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UDC 80

Alibekova A.O., Nurzhanova Zh.Zh. Computer abbreviations in the english language

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Abstract. *The article discusses computer terms formed by the method of abbreviation in the English language, including initial abbreviations and acronyms.*
Keywords: *computer terms, abbreviations, acronyms*

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At present, it can be said that computer terms from the lexicon of programmers and developers of computer technology are gradually becoming a commonly used vocabulary. English computer language, as one of the most dynamically developing layers of special vocabulary, requires study and systematization. "Computer terminology functioning in English is very diverse in both its structure and semantics and is represented by word-terms, terminology phrases and phraseologisms" [2, p. 277].

One of the most productive ways to replenish the vocabulary of the terminology of many languages, including English, was abbreviation. According to S.A. Volodkova, "the widespread use of various abbreviations is a kind of response to the intensively developing formation of multicomponent terminology combinations in all special languages" [4, c.7].

According to D. Crystal, such a method of word formation as abbreviation became popular by 1839, when reductions such as OK (‘all correct’), PDQ (‘pretty damn quick’), GT (‘gone to Texas’) and many others [7, c. 120]. Obviously, in these examples, not words are abbreviated, but whole phrases. D. Crystal also notes that abbreviation is always in vogue, but in the 20th century the appearance of abbreviations in science, technology and other special fields was unexpected. He writes: : «The fashionable use of abbreviation – a kind of society slang– comes and goes in waves, though it is never totally absent. In the present century, however,

it has been eclipsed by the emergence of abbreviations in science, technology, and other special fields» [7, c. 120].

The main reason for the intensification of the process of the appearance of reduced lexical units is the tendency to save language funds both in writing and orally. "But this is far from the only moment. The reasons for the occurrence of abbreviations are also the following: the need for new words, saving effort, the need for a detailed and accurate description of reality in language, negligence in speech, an increase in the emotional component "[3, p. 46].

D. Crystal rightly notes that using the abbreviation is to be "your own" in the social group where this abbreviation is used. Computer enthusiasts around the world use the abbreviations ROM and RAM, DOS and WYSIWYG in their speech. You are not an amateur if you cannot use such forms or you need to search, what they mean. So, D. Crystal writes: «Abbreviations also help to convey a sense of social identity: to use an abbreviated form is to be 'in the know' –part of the social group to which the abbreviation belongs. Computers buffs the world over will be recognized by their fluent talk of ROM and RAM, of DOS and WYSIWYG. You are no buff if you are unable to use such forms, or need to look them up (respectively, 'read-only memory', 'random-access memory','disk operating system', and 'what you see is what you get'). It would only irritate computer-literate colleagues and waste time or space (and thus money) if a computer- literate person pedantically expanded every abbreviated form» [7, c. 120].

E.M. Dubenets notes that in modern English a significant number of initial abbreviations from phrases are formed. "Most often, technical terms, as well as the names of public groups and organizations, are abbreviated. Usually abbreviations are used more often than full forms of names " [5, p. 145]. For example:

DOS (Disk Operating System) – ДОС (disk operating system);

GIF (Graphics Interchange Format) – graphic exchange format - image compression format. One of the commonly used graphics formats on the Internet.

Many linguists emphasize the fact that abbreviations present certain difficulties in translation. First of all, it is necessary to remember the ambiguity of abbreviations. G.G. Babalova writes about this: "PC has a well-known English equivalent *Personal Computer.* However, it has other equivalents: *potential controller; printed circuit; process control; programmable control; propulsive coefficient;* And this is far from a complete list of homonyms. Only deep knowledge of the subject can help to correctly understand the term" [1, p. 21].

There are also a number of other factors to consider. "To ensure the correct perception of unfamiliar abbreviations, an effective method of decoding them is

needed, and in this regard, a clear understanding of such a complex linguistic phenomenon as abbreviation, its role and place in the language, as well as knowledge of the methods of formation of abbreviations and the structure of abbreviated units formed as a result of abbreviation of the original names" [4, p. 7

E. M. Dubenets emphasizes the fact that most neologisms-abbreviations are initial abbreviations and pose difficulties for translators. In some cases, translation of the original abbreviation is not possible without special reference literature, so there is a need to compile abbreviation dictionaries in various fields [5, c. 139].

For example, in the preface to 'The English Computer Terminology Glossary', author O.A. Rumyantseva says that definitions in Russian are offered in a simple and accessible form, so they are understandable not only to specialists working in the field of information technology, but also to a wide range of PC users. [Rumyantseva, p. 3].

