 1 and 4, is the sphere of individual.

In a number of works [33; 34], the situation of a group solution of a learning problem is considered as a combination of the results of individual actions. Therefore, mastering the content (object or situation) is described schemat-

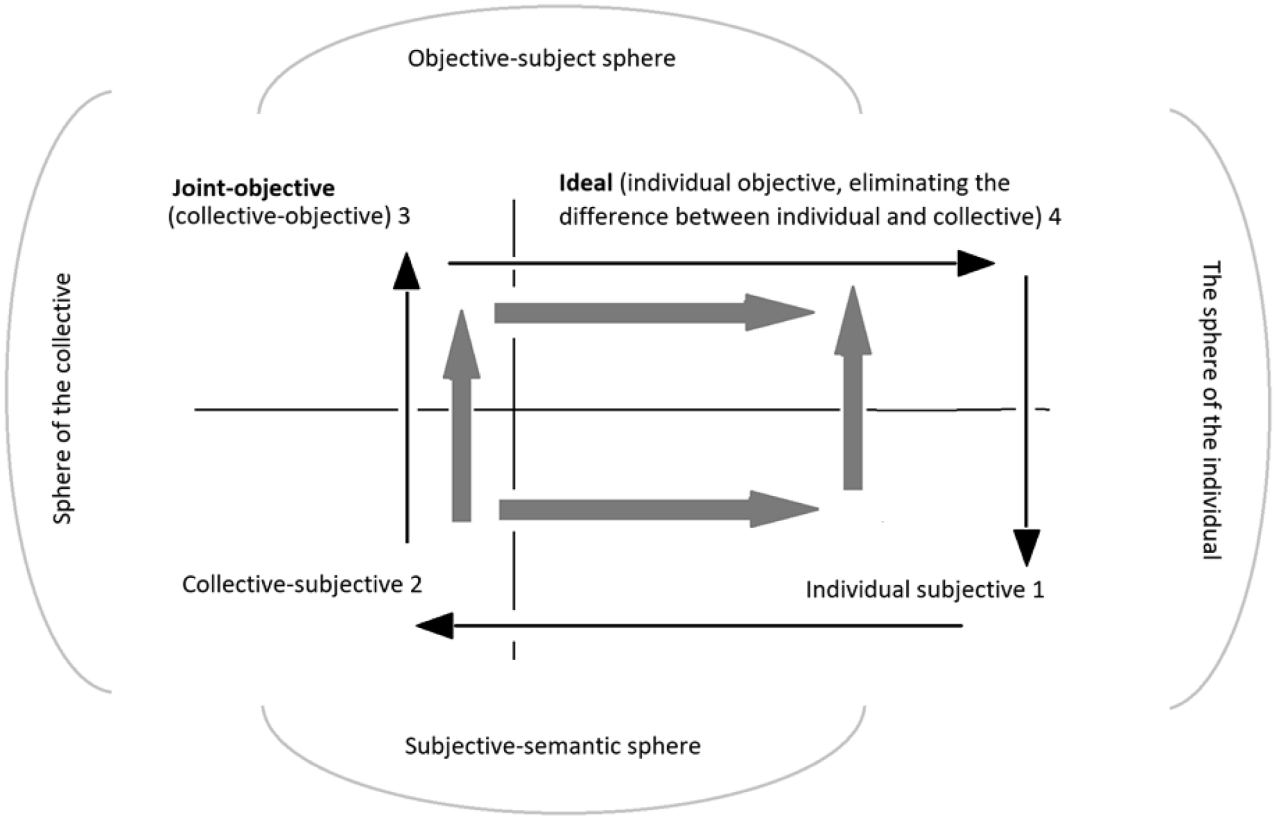

Fig. 1. Ability as a system of mediated transitions of 3 interrelated acts: act of thought — act of communication — act of action (conventional image)

ically (thin arrows) in the form of a process that begins in zone 1, then the transition to zone 2 based on the co-organization of individual actions into a joint action, then goes into zone 3, where the general method of collective work is objectified and symbolically consolidated, and finally exit to zone 4 based on the assignment of the results of joint educational work by each member of the study group. The process of collective solution of an educational problem is considered in a completely different way in the works of V.V. Rubtsov [23], G.P. Shchedrovitsky [31], O.I. Glazunova, Yu.V. Gromyko [9] and others. These works show that joint action does not consist of the addition of individual actions of individuals. The statement of the problem is determined by the form of organization of collective thought activity. The joint form of organizing action when setting of a problem between students and the teacher is the initial one. Therefore, the movement starts from zone 2 (thick arrows). Then, through the cognitive-affective conflict, transitions are made simultaneously from zone 2 to zones 3 and 1 on the basis of highlighting the objective content of the collective task and the form of individual participation in a conflicting collective action, and from zones 3 and 1 to zone 4, where there is a solution that removes the conflict. The individualization of the content being mastered with such an approach is not a primary, but a secondary process associated with the reflection of the form of organizing joint action and one's participation in it. Thus, an important step has been taken in considering the ability as an integrative unit of a person's activity capabilities, linking the development of cultural modes of action and the individual form of implementing these methods in a situation of collective interactions [26; 1; 9].