It should be noted that it is the original abbreviations that make up the largest group among computer abbreviations. For example:

ADPCM (Adaptive Differential Pulse Code Modulation) - outdated with the advent of MP3 algorithm for compressing audio information;

CGI (Common Gateway Interface)- common gateway interface - a protocol that defines the rules for interaction of external programs with the web server or other information servers;

FTP (File Transfer Protocol) -file transfer protocol;

URL (Uniform Resource Locator) – unified resource locator, web address. Standard way of addressing web documents (pages) on the Internet;

HTML (Hyper Text Markup Language) – hypertext markup language when writing web pages;

HTTP (Hyper Text Transfer Protocol) –hypertext data transfer protocol. It is mainly used for the exchange of data between users and resources of the Internet - it is a means of communication of distributed components of the World Wide Web;

DLL (Dynamic Link Library)- "dynamically connected library." A special kind of software modules that can be used (including jointly) with a large number of programs;

MPEG (Motion Picture Experts Group) – a group of audio and video compression standards, which in some cases can reduce their volume by tens of times. Used in VideoCD and DVD.

Among computer abbreviations, a small group of acronyms can be distinguished. Acronyms mean abbreviated words or phrases that are

pronounced as independent words and have homonyms in the form of words in a given language. The main task in compiling them is the readable alternation of vowels and consonants, since the acronym must not only preserve its original meaning, but also be easily pronounced. For example:

BASIC (Beginner's All-purpose Symbolic Instruction Code) – Basic One of the first and most popular programming languages so far;

ROM (Read–Only Memory) –permanent memory;

SMART (Self-Monitoring Analysis and Reporting Technology) – System of operational self-diagnostics built into hard drives of the latest models;

SOHO (Small Office Home Office) -"home office";

WOMBAT (Waste Of Money, Brain AndTime) – Wasting money, thoughts and time.

Thus, computer abbreviations are very diverse. The largest group consists of initial reductions. Acronyms represent a minor subgroup. Special dictionaries are often required to translate computer term abbreviations. English computer terminology, as one of the most dynamically developing layers of special vocabulary, and productive methods for the formation of terms, including abbreviation, require study and systematization.

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UDC 80

Alimkhanova A.B., Bauyrzhan M., Bissen G. Computer slang

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Abstract. *This article deals with the questions concerning computer slang. The distinction between computer slang and computer jargon is explained.*
Keywords: *computer slang, computer jargon, professional language, user, Internet*

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Computer and Internet technologies have become an integral part of people's lives since the end of the twentieth century. The rapid development of computer science was certainly reflected in the language, and mainly in its vocabulary. The terms used in the narrow circle of computer specialists are now relevant for a wide range of people who are users of computers and the Internet. Such a language that has gone beyond the terminological system is most often referred to as computer slang. For Russian users, the main source of this slang is English Internet slang, which is a reflection of the processes of globalization and internationalization of science taking place in the world.

Indeed, words related to rapidly developing technologies and new developments in America, falling into Russia, mainly do not have corresponding equivalents in the Russian language, which leads to the borrowing of English terms. For example: *апгрейд-* from English up - increase, grade - quality) - increase system performance by replacing modules or adding additional elements; «аська» — the name of the ISQ program, derived from the English "I seek you" -«Я ищу тебя»; *пасворд (password)* — password required to access network services, etc.

Computer slang researchers highlight the main methods of its formation, emphasizing that they all come down to adapting the English word to our reality and making it suitable for a permanent user. An example is the classification of P. A. Gorshkov, who calls such methods as:

- tracing paper - full borrowing of a word with its meaning,

pronunciation, spelling (*device — девайс, hard drive — хард драйв*);

- half-tracing paper - adaptation of the English term to the norms of the Russian language at the level of not only phonetics, but also writing and grammar (*application — аппликуха* (прикладная программа); *disk drive — дискетник*; *User's Manual — мануалка*);
- translation using standard vocabulary in special meaning(*windows — форточки, disk — блин, to delete — сносить*);
- translation using slang from other professional groups (*incorrect programm — глюкало*);
- phonetic mimicry - the use of semantically dissimilar commonly used words as equivalents of English computer terms (*button — батон, shareware — шаровары*).

There are phraseological revolutions in computer slang, both verb and substantive: *жать батоны* (работать мышью), *глюк полиро- вать* (отлаживать программу).

Nevertheless, in some studies on computer slang and its methods of formation, the terms "computer slang" and "computer jargon" are used as synonyms. We do not adhere to this point of view, since in the scientific world when defining the concept of "slang" there is not yet a consensus, the term "jargon" has a fairly clear interpretation: a social dialect that differs from a national language in a specific lexical composition, phraseology, the essential feature of which is that it is used by certain social, professional or other groups united by common interests (for example, military jargon, criminal, naval, etc.).

In our opinion, the two main criteria make it possible not only to wear lexical units to slang, but also to delimit them from other layers of non-standard vocabulary: 1) who uses special non-standard vocabulary and 2) for what purpose. We formulate the definition of slang as follows: slang - an expressive, emotional-evaluation vocabulary of the colloquial style, including new words or old ones with a new meaning, which came from different sources (professional, corporate or other social groups) and have become well-known and commonly used (general slang) or have a pronounced relationship with certain social groups (professional, corporate, etc.), but used by speakers, including not representatives of these groups, outside them (special slang). All slang vocabulary (general and special slang) is purposeful, that is, used for some purpose: demonstrate their knowledge of life and superiority, sense of humor, express thoughts in a fresh and original way, to make speech more piquant and figurative, to create a non-coercive-

familial environment between speakers, give an assessment to people, objects and events - from uplifting to derogatory, etc. In other words, slang appears in speech in the form of emotional evaluation, expressive vocabulary or phraseologisms and only in the mouth of those, who has a specific communicative purpose and is not related to the sources from which these lexical units originated.

It follows from the above definition that computer slang appears in the speech of people who are not directly related to the computer sphere of activity, that is, it is the language of ordinary computer and Internet users, which they use because it has become common knowledge, or for some communicative purpose. Specialists in this area - computer scientists, system administrators, hackers, gamers, etc. - speak professional jargon, which they themselves created and which allows them to ward off the world around them. In this regard, it should be especially noted the computer jargon of hackers who use their professional language mainly not as a means of communication, but as a kind of code, a cipher by which professionals can recognize each other and prevent "strangers" in their environment, since hackers consider themselves a kind of bohemian, cream of the computer community, and only dedicated can communicate with them on equal terms.

Thus, we agree with those researchers who consider the professional language of the computer world and the Internet and the ways in which it is formed as jargon. And in order for computer slang to be implemented in user speech, it must go the following way: the special term - jargonism - slang.

Currently, not much work has been published on computer slang and the ways in which it is formed. This is due to contradictions in relation to the subprime layers of the language - jargon, vulgarism, argo, and primarily slang, as well as the prevailing opinion that such a phenomenon as computer slang is not worthy of the attention of scientists. Nevertheless, the rapid development of computer technology and the Internet continues, which has already significantly enriched the language with new concepts and related terms and opens up a vast field of research for linguists.

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SECTION 2. PSYCHOLOGY AND EDUCATION

UDC 740

Zak A. Features of achievement by teenagers metasubject results

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Abstract. *The article describes the content of the study aimed at studying the features of the formation of meta-subject results in children studying in grades 5-7. Based on the provisions developed by the outstanding domestic psychologist V.V. Davydov, on the formal and content levels of the noted results, the age dynamics of their achievement by younger adolescents was traced. The metasubject results associated with the achievement of meaningful levels of actions related to the construction of reasoning, the development of effective ways to solve search problems, the implementation of cognitive reflection, and the planning of ways to achieve the goal were characterized.*

Keywords*: metasubject results, younger teenagers, logical problems.*

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1.Introduction.

The general meaning of this study was to develop such an important direction in solving the fundamental psychological and pedagogical problem "Education and Development" as establishing the characteristics of the formation of meta-subject cognitive competencies in schoolchildren during the period of study in the fifth, sixth and seventh grades of basic school.

The relevance of this study is related to the need to reveal the nature of the formation of cognitive meta-subject competencies in schoolchildren of the fifth, sixth and seventh grades.

According to the provisions of the new Federal State Educational Standard for Secondary Schools [8], the mastering of program content by children in the fifth-seventh grades of secondary school should lead not only to the assimilation of knowledge, skills and abilities in specific school subjects studied in the middle grades of the school, but also to the development by students of meta-subject cognitive competencies associated with children's mastering the skills of producing inferences of varying complexity; with mastering the ability to choose and implement successful approaches in the development of methods for solving search problems on educational and non-educational material; with schoolchildren mastering the skills of planning ways to solve problems; with the development of cognitive reflection and skills to control their actions in order to correct them.

In understanding the effectiveness of methods for solving search problems, in interpreting the actions of cognitive reflection, in understanding the characteristics of the formation of skills in planning methods for solving problems, and in assessing the skills of constructing inferences of varying complexity, we relied on the provisions on two types of cognition developed in dialectical logic [4] and implemented, in the studies of V.V. Davydov [2],[3] and in the works of his collaborators (see, for example, [1], [5], [7]).

According to these provisions, a person who cognizes the surrounding reality can be aimed both at reflecting the internal connections and relations of objects and phenomena, thereby realizing theoretical, meaningful, reasonable knowledge, and at reflecting their external connections and relations, thus realizing way, empirical, formal, rational knowledge.