It is also obvious that the ability in the considered approach differs from skills, abilities, competencies, and techniques of action, in essence. Skill, in contrast to ability, is associated with mastering and automating operations in human behavior that are externally presented and fixed in the form of procedures and their clearly defined sequence. Ability is built on the basis of the implementation of flexible reflexive control of the execution of operations and their sequence in accordance with the allocated specificity of specific situational circumstances. Competencies characterize an external coordinated (conventional) assessment of the effectiveness of the employee's performance of his professional function without identifying the mode of action and means of organizing the action. Finally, intellectual technique is an element of an individual ability that characterizes the semantic connection of the objectivity of the action, the characteristics of the situation and the elements of the action in the form of operations that are distinguished in mind. In the structure of the ability, as follows from our reasoning, there is an integration of the subjective-semantic, energetic, connected with meaning of situation and objective side of the action being built.

3. Abilities and state of consciousness

It appears that the state of consciousness is an important condition for organizing the ability, as opposed to skill, ability and competence. It is the state of consciousness that provides a dynamic (mobile) character in the organization of the ability. This is due to the unavoidable subjective orientation of the ability. An ability cannot be reduced to a known set of operations, since the most important characteristic of an ability is the isolation of operations in an action being taken. These operations do not exist outside the direction of consciousness that distinguishes operations.

G.P. Shchedrovitsky [30] discussed that consciousness is nothing more than a specific mirror reflecting the content of thinking and the object of action. The new content is expressed by symbols, signs, schemes in the processes of semiosis (the generation of signs), and consciousness only reflects the signs themselves and what the created signs determine. Continuing this thought, it can be argued that ability is a kind of representative of the world of consciousness, which determines the complicated optics of a reflecting mirror — its convexity or concavity, focus on a reflected object, a magnification in the reflection of some details and a demagnification in others, etc.

Thus, the considered ability differs from the psychical function, since the ability is determined by the context of the action and is realized in action on the one hand, and on the other hand, it is determined by the mechanisms of the work of consciousness. It is abilities, not psychical functions, that emerge from the world behind the looking glass of consciousness onto the stage and become the acting actors in the drama of limitations, which are faced by the reversing action of the drama, which largely determines the situation of the student's development in the conditions of his interaction with others in the process of joint collective activity.

Therefore, we should return to the well-known statement of L.S. Vygotsky that "a mental function appears on the stage twice, once as an interpsychic process between people, and another time as an intrapsychic process within a person", "Every function in the cultural development of a child appears on the scene twice, in two roles, first — social, then psychological, first between people, as an interpsychic category, then inside a child, as an intrapsychic category" [6, p. 145].

At the same time, a point to keep in mind is that in the development of human subjectivity, the key role belongs to the mastered ability. The ability is exteriorized and socialized, acquiring competence characteristics due to external assessments of a person's actions, and is individualized and subjectivized in the process when a person guides his own behavior. From this perspective, consciousness creates an opportunity for a person to be involved in interactions with other people and to exercise regulation and subjective guidance of the ability itself individually. Continuing the thought of L.S. Vygotsky, we can say that ability appears on the stage twice: first, as a spellbinding and initially inaccessible action of a skilled person — an adult or older child, and then as the child's own action (mine). Someone else's skillful action is observed from the outside and at the same time is measured as possible, that is, future own action. One's own trying action is associated with inner experiences and regulation, but at the same time, it is the subject of

communication with other skillful and trying unskillful ones, with an attempt to look at one's own action from their positions and through their eyes.

The restoration of the real drama of human subjectivity requires the selection of the entire set of acting characters in the form of mastered objective abilities (write, read, add, subtract, multiply, substitute numerical values into the formula, etc.) and meta-objective abilities (understand, communicate, carry out reflexive thinking, solve a problem, schematize, form an action plan, etc.). This circumstance is interestingly revealed in the works of V.V. Rubtsov [23], V.I. Slobodchikov [27], E.E. Shuleshko [29]. It is in these works that the formation of ability acts as a process of entering the child-adult educational community of skillful (read, write, solve problems), since the exercise and realization of the ability is supported in various forms of the community of the teacher and students, realizing and mastering this ability (V.V. Rubtsov [23; 24], Yu.V. Gromyko, V.V. Rubtsov, A.A. Margolis [11], Yu.V. Gromyko, V.V. Rubtsov [13], O.I. Glazunova, Yu.V. Gromyko [9]).

Personal guidance of ability is based on special activity techniques. Such techniques are associated with methods of self-organization, with control over one's own states and its implementation, with the allocation of significant elements of action in the form of operations, with an acceleration or delay in the rate of implementation of an action, and the ability itself is neither a technique, nor a way of action, nor an operation, nor a means of organizing an action. Ability is a special mode of conscious regulation of action, when the state of consciousness, orientation in the situation and the object-operational part of the action are integrated into a system that save the opportunity to build and guide one's own action in the conditions of a community being organized and interactions with others. In this case, the internal states of consciousness unfolds in external action, and the action itself is characterized through the way of perceiving the situation and the object of the action being mastered.

Such a fusion and unity of the state of consciousness and the operational component of the action brings us back to the understanding of abilities as spiritual forces and spiritual power of a person (mental powers). These mental powers are manifested in the energy of consciousness: in the sense-baring energy of sustained interest, in maintaining attention, that is, in the intentionality of consciousness, in the intensity of experience. These energetic characteristics determine the characteristics of both the orientational and the executive parts of the action. The way a person, mastering and realizing the ability, sees and understands the situation of action, belongs to the very structure and implementation of the ability. Therefore, there are no processes of perception and attention in themselves, which Wundt psychology proposed to study. The perception of the situation and the intentionality of consciousness are included in the general structure of any practical ability (skill), the principal centers of which are the state of consciousness and the operationalization of action. Operationalization of action is a form of realization of the ability, manifested outside, and the state of consciousness is its inner core.