The first case is characterized by the effectiveness of cognitive activity, because its result is associated with the identification of the causes underlying the changes in the object being cognized, which is the basis for the development of the corresponding pattern. The second case is characterized by insufficient efficiency of cognitive activity, because its result is associated only with the description and classification of externally presented characteristics of objects of knowledge. In this case, it is impossible to reveal the reasons for the change in the object being known and to reliably characterize the patterns of its existence in the past, present and future.

Based on the above provisions on the content and methods of different types of cognition, an understanding of the features of the types of cognitive meta-subject competencies was developed [5], [6]. In accordance with this understanding, the development of methods for solving problems in one case is associated with the allocation of significant data relationships contained in their conditions, in the other case, the disclosure of significant data relationships that are objectively contained in the conditions of the problems being solved does not occur. The development of a solution method, associated with the allocation of significant relations, is implemented as a meaningful action, the result of which is a general method of solving problems, and the development of a solution method, not associated with the allocation of essential relations, is implemented as a formal action, the result of which is a particular method of solving problems.

Based on these provisions on the two types of cognitive activity, we assumed that cognitive reflection (as a metacognitive action, - [9], [10]), can be associated with a person’s appeal in one case to the foundations of these methods and with understanding the features of their development. as related to significant relationships in the conditions of the proposed tasks.

In another case, cognitive reflection may be associated with a person's appeal only to the external features of these methods without comprehending their objectively existing connections with significant relationships in the conditions of the problems being solved. In the first case, cognitive reflection is realized as a meaningful action, and in the second case, as a formal action.

When analyzing the features of planning, two approaches were considered in developing a program of action in a situation of problem solving. Within the framework of one approach, the solution of search problems includes two stages - research and execution. At the first stage, the conditions of the proposed problem are analyzed, associated with the identification of data and their relationships in the conditions and the preparation of a plan for solving the problem.

The content of planning at this stage is the determination of the sequence of all actions required for a successful solution of the problem, the development of a program for the implementation of previous and subsequent actions to solve the problem in the entire volume. It is important to emphasize that all the required actions in this case are planned before the implementation of the solution to the proposed problem.

Within the framework of another approach, the research stage associated with the analysis of the conditions of the proposed problem and the planning of its solution as a whole is absent. Drawing up a plan with this approach is carried out in parts, each of which may include one or more required actions. In this case, subsequent actions are scheduled only after the previous ones have been completed.

Planning, implemented on the basis of the first approach, is carried out as a meaningful action, since the action program for solving the problem is developed based on the analysis of the entire amount of data contained in the condition of the proposed problem. Planning, implemented on the basis of the second approach, is carried out as a formal action, since the program of actions to solve the problem is developed and implemented in parts, in separate links, without comprehending the content of previous and subsequent actions and their relationships within the entire set of actions to solve the proposed problem.

When developing criteria and indicators for the formation of skills in constructing reasoning when making inferences, the fact was taken as a basis that in one case, deriving a conclusion from the proposed judgments is based on highlighting their true relationships, and in the other case, deriving a conclusion from the proposed judgments is based on highlighting their false relationships. .

Highlighting the true relations of the proposed judgments leads to favorable conditions for demonstrating a consistently realized inference, and highlighting the false relations of judgments leads to contradictions in the execution of the inference. In the first case, the construction of the reasoning is implemented meaningfully, in the second case it is carried out formally.

The purpose of the study was to determine the characteristics of the formation of the noted cognitive meta-subject competencies of students in the fifth - seventh grades of the basic school.

The study was based on the assumption that cognitive meta-subject competencies associated with schoolchildren's mastery of the ability to build logical reasoning, inference and draw conclusions; with the development, selection and implementation of effective ways to solve problems of a search nature, educational and cognitive tasks; with the mastering by schoolchildren of the ability to independently plan ways to achieve the goal; with the development of the initial forms of cognitive reflection and the skills associated with it to control their actions, determine and correct their methods, are formed in schoolchildren during the specified period of study with different intensities: the most intensively is the ability to build logical reasoning, less intensively is the ability to implement effective methods solving problems of a search nature, even less intensively - the ability to carry out cognitive reflection and control of one's actions, least intensively - the ability to plan the achievement of a goal.

2. Materials and methods.

At the first stage of the study, we first analyzed the curricula in the fifth, sixth and seventh grades of the main school: it was noted that in the sixth grade, unlike the fifth grade, schoolchildren go on to study biology, computer science, geography and social science, in the seventh grade, unlike from the sixth grade, students move on to the study of algebra, geometry and physics.

Then, the features of the types of cognitive meta-subject competencies of primary school students were analyzed: more accurate characteristics of the manifestations of the meaningful and formal action of constructing reasoning, general and particular ways of solving problems of a search nature, holistic and partial planning, internal and external reflection were developed.