The connection between the orientational component of the state of consciousness and the operational structure, which ensures the implementation of the ability's work, is manifested in the fact that the state of consciousness observes and orientates the implementation of the ability in specific circumstances, in a specific situation. To a certain extent, it resembles the phenomenon "the mind of a bishop" described by the famous religious scholar and philosopher S.S. Khoruzhy — a concept introduced "in the mature late-Byzantine hesychasm" [28]. This concept, as it may seem strange at first glance, is very close to L.S. Vygotsky's understanding of higher abilities. Speaking about the development of higher mental functions, Vygotsky built a hierarchy of steps of behavior, and in this hierarchy he singled out the formation of self-governing abilities as a particularly important point. L.S. Vygotsky: "...a person himself creates connections and paths for his response. He rebuilds the natural structure. He subordinates to his power with the help of a sign the processes of his own behavior. We find it surprising that traditional psychology did not notice this phenomenon at all, which we can call mastering our own reactions, mastering our own actions" [6, p. 118].

Here it is important to pay attention to the state of the observing consciousness, as the most important component of the core of the ability, in addition to the signs that organize the action, as its kind of auxiliary scaffolding and tools. The emphasis on signs and tools does not allow one to notice this most important element of the observing episcopal consciousness (in ancient Greek, bishop means observer), to which both attention (intentionality) and perception and the tension associated with overcoming what has been achieved are subordinated.

It is this observing energetic state of consciousness that holds the entire structure of operations of the executive part of the action in the form of a kind of single-point convolution and determines the boundaries of the sequential implementation of the intended operations. Is it not in this energetic state of consciousness that internal codes of action (the subject of V.P. Zinchenko's reflection [25]) are contained, which are as internal as they are external? Such a possibility of the observing state of consciousness to keep the realization of the ability in the form of a simultaneously realized structure (emergent (self-arising) act) and at the same time the planned sequence of operations performed allows you to delay, slow down the realization of the ability. Thanks to this, the ability has the quality of resisting any automatism, any unconscious realization.

According to the outstanding modern Italian philosopher Giorgio Agamben, such an opportunity to delay the implementation of a seemingly mastered and already automatically realized action, to de-automate the action in order to rebuild each time, is the basis of creative acts. In his opinion, "Someone who possesses the ability — or has the appropriate skill — may or may not use it. Ability — and this is a genius, despite its complete obviousness, Aristotle's thesis — in fact, is determined by the possibility of its unfulfillment. An architect is capable to the extent that he can build nothing. ... Based on the fact that ability is a temporarily unrealized action, Aristotle

draws a conclusion about the fundamental mutual involvement of ability and inability.... Adynamia, inability, does not mean here the absence of any ability, but rather the ability-not (to go over to action), dynamis me energein. The ability released by the act of creation must be an internal ability inherent in the act itself, just as the act of resistance must be inherent in it. ...A living and existing one in the image of ability is capable of his own inability, and only in this, he has his ability. He can exist and act, because he maintains his attitude to his own non-being and non-doing" [32, p. 35—36].

Crucially, expanding his vision of the problem of ability and inability, Giorgio Agamben connects the mechanism for the realization of the ability with the act of creation, with the inner possibility of the act itself, which is a quantum of non-automated processes of human consciousness.

This defining characteristic of the quantum nature of consciousness and theoretical thinking is deeply comprehended and described by V.V. Davydov using the example of the analysis of a thought act, which is a cell of the ability of thinking in the theory of thought processes [14]. Our analysis of this fundamental theoretical statement shows that V.V. Davydov, describing the structure of the thought act, determined the sociogenetic basis of thought, including:

1. A holistic prototypical structure of any act of thought, presumably reproduced in all types of thinking (learning, play, research, project, management) in specific forms;

2. A concept in the form of an act of thinking, revealing the process of the origin of subject knowledge;

3. Core learning actions (specific actions, modeling actions, model transformation actions), based on which the most important components of the thought act in the joint activities of students and the teacher are imitated

4. Reflective consciousness, capable of highlighting and fixing the object of thought (content of thinking) and the form of thinking [10; 12].

4. Development of the ability to understand in schoolchildren as the most important educational result of general secondary education

The concept of the structure of the ability as a mode of action was implemented by us in specific monitoring studies of the development of a number of basic abilities of students. In this case, the subject of study was the ability to understand.

As it is known, the development of students' ability of understanding and mutual understanding is one of the most important educational results. It is understanding that creates the sense-baring sphere in which the acts of thinking are carried out. Understanding determines the perspectives and material basis for acts of thinking in the form of emerging semantic structures. At the same time, according to a number of studies, in the conditions of modern mass school, the ability of understanding develops in students below the capabilities that modern children have. This is due to the fact that schoolchildren read little, they are not taught enough to understand texts and express their own thoughts in texts. [O. Glazunova, 7].

The basis of our research was a series of specially developed diagnostic techniques that allow us to assess the level of development of children's understanding ability at different stages of schooling. The diagnostic series was aimed at assessing the ability to understand at different age stages of schooling: over-fives (6—7 years old), students: 1st grade (7—8 years old), 4th grade (10—11 years old), 5th grade (11—12 years old), 9th grade (15—16 years old) and 11th grade (17—18 years old). The study was carried out in 2007—2013, it was attended by schoolchildren of about 40 schools, mainly from Moscow. In total, about 10,000 children took part in the monitoring survey.

We proceeded from the fact that the result of understanding is the appearance of the meaning (semantic version) of the text.

At each age stage, the presence and level of formation of methods and techniques of understanding was checked:

— building a general meaningful version of understanding;

— understanding stemming from the logical basis of the text;

— understanding through considering the symbolic basis of the text;

— understanding of the author's position (reflective understanding);

— deepening the own meaningful version by understanding the versions of others in collective communication;

finding a way out of a situation of misunderstanding.

This set of understanding techniques is somehow mastered by students of Russian schools through work on the entire set of academic subjects. Depending on the nature of the text and the situation, one or another understanding technique may be used.

Based on a certain composition of levels of formation of methods and techniques of understanding the text, for each technique, a scale for assessing the level of development of the corresponding aspect of the ability to understand was developed. For example, when assessing the general meaningful version of understanding, the following scale was used:

0 points — no answer; retelling the text instead of fixing its meaning; fixing an arbitrary meaning that cannot be attributed to the read text in any way.

1 point — fragmentary version of understanding — the meaning of the text refers to its small peripheral, arbitrarily chosen fragment, while the student believes that this is the meaning of the entire text as a whole.

2 points — incomplete version of understanding — the meaningful version grasps the text as a whole, but it can be shown that there are fragments of the text that, from the point of view of this version, are not needed or fall out from it.

3 points — full meaningful version — the version of understanding corresponds to the text as a whole and it is

impossible to show a single fragment of the text that would not fit into the proposed version of text interpretation.

The materials of understanding included in the diagnostic series were texts selected by expert teachers. The complexity of the text corresponded to the developmental age of the students. To diagnose each of the specific understanding techniques, a specific text and corresponding questions were offered.

Here is an example of assessing the level of the meaningful version of text comprehension when working with students. So, when working with pupils of the 6th grade (12 years old), they read the story of V. Dragunsky Big Movement on Sadovaya. Before reading the text individually, the children were asked the following question: "What is the meaning of this story? What did the author want to convey?". The answers were given individually.

Two children said that the meaning of this text is how good it is to do something together — to fix a bicycle and then ride it. This is a fragmentary version with a score of 1. The overwhelming majority of children expressed two types of meaningful versions. The first type was clearly articulated by one of the girls: "You shouldn't entrust your valuables to the care of strangers." This is an incomplete version, with a score of 2. It comprehends the entire text, but fragments remain in it that do not fit into it. Another type of meaningful version was expressed by another group of children: "It is not good to offend little ones, to deceive them and take things away from them." It is also an incomplete version, with a score of 2, although it is deeper than the previous version of understanding for this text. We have never met the full version, estimated at 3 points, which would take into account the ending of the story and the question addressed to the reader about what is most terrible here, as well as the understanding that this is a child's loss of trust in adults as a result of deceptions.

Based on the data of the research that we conducted over 6 years (2007—2013), we can state the following:

1. The development of the ability to understand in children did not acquire the character of a gradual evolutionary increase. The corresponding position is reflected in Fig. 2.

The decrease in the level of development of the ability to understand in this diagram does not mean that the texts that the child understood in preschool age, he understands in the future worse and worse and completely ceases to understand by the 9th grade. This is due to the fact that the level of complexity of the texts in our methods increases, corresponds to the age capabilities of students, while the principles of assessing the results of understanding remained unchanged. The data presented in the graph indicate the fact that with an increase in the complexity of texts corresponding to the age (according to experts), the level of understanding of texts relatively decreases.

In general, the overall picture of the continuity of the development of children's abilities in school conditions was that, in fact, in every school there were "zones" where an increase in the level of development of the ability to understand took place, however, in no school did such a zone extend to the entire period of schooling.

At the same time, it is obvious that the achieved level of development of the ability to understand is much lower than the age capabilities of students. At the same time, the additional potential for the development of this ability is manifested when using activity educational technologies, which requires special discussion. Without the use of such technologies, students master mainly stereotyped schemes for interpreting the texts of fiction, which do not provide an understanding of their meaning. According to our data, among the ways we have identified the text at a lower level, children develop a technique for finding a way out of a situation of misunderstanding, associated with the ability to ask a question to an adult, a peer or oneself. For the rest of the techniques, the situation is also unstable.

Analysis of the formation of individual techniques of understanding during the period of study at school shows that, like the integral level of understanding, it does not have a gradual successive form of development. In addition, the formation of individual techniques is not coordinated with each other and occurs as if out of order. This happens because there is no directed and methodically structured teacher's work on the formation of the ability to understand. This ability and its individual