At the second stage of the study, three series of group experiments were carried out on the material of the "Inference" methodology. The first series involved 198 fifth grade students, the second series - 151 sixth grade students, and the third series - 124 seventh grade students.

The named technique included four tasks.

TASK 1

1. Two boys were wearing boots and one was wearing shoes. What was on Kolya's feet if Misha and Vasya and Vasya and Kolya had different shoes?

2. Two boys played basketball: one hit the ring six times, the other five times. How many times did Nikita hit the ring if Oleg did not hit the ring five times?

3. Katya, Sveta, Lena and Lara were dressed differently. Someone had a red hat and a blue coat, someone had a green hat and a yellow coat, someone had a green hat and a blue coat, Lara was in a raincoat. Katya and Lena had green hats, Katya and Sveta had a blue coat. Who was wearing the green hat and yellow coat?

4. Julia jumped higher than Valya. Lisa jumped below Yulia. Julia jumped below Vera. Who jumped the highest?

TASK 2

5. Three girls studied foreign languages: two - English, one - German. What language did Nadezhda learn if Tamara and Nadezhda, Tamara and Natasha learned different languages?

6. Three boys solved math examples: one for addition, one for multiplication, one for division. What examples did Misha solve if Roma and Vitya solved different examples: division and addition?

7. Three boys glued toy furniture: two - tables, one - a wardrobe. What piece of furniture was glued by Alik, if Igor and Alik, Igor and Oleg glued different things?

Task opinions

Five schoolchildren coped with these tasks and began to discuss them.

Vanya: "The fifth, sixth and seventh tasks are similar."

Vasya: "The fifth, sixth and seventh tasks are different."

Vera: "It seems to me that the fifth and sixth tasks are similar, but the seventh is not similar."

Kolya: "I'm against it, because the fifth and seventh tasks are similar, but the sixth is not."

Nastya: “Of course, the sixth and seventh tasks are similar, but the fifth is not similar to them.”

Which student said correctly?

TASK 3

8. In the word "ZONE" the letters were reversed and became "OZAN". They also changed the letters in the word "MODE". What happened?

9. In the word "GORKA" the letters were reversed and it became "OGKRA". They also changed the letters in the word in the word "BARON". What happened?

10. In the word "BOTANY" the letters were reversed and it became "OBATYN". They also changed the letters in the word in the word "CAMERA". What happened?

11. In the word "MACHINIST" the letters were reversed and it became "AMISHINTS". They also changed the letters in the word "COGITATE". What happened?

TASK 4

12. House 1 has wider windows than house 2 and a lighter roof than house 3. House 1 has narrower windows than house 3 and a darker roof than house 2. Which house has the narrowest windows Which house has the darkest roof?

13. Four friends - Oleg and Ira Rogov, Oleg and Ira Nosov - stood in a row at the morning line at school. Both Olegs stood side by side and both Nosovs stood side by side. Where was Ira Rogova (in the middle of the group or on the edge)?

14. Tourists started at 7 am: Vova from Samara to Saratov, Seva from Saratov to Tambov, Vanya from Tambov to Samara. After 8 hours, it turned out that Seva is closer to Saratov than Vova is to Samara, and Vanya is further from Tambov than Vova is from Samara. Who moved the least fast?

15. Masha solves problems better than Oleg, knows more poetry than Alla, and gets fours less often than Ira. Masha knows poetry less than Oleg, gets fours more often than Alla, and solves problems worse than Ira. Who solves problems worse than anyone, who knows poetry the least, who gets fours most often?

* * * * *

Further, the organizer of the lesson explains: “Look at the task sheet. In the first task, you need to solve four problems - the first, second, third and fourth.

In the second task, you need to solve three problems - the fifth, sixth and seventh. And after that, you need to read the opinions of the students about these three tasks and choose the name of the student whose opinion you consider the most correct.

In the third task, you need to solve four problems - the eighth, ninth, tenth and eleventh. In the fourth task, you also need to solve four problems - the twelfth, thirteenth, fourteenth and fifteenth.

Then the children are told: “For the correct solution of any problem, you must first read it silently (“to yourself”) several times so as not to disturb your

neighbors, then you need to think (also silently) and then, when the solution is clear, you need to write the answer.

Solve problems only mentally, “in the mind”, you can’t write something down or make any notes. Act carefully and independently.

In the method of "Inference" each of the four tasks has a special meaning.

The purpose of task 1 is to determine the degree of mastering by children of cognitive meta-subject competence, which reflects the logical skills of producing inferences when solving problems in the verbal plan. Children are offered four tasks made up of judgments of different types: in the first and third tasks, judgments are used that assert the presence of any property of the object, in the second task - judgments that assert the absence of any property of the object, in the fourth task - judgments indicating the presence or absence of any relationship. The correct solution of all tasks of this task indicates a meaningful construction of reasoning when making conclusions.