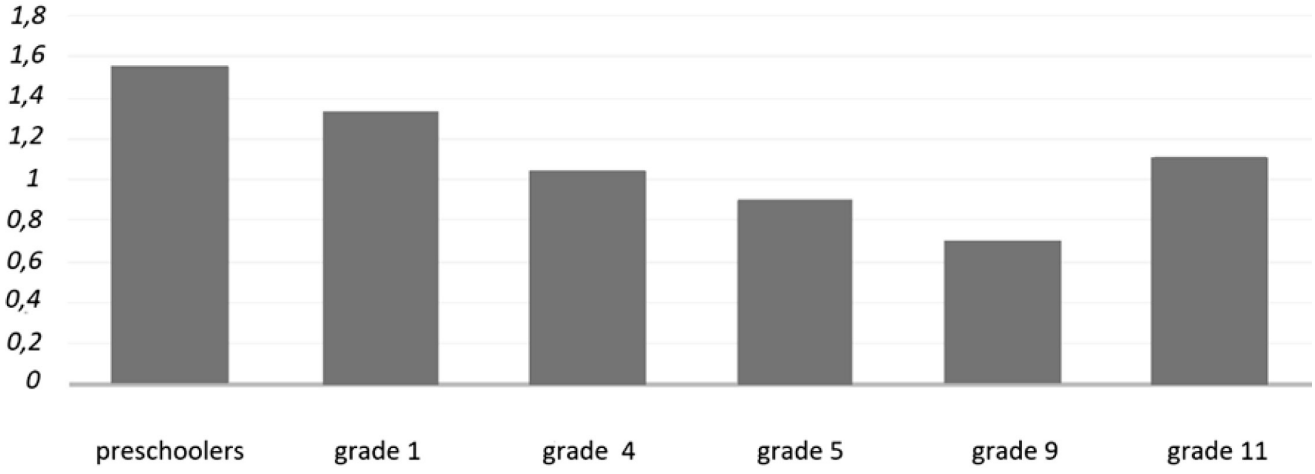

Fig. 2. The dynamics of the development of the ability to understand at different age levels of schooling

techniques develop naturally in the process of subject learning and school life of the child.

This is what a more detailed analysis of the data from the study shows in terms of zones of increase and decrease in the level of development of the ability to understand.

Analysis of these data made it possible to determine some patterns in the development of various aspects of the ability to understand. Thus, a consistent increase in the level of development of understanding with aging occurs in children only in one aspect of this ability — the understanding of the author's position. The dynamics of the development of understanding of the symbolic basis of the text, as well as the logical basis of the text are presented in approximately the same way. Starting from the 1st grade, there was a rather sharp drop in the level of development of these methods of understanding up to the 9th grade, and then by the 11th grade, the level of development of these methods increased. Moreover, for the way of understanding the logical basis of the text, this increase reached the level of grade 5, and for the way of understanding the symbolic basis of the text, the level turned out to be higher than all previous stages of learning, except for grade 1. The dynamics of the development of the level of the general meaningful version was reflected in a sharp drop between the preschool level of education and the level of grade 1 in elementary school. This aspect of the ability to understand remained unchanged, then increased in the 5th grade, fell in the 9th and again increased in the 11th, slightly exceeding the initial level of preschoolers. Finally, the way out of the situation of misunderstanding has invariably remained at the same low level, and in elementary school this level is slightly lower among children than among high school students.

It is obvious that the use of pedagogical technologies by the teacher for the development of the ability to understand allows him to increase his level. Without the use of such technologies, students mainly master the stereotyped schemes for interpreting the texts of fiction, the reliance on which does not provide the proper level of understanding of their meaning.

5. Conclusion

The performed theoretical analysis and experimental monitoring research allow us to draw the following conclusions:

1. Ability is determined by the individual acquisition of a joint way of action when solving an educational problem. At the same time, the structure and regulation of the ability is not identical with the revealed and reconstructed mode of action, on which it relies.

2. Abilities are a dynamic integrity of the observing energy-sense bearing mobile state of consciousness and the mastering way of action.

3. It is the abilities under formation that are being mastered by the student in the educational process (reflexive thinking, understanding, mutual understanding, imagination, goal-setting, modeling, schematization, the formation of the concept of project action, the advancement of a research hypothesis) represent one of the leading mechanisms, the protagonists of the development of human subjectivity

4. In this article, we describe the monitoring diagnostics of the ability to understand in different age groups of schoolchildren. Diagnostics of the ability to understand was considered on the basis of students mastering the following methods and techniques of understanding:

— building a general meaningful version of understanding;

— understanding stemming from the logical basis of the text;

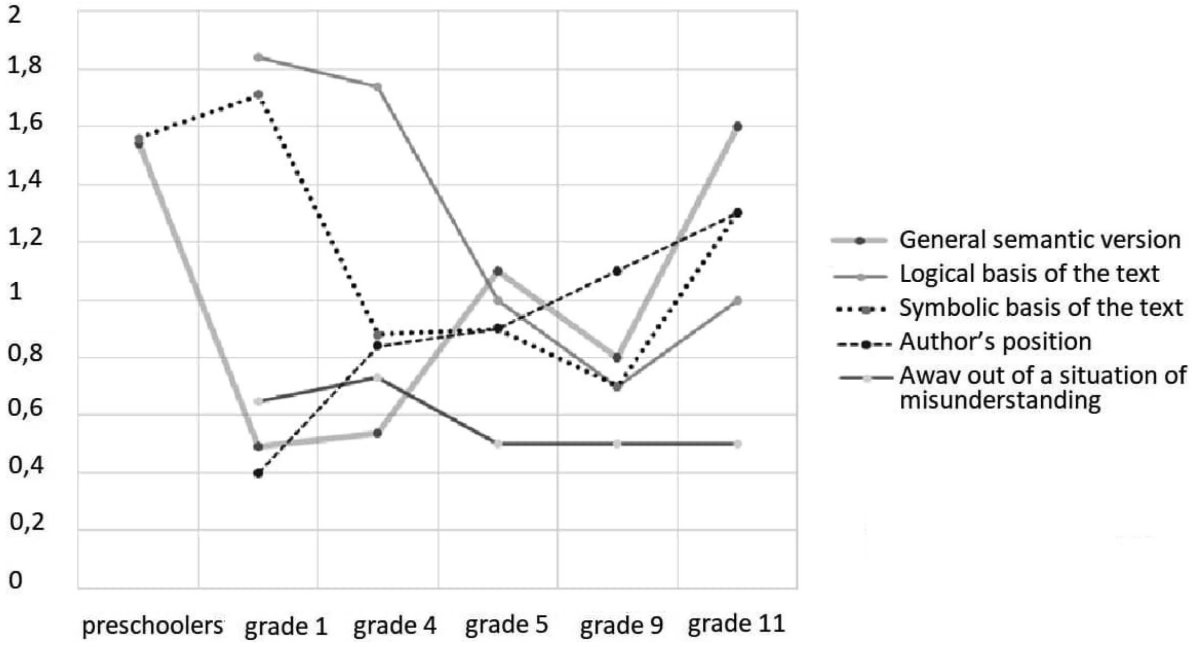

Fig. 3. The dynamics of the development of certain aspects of understanding in children at different stages of schooling (2010—2011 academic years)

— understanding through considering the symbolic basis of the text;

— understanding of the author's position (reflective understanding);

— deepening the own meaningful version by understanding the versions of others in collective communication;

— finding a way out of a situation of misunderstanding.

Monitoring diagnostics of the level of development of the ability to understand in different age groups of schoolchildren makes it possible to assess the developmental effect of traditional education. When a specially developed activity content of education and new methods of work of a teacher with students are not used, this developmental effect is much lower. There are reserves for increasing the level of development of understanding of students in the modern education system, but their implementation requires the introduction of methods of thought-activity pedagogy in education.

5. Complex activity diagnostics of the development of understanding, along with diagnostics of other abilities (reflection, theoretical thinking, mutual understanding, goal-setting, self-determination, etc.) makes it possible to assess the quality of national education on the basis of revealing the achieved level of development of students and, most importantly, their potential for reaching a new level of opportunities in mastering the content of developmental education and the most important types of activity (full-fledged research activity, design activity, management).

6. To conduct a sovereign educational policy, we need an original national system for assessing the development of abilities based on the Russian methodology of the cultural-historical approach and developmental education.

References

1. Akopova E.S., Glazunova O.I., Gromyko Yu.V. Diagnosticheskaya metodika otsenkisposobnostei k proektirovaniyu deyatel'nosti v gruppovoi rabote «Perimetr». ["Perimeter": Measuring the Ability to Design Activity with a Group Assessment Tool]. *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 2020. Vol. 25, no. 2, pp. 5—18. DOI:10.17759/pse.2020250201

2. Alekseev N.G. Filosofskie osnovaniya refleksivnogo podkhoda. [Philosophical foundations of the reflexive approach]. In Karpova A.V. (eds.) *Refleksivnyi podkhod k psikhologicheskomu obespecheniyu obrazovaniya = Reflexive approach to psychological support of education*. Moscow-Yaroslavl', 2004. pp. 11—17. (In Russ.).

3. Alekseev N.G. Proektirovanie uslovii razvitiya refleksivnogo myshleniya: Avtoref. diss. dokt. psikhol. Nauk [Designing the conditions for the development of reflective thinking. Dr. Sci. (Psychology) Thesis]. Moscow, 2002. 36 p. (In Russ.).

4. Bertsfai L.V. Opyt postroeniya metodiki diagnostiki uchebnoi deyatel'nosti mladshikh shkol'nikov [The experience of constructing a methodology for diagnosing the educational activity of younger schoolchildren]. *Diagnostika uchebnoi deyatel'nosti i intellektual'nogo razvitiya detei: Sb. nauch. tr = Diagnostics of educational activity and intellectual development of children: collection of scientific papers*. In El'konin D.B. (eds.). Moscow, 1981. Страницы(In Russ.).

5. Vygotskii L.S. Sobranie sochinenii: V 6-ti t. T. 2 [Collected works: In 6 vol. Vol. 2] *Problemy obshchei psikhologii* [*Problems of general psychology*]. In Davydov V.V. (ed.). Moscow: Pedagogika, 1982. 504 p. (In Russ.).

6. Vygotskii L.S. Istoriya razvitiya vysshikh psikhicheskikh funktsii [History of the development of higher mental functions]. Sobranie sochinenii: V 6-ti t. T. 3 [Collected works: In 6 vol. Vol. 3]. Moscow: Pedagogika, 1983. 368 p. (In Russ.).

7. Glazunova O.I. Metodiki diagnostiki urovnya razvitiya bazovykh sposobnostei uchashchikhsya srednei shkoly razrabotannye na osnove mysledeyatel'nostnogo podkhoda [Methods of diagnostics of the level of development of basic abilities of secondary school students developed on the basis of the myseleactivity approach]. *Odarennye deti. Diagnosticheskie metodiki. Seriya: «Instruktivno — metodicheskoe obespechenie soderzhaniya obrazovaniya v Moskve» [Gifted children. Diagnostic methods. Series: "Instructional and methodological support of the content of education in Moscow"].* In Afinogenov A.M. (eds.). Moscow: Tsentr «Shkol'naya kniga», 2010. pp. 62—80. (In Russ.).

8. Glazunova O.I. Diagnosticheskii monitoring urovnya razvitiya bazovykh sposobnostei uchashchikhsya srednei shkoly [Diagnostic monitoring of the level of development of basic abilities of secondary school students]. *NII Innovatsionnykh strategii razvitiya obshchego obrazovaniya: Vestnik 2010—2011 [Research Institute of Innovative Strategies for the development of general Education: Vestnik 2010—2011].* Moscow: Pushkinskii institut, 2010—2011. pp. 334—342. (In Russ.).

9. Glazunova O.I., Gromyko Yu.V. O dvukh podkhodakh k diagnostike vzaimodeistvii v sovmestnoi rabote: ot otsenki vzaimodeistvii v monitoringovykh issledovaniyakh PISA k deyatel'nostnomu analizu sotrudnichestva v proektnykh komandakh . [Two Approaches to Assessing Interactions in Cooperative Work: From PISA Monitoring Studies to Activity-Based Analysis of Collaboration in Project Teams]. *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 2019. Vol. 24, no. 5, pp. 58—70. DOI:10.17759/pse.2019240506. (In Russ.).