The purpose of task 2 is to determine the degree of mastering by children of cognitive meta-subject competence, which reflects the implementation of cognitive reflection in solving problems in a verbal-sign form.

The children had to solve three problems: two of them, problems five and seven, were built on the basis of one principle, and one problem, the sixth, was built on the basis of another principle. After solving the marked three tasks, it was required to choose one opinion about them from the five proposed.

A meaningful generalization of the method of action in solving the fifth and seventh tasks, as a manifestation of the implementation of internal reflection, is reflected in the choice of Kolya's opinion ("... the fifth and seventh tasks are similar, but the sixth is not the same ..."). Such a choice testifies to the child's knowledge of the grounds for his actions, in particular, to the fact that these two tasks are constructed in the same way and are solved on the basis of a common essential relationship for them. If the child knows only the external signs of his actions or the external features of the conditions of the tasks, then he chooses any opinion except the fourth.

The purpose of task 3 is to determine the degree of mastering by children of cognitive meta-subject competence, which reflects the possession of methods for developing methods for solving search problems in a verbal form. The children had to cope with four tasks that had a common way of solving. The correct solution of all the problems of this task testifies to the development by the students of a general method for solving all the problems on the basis of highlighting the essential relations in them with the help of a meaningful analysis of their conditions.

The purpose of task 4 is to determine the degree to which children master the cognitive meta-subject competence associated with planning the solution of tasks in the verbal plan. Planning in solving such problems presupposes a certain degree of development in schoolchildren of the ability to act in an internal, mental plan. To complete the task, the students had to cope with four tasks that are built on the basis of different principles and for which there is no single way to solve them. Solving each subsequent task, it was necessary to mentally operate with a gradually increasing number of judgments and, thereby, perform more complex reasoning than in the previous tasks of this task. The correct solution of all the tasks of this task testifies to the implementation by children in their solution of meaningful, holistic planning, when a complete program of the required actions is first developed and then they are carried out.

3. Results of the study.

As noted, 198 students of the 5th grade participated in the first series of the study, 151 students of the 6th grade participated in the second series, and 124 students of the 7th grade participated in the third series. The results of processing the obtained data are presented in the table.

Table.

Distribution of children among students of the 5th, 6th and 7th grades who carried out a meaningful construction of reasoning, a general way of solving search problems, holistic planning and internal reflection when solving the problems of the "Reasoning" method (in %).

Classes	Meaningful construction of reasoning	General method solutions problems	Holistic planning problem solution	Internal reflection way action
5 (198 st.)	39,4***	57,5***	9,1	21,2**
6 (151 st.)	55,6	64,9	14,5	34,4
7 (124 st.)	65,3***	79,0***	17.7	40,3**

Note: ** - $p < 0.01$; *** - $p < 0.001$.

The data given in the table testify to the following characteristics of the formation of cognitive meta-subject competencies during the period of schoolchildren's education in grades 5-7 of the basic school.

Firstly, in the fifth grade, the competence associated with the choice and implementation of effective methods for solving problems of a search nature, in particular with the choice of a general method, is the most formed - 57.5%, the

competence associated with the meaningful action of constructing reasoning is less formed - 39, 4%, the competence associated with the implementation of internal (substantial) reflection of the mode of action is even less formed - 21.1%, and the competence associated with the implementation in solving problems of integrated planning is the least formed - 9.1%.

Secondly, in the sixth and seventh grades, this ratio in the intensity of the formation of the four competencies under discussion is preserved: holistic planning is formed the least intensively, and the meaningful construction of reasoning is the most intensive.

At the same time, the characterization of the formation of cognitive meta-subject competencies will be incomplete if one does not reveal the features of changes in the intensity of their formation during the transition from class to class.

So, in the sixth grade, compared with the fifth grade, the competence associated with the meaningful construction of reasoning is most intensively formed - the number of children with such competence increases by 16.3%, less intensively - the competence associated with internal reflection - the number of children with such competence increases by 12.2%, even less - the competence associated with the general way of solving search problems - the number of children with such a competence increases by 9.4% and least intensively - the competence associated with holistic planning - the number of children with such a competence increases by 5.4%.

Further, in the seventh grade, compared with the sixth grade, another competence is most intensively formed: associated with the general method of solving search problems, the number of children with this competence increases by 14.1%, and the competence associated with the meaningful construction of reasoning is formed less intensively. – the number of children with such competence increases by 9.7%.

Competence associated with internal reflection is formed even less intensively - the number of children with such competence increases by 6.9%, and the least intensively (out of the four competencies studied) is competence associated with holistic planning - the number of children with such competence increases by 3 .2%.