10. Gromyko Yu.V. Metod V.V. Davydova [Method of V.V. Davydov]. Moscow: Publ. Pushkinskii institut, 2003. 416 p. (In Russ.).

11. Gromyko Y.V., Rubtsov V.V., Margolis A.A. Shkola kak ekosistema razvivayushchikhsya detsko-vzroslykh soobshchestv: deyatel'nostnyi podkhod k proektirovaniyu shkoly budushchego [The School as Ecosystem of Developing Child-Adult Communities: Activity Approach to Designing the School of the Future]. *Kul'turno-istoricheskaya psikhologiya = Cultural-Historical Psychology*, 2020. Vol. 16, no. 1, pp. 57—67. DOI:10.17759/chp.2020160106

12. Gromyko Y.V. Davydov — osnovatel' dejatel'nostnoj praktiki obrazovanija [Vasiliy Davydov: The Founder of Activity Practice in Education]. *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 2020. Vol. 25, no. 5, pp. 5—18. DOI:10.17759/pse.2020250501

13. Gromyko Yu.V., Rubtsov V.V. Tsifrovaya platforma Shkoly Budushchego: Tsifro-kognitivnyi podkhod v otlichie ot tsifro-algoritmicheskogo uproshcheniya obrazovaniya [Digital platform of the School of the Future: Digital-cognitive approach in contrast to digital-algorithmic simplification of

education]. *Proektirovanie budushchego. Problemy tsifrovoi real'nosti: trudy 4-i Mezhdunarodnoi konferentsii (4—5 fevralya 2021 g., Moskva)* [*Designing the future. Problems of digital reality: proceedings of the 4th International Conference*]. Moscow:IPM im. M.V.Keldysha, 2021. pp. 238—259. DOI:10.20948/future-2021-21

14. Davydov V.V. Analiz struktury myslitel'nogo akta [Analysis of the structure of the mental act]. *Doklady Akademii pedagogicheskikh nauk RSFSR = Reports of the Academy of pedagogical Sciences of the RSFSR,* 1960, no. 2. (In Russ.).

15. Davydov V.V., Andronov V.P. Psikhologicheskie usloviya proiskhozhdeniya ideal'nykh deistvii [Psychological conditions of the origin of ideal actions] *Voprosy psikhologii = Questions of psychology*, 1979, no. 5, pp. 50—51. (In Russ.).

16. Davydov V. V. Teoriya razvivayushchego obucheniya [Theory of developmental learning]. Moscow, 1996. 544 p. (In Russ.).

17. Davydov V.V., Rubtsov V.V., Kritskii A.G. Psikhologicheskie osnovy organizatsii uchebnoi deyatel'nosti, oposredovannoi ispol'zovaniem komp'yuternykh sistem [The psychological basis for the organization of educational activities mediated by the use of computer systems]. *Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education*, 1996, no. 2, pp. 68—72. (In Russ).

18. Dubrovskii V.Ya. Strukturnaya model' deistviya. 2013 [Structural model of action. 2013] Available at: https://gtmarket.ru/library/articles/6564 (Accessed 21.07.2021). (In Russ.).

19. Ostin Dzh. L. Slovo kak deistvie [Word as action]. Novoe v zarubezhnoi lingvistike. Teoriya rechevykh aktov. Vyp. XVII. [New in foreign linguistics. Theory of speech acts]. Moscow, 1986, pp. 22—129. (In Russ).

20. Rubtsov V.V., Guzman R.Ya. Psikhologicheskaya kharakteristika sposobov organizatsii sovmestnoi deyatel'nosti uchashchikhsya v protsesse resheniya uchebnoi zadachi [Psychological characteristics of ways of organizing joint activities of students in the process of solving an educational problem]. *Voprosy psikhologii = Questions of psychology*. Sentyabr'-oktyabr', 1983, no. 5, pp. 48—58. (In Russ).

21. Rubtsov V.V., Ageev V.V., Davydov V.V. Oprobovanie kak mekhanizm postroeniya sovmestnykh deistvii [Testing as a mechanism for building joint actions]. *Psikhologicheskii zhurnal = Psychological Journal*, 1985, no. 4, pp.120—129. (In Russ).

22. Rubtsov V.V., Margolis A.A. Komp'yuter kak sredstvo modelirovaniya predmetnykh uchebnykh sred [Computer as a tool for modeling subject-based learning environments]. *Informatika i narodnoe obrazovanie = Computer science and public education,* 1987, no. 5, pp. 8—13. (In Russ.).

23. Rubtsov V.V. Sotsial'no-geneticheskaya psikhologiya razvivayushchego obrazovaniya: deyatel'nostnyi podkhod [Socio-genetic psychology of developing education: an activity approach]. Moscow: MGPPU, 2008. 416 p. (In Russ.).

24. Rubtsov V.V. Dva podkhoda k probleme razvitiya v kontekste sotsial'nykh vzaimodeistvii: L.S. Vygotskii vs Zh. Piazhe [Two approaches to the problem of development in the context of social interactions: L.S. Vygotsky vs Zh. Piaget]. *Kul'turno-istoricheskaya psikhologiya = Cultural and historical psychology*, 2020. Vol. 16, no. 3, pp. 5—14. DOI:10.17759/chp.2020160302

25. Semenov I.N. Razvitie zhiznedeyatel'nosti V.P. Zinchenko i ego psikhologii refleksiruyushchego soznaniya i tvorcheskogo akta [Development of vital activity of V.P. Zinchenko and his psychology of reflecting consciousness and creative act]. *Kul'turno-istoricheskaya psikhologiya = Cultural and historical psychology*, 2011. Vol. 7, no. 3, pp. 5—11. (In Russ.).

26. Serl' Dzh. R. Chto takoe rechevoi akt?[What is a speech act?]; Kosvennye rechevye akty [Indirect speech acts]; Klassifikatsiya rechevykh aktov [Classification of speech acts]. Novoe v zarubezhnoi lingvistike. Teoriya rechevykh aktov. [New in foreign linguistics. Theory of speech acts]. Vyp. XVII. Moscow, 1986.

27. Slobodchikov V.I. Sobytiinaya obrazovatel'naya obshchnost' — istochnik razvitiya i sub"ekt obrazovaniya [Event educational community — a source of development and a subject of education]. In Krylova N.B. (eds.) *Sobytiinost' v obrazovatel'noi i pedagogicheskoi deyatel'nosti sb. Statei* [*Eventuality in educational and pedagogical activity*]. Moscow, 2010, Vyp. 1 (43), pp. 5—13. (In Russ.).

28. Khoruzhii S.S. Vygotskii, Florenskii i isikhazm v probleme formirovaniya sovremennoi antropologicheskoi modeli [Vygotsky, Florensky and hesychasm in the problem of the formation of a modern anthropological model]. *Antropologicheskie matritsy XX veka. L.S. Vygotskii — P.A. Florenskii: nesostoyavshiisya dialog. Priglashenie k dialogu* [*Anthropological Matrices of the twentieth century. L.S. Vygotsky — P.A. Florensky: a failed dialogue. An invitation to a dialogue*]. In Oleksenko A.I. (eds.). Moscow: Progress Traditsiya, 2007, pp. 111—126. (In Russ.).

29. Shuleshko E.E. Ponimanie gramotnosti. O pedagogicheskom reshenii problem preemstvennosti v nachal'nom obrazovanii detei ot pyati do odinnadtsati let [Understanding of literacy. On the pedagogical solution of the problems of continuity in the primary education of children from five to eleven years old. *I. Kniga pervaya. Usloviya uspekha. Obshchaya organizatsiya zhizni detei i vzroslykh v detskom sadu i nachal'noi shkole vne zanyatii i na zanyatiyakh po raznym rodam deyatel'nosti* [*The first book. Conditions for success. The general organization of the life of children and adults in kindergarten and primary school outside of classes and in classes for different types of activities*]. St. Petersburg, 2011, 288 p. (In Russ.).

30. Shchedrovitskii G.P. Izbrannye trudy [Selected works]. Moscow: Publ. Shkola Kul'turnoi Politiki, 1995, 759 p. (In Russ.).

31. Shchedrovitskii G.P. Skhema mysledeyatel'nosti sistemno-strukturnoe stroenie, smysl i soderzhanie [the Scheme of the cognitive system-structural structure, meaning and content]. *Sistemnye issledovaniya. Metodol. probl.: Ezhegodnik,1986 = System research. Methodol. prob.: Yearbook*, 1986. Moscow, 1987, pp. 124—146. (In Russ.)

32. Agamben G. Creazione e anarchia. L'opera nell'età della religionecapitalista, nov. 2017. 139 pp. DOI:10.1515/arcadia-2018-0010

33. Collaborative Problem Solving: Considerations for the National Assessment of Educational Progress.Authored by: Stephen M.Fiore, Art Graesser, Samuel Greiff, Patrick Griffin, Brian Gong, Patrick Kyllonen, Christine Massey, Harry O'Neil, Jim Pellegrino, Robert Rothman, Helen Soulé, Alina von Davier.April 2017 Available at: https://nces.ed.gov/ nationsreportcard/pdf/researchcenter/collaborative_problem_solving.pdf (Accessed 19.08.2019). (In Russ.).

34. PISA 2015 collaborative problem-solving framework july 2017 Available at: https://oecd.org/pisa/pisaproducts/Draft%20PISA%202015%20Collaborative%20PRoblem%20Solving%20 Framework%20.pdf (Accessed 19.08.2019). (In Russ.).

Освоение способов действия как интегральный показатель развития интеллектуальных способностей в обучении: к проблеме построения деятельностной диагностики способностей

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В статье представлены результаты теоретического анализа в традиции деятельностного подхода и экспериментального мониторингового исследования развиваемых в образовании способностей. Теоретические выводы авторов состоят в том, что способность определяется индивидуальным присвоением культурного способа действия в совместной деятельности при решении учебной задачи. Сама же способность не тождественна выявляемому и реконструируемому способу действия, на который она опирается. Осваиваемые и формируемые в системе образования способности являются одним из ведущих механизмов, «протагонистами» развития человеческой субъективности. В статье представлены результаты проведенной мониторинговой диагностики способности понимания у школьников разных возрастных группах. Диагностика способности понимания рассматривается на основе освоения учащимися шести различных способов и техник понимания. Авторы утверждают, что комплексная деятельностная диагностика развития понимания наряду с диагностикой других способностей (рефлексии, теоретического мышления, взаимопонимания, целеполагания, самоопределения и др.) позволяет оценивать качество национального образования.

Ключевые слова: способность, деятельностный подход, способ действия, мыслительный акт, совместная деятельность, мыследеятельность, понимание, мониторинговая диагностика.

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