Presumably, as an emerging trend, as we see it (since more extensive surveys with the participation of schoolchildren from different regions of Russia are required to substantiate this assumption), it can be argued that a more intensive (relative to other competencies) formation in the sixth grade of competence related to content reasoning is based on the fact that biology, computer science, geography and social science are studied in this class, a

significant part of the content of which consists in presenting theoretical material, for the assimilation of which it is necessary to make inferences and draw conclusions.

In turn, also hypothetically, it can be argued that the more intensive (relative to other competencies) formation of competencies in the seventh grade, associated with the general way of solving search problems, is based on the fact that algebra is studied in the curriculum in the seventh grade, geometry and physics. A significant part of the content of these subjects is related to the solution of the corresponding subject problems, which involves the development of a meaningful analysis of the relevant subject material, the identification of significant relationships in it and the implementation on this basis of a general method for solving problems.

In general, characterizing the features of the formation of cognitive meta-subject competencies in schoolchildren during their education in grades 5-7, it should be noted that throughout the entire period, the most intensively formed competence is associated with the meaningful construction of reasoning - the number of children with such competence increases from the fifth grade to the seventh by 26.0% (the difference between the results in the fifth and seventh grades, respectively, 39.4% and 65.3%, is statistically significant at $p < 0.001$, - hereinafter, the φ * Fisher test was used to determine the significance of differences).

The competence related to the general way of solving search problems is formed less intensively during this period - the number of children with such competence increases from the fifth grade to the seventh by 21.5% (the difference in the results in the fifth and seventh grades, respectively, is 57.5% and 79 .0% statistically significant at $p < 0.001$).

The competence associated with internal reflection is formed even less intensively during this period - the number of children with such competence increases from the fifth grade to the seventh by 19.1% (the difference in the results in the fifth and seventh grades is 21.2% and 40, respectively, 3% - statistically significant at $p < 0.01$).

The competence associated with holistic planning is formed the least intensively during this period - the number of children with such competence increases by 8.6% (the difference in results in the fifth and seventh grades, respectively, 9.1% and 17.7%, is statistically insignificant).

Thus, the conducted study confirmed the initial hypothesis that cognitive meta-subject competencies associated with schoolchildren's mastery of the ability to build logical reasoning, inference and draw conclusions; with the

development, selection and implementation of effective ways to solve problems of a search nature, educational and cognitive tasks; with the mastering by schoolchildren of the ability to independently plan ways to achieve the goal and with the development of the initial forms of cognitive reflection and the skills associated with it to exercise control over their actions by students, to determine and correct their methods, are formed in schoolchildren during the specified period of study with different intensity.

The ability to build logical reasoning is formed most intensively in the period under review, less intensively - the ability to implement effective ways to solve search problems, even less intensively - the ability to exercise cognitive reflection and control of one's actions, and least intensively - the ability to plan the achievement of a goal.

4. Conclusion.

The results of this study allow us to draw the following conclusions.

Firstly, data were obtained that testify to the peculiarities of mastering by schoolchildren in the fifth, sixth and seventh grades of cognitive meta-subject competencies associated with: schoolchildren mastering the skills of producing inferences of varying complexity; with mastering the ability to choose and implement successful approaches in the development of methods for solving search problems on educational and non-educational material; with the development of cognitive reflection and skills of control over their actions, associated with the ability to exercise control in order to correct them.

The discovered facts make it possible to more concretely present the dynamics of the development of these cognitive meta-subject competencies during the period of schoolchildren's education in the fifth-seventh grades and to characterize the following three important aspects of it.

First, the features of the formation of the studied competencies in the sixth grade in relation to the fifth grade were determined. During the noted period, the competence associated with the meaningful construction of reasoning is most intensively formed, less intensively - the competence associated with internal reflection, even less - the competence associated with the general way of solving search problems, and the least intensively - the competence associated with holistic planning.

Secondly, the features of the formation of the studied competencies in the seventh grade in relation to the sixth grade were determined. During the noted period, the competence associated with the general way of solving search problems is most intensively formed, less intensively - the competence associated with the meaningful construction of reasoning, even less intensively - the

competence associated with internal reflection, and the least intensively - the competence associated with holistic planning.

Thirdly, the features of the formation of the studied competencies in the seventh grade in relation to the fifth (i.e., throughout the entire period of study in the main school under consideration) were characterized. During the noted period, the competence associated with the meaningful construction of reasoning is most intensively formed, less intensively - the competence associated with the general way of solving search problems, even less intensively - the competence associated with internal reflection and the least intensively - the competence reflecting holistic planning.

In addition, the data obtained indicate that the cognitive meta-subject competence associated with mastering the ability to choose and implement successful approaches to the development of methods for solving search problems on educational and non-educational material is formed in a larger number of children in three grades of basic school (in the fifth, sixth and seventh), and the competence associated with children's mastering the skills of producing inferences of varying complexity was formed in a larger number of children in two grades of basic school (in the sixth and seventh). The remaining two competencies studied in the study were formed in a smaller number of children in the fifth, sixth and seventh grades.

The novelty of the results of the study lies in the fact that for the first time it has been established that during the period of study in the fifth, sixth and seventh grades of the basic school, cognitive meta-subject competencies are formed with different intensity: the most intensively formed competence is associated with the mastery of the skills of producing inferences of varying complexity by schoolchildren; less intensively - competence associated with mastering the ability to choose and implement successful approaches in developing methods for solving search problems on educational and non-educational material; even less intensively is the competence associated with the development of cognitive reflection and the skills of controlling one's actions in order to correct them, and the least intensively formed competence is associated with the mastery of the skills of planning methods for solving problems by schoolchildren.

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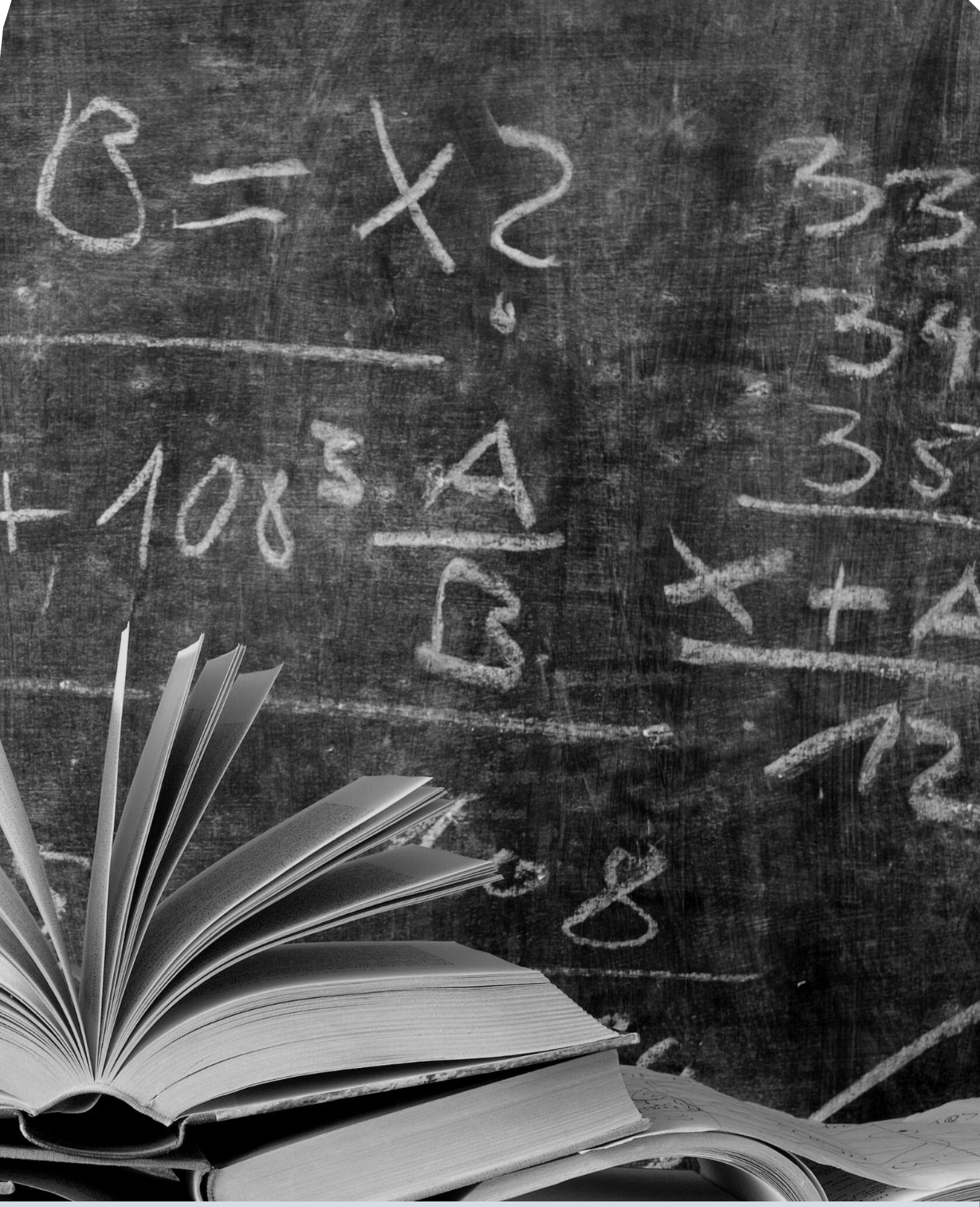

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