

PEHPP 2019**Pedagogical Education: History, Present Time, Perspectives****DIDACTIC RESONANCE IN ORGANIZING THE WORK OF
SCHOOLCHILDREN WITH EDUCATIONAL TEXT**

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Abstract

The article proposes the idea of didactic resonance in organizing the work of schoolchildren with educational text. Work with the educational text is considered as a purposefully organized resonance-selective interaction in the subject-object system “teacher - educational text - student”, in which certain characteristics of the text activate specific universal educational actions performed by the student. The authors discuss the results of the analysis of the content of 5th grade textbooks on the requirement of ensuring meta-subject matter. The analysis reveals that the meta-subject potential of educational texts is poorly realized. The paper clarifies the concept of the educational text as a structural unit of the educational content, with the ability of resonant interaction with the student, updating certain universal educational activities. The authors propose a scheme to organize the work of primary school students with the educational text realizing the idea of double didactic resonance. During the first resonance cycle the teacher selects the educational text and develops tasks for the students to achieve certain meta-subject results in the lesson. The second cycle occurs when students interact with the educational text by performing the universal educational actions planned by the teacher. To simplify the work of teachers, the authors developed a task designer for the formation of meta-subject educational results when working with educational text. The authors discuss a positive experience of the implementation of didactic resonance concept in the organization of the work of primary school students with the educational text.

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Keywords: Didactic resonance, meta-subject educational results, organization of work of schoolchildren with educational text, universal educational activities, educational text.



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1. Introduction

Working with text has always been one of the main ways to organize the learning process. The educational text is not only a source of educational information. Working with text requires updating and contributes to the development of various mental processes of a person. The skills formed when working with the educational text are fundamental in the formation of knowledge, skills, and competencies of students.

The phenomena of informatization and digitalization have changed a lot in modern society, including in the field of education. The concept of the text has acquired new forms - hypertexts, intertexts, supertexts, informational texts, electronic texts appear. Today, the notion "text" refers to any object that carries any information in the modern educational process (Sabinina, 2009). Despite the expansion of the concept of the educational text and the appearance of its various classifications, working with printed text remains the most important way to organize the educational and cognitive activity of the student - regardless of whether the text is printed on paper or displayed on the monitor screen (Aleksandrov, 2015).

Living in the age of information overload, a modern person is actually doomed to master the skills that provide him with an independent point of view on the world, the presence of his own opinion. This is the ability to highlight the main information against the background of information noise; ask a question to clarify something; identify contradictions, causes and effects, etc. All these complex skills are defined as universal, or metacognitive, methods of action, because they provide the potential success of any activity. Metacognitive skills are based on the knowledge of the cognitive process and how it is regulated (Flavell, 1979). Development of metacognitive skills is a condition for the implementation of developing learning ideas (Chernyshov & Zhuravleva, 2016) in school practice, the implementation of the idea of lifelong learning (Cirino et al., 2019), and the subject of research (Ambartsumova & Dyukova, 2017; Branigan & Donaldson, 2019; Cirino et al., 2019; Sergeeva, Sinelnikov, & Sukhodimtseva, 2017).

In modern educational practice, with the introduction of the Federal State Educational Standards, we can observe another round of turning to the problem of organizing the work of schoolchildren with the text on a new meta-subject level. Teachers have vast experience and an arsenal of methods and means for the formation and evaluation of subject educational results. The requirements of the Federal State Educational Standard indicate the personal educational results of students, but do not subject them to evaluation. However, meta-subject results are subject to evaluation, which means that they should be purposefully formed and developed among schoolchildren, focusing on clear and consistent criteria and assessment indicators (Khutorskoy, 2012). Another impetus for increasing attention to this problem were disappointing results of the international PISA study, which assesses the reading literacy of students and the ability to apply knowledge in practice. Since 2000, Russian schoolchildren have shown poor results, and only in 2015 there was a positive trend (26th place out of 70 countries) (The Main Results..., 2015).

In the current sociocultural situation, in the conditions of a new educational paradigm, when both the student and the text are undergoing changes, it is necessary to establish new effective connections between the student, teacher, and the educational text, which will help achieve the best result in meta-subject learning.

2. Problem Statement

The educational text, as a universal didactic category, is used in the learning process to achieve a variety of goals. We believe that the organization of work with the educational text will help to solve such an urgent problem today as the formation and evaluation of meta-subject educational results of students. These can be textbooks, various texts in digital format, complex works of an interdisciplinary nature (Gosteva, Demidova, Vasil'evyh, Rutkovskaya, & Kovaleva, 2014), texts of meta-subject competitions (Shkerina, Berseneva, Zhuravleva, & Cave, 2019) and others.

However, the question of how to organize work with the educational text so that we could get meta-subject results remains open. Both scholars and practitioners are in search of mechanisms and techniques for organizing work with the educational text (Usol'tsev & Antipova, 2017). We believe that the idea of didactic resonance can be productive in organizing work with the educational text to achieve meta-subject educational results.

3. Research Questions

3.1. What is meant by the educational text aimed at the formation of meta-subject educational results?

3.2. How do the texts in textbooks of Grade 5 meet the meta-subject requirement?

3.3. What is the essence of the idea of didactic resonance in organizing the work of students in a primary school with the educational text?

4. Purpose of the Study

The purpose of this article is to substantiate the idea of didactic resonance in organizing the work of schoolchildren with the educational text to form meta-subject educational results. The study of the educational text made it possible to identify its characteristics that contribute to the formation of meta-subject educational results - universal educational actions (UEA), and the implementation of the idea of didactic resonance helped us establish targeted interaction between the participants of the educational process through the educational text (teacher - text - student).

The results of this study can be further used both in school pedagogical practice and at other levels of education.

5. Research Methods

5.1. A theoretical analysis of the psychological and pedagogical literature to determine the concept of “educational text”; identifying the characteristics, both inherent in any educational text, and the specific characteristics that determine its potential in the formation of meta-subject educational results.

5.2. The analysis of the texts in the 5th grade textbooks (Russian Language, Biology, History) was carried out in order to determine their meta-subject potential, i.e. the presence or absence of meta-subject characteristics.

5.3. The method of associations and pedagogical modeling was used to comprehend the phenomenon of resonance in various scientific fields and to describe the principle of double didactic resonance when working with text. The first cycle is the teacher's adjustment, i.e. the selection of such an educational text, the internal and external characteristics of which (text and its tasks as a secondary text) have the potential to activate certain universal educational actions; the second cycle is the interaction of the characteristics of the text with the student (his cognitive, emotional and volitional spheres) having the resulting formation meta-subject educational results planned by the teacher.

5.4. The objective approach was used when creating the task designer for the formation of meta-subject educational results when working with educational text. The constructor is a matrix in which, according to the stages of work with the educational text, the corresponding tasks are proposed, oriented to the formation of certain UEA. Using such a constructor helps the teacher build the student's didactic line of work with the educational text in accordance with the meta-subject tasks of the lesson or independent work.

5.5. The pedagogical experiment made it possible to identify the effectiveness of working with the text organized on the principle of double resonance among students in Grade 5 (96 students).

6. Findings

6.1. The concept of "educational text" and its characteristics that determine its meta-subject potential

As a result of the study of the "educational text" phenomenon in the framework of various approaches (philosophical, humanitarian, structural, and activity), the following conclusions were drawn. Practically any text in the philosophical sense of this concept can be an educational one. It should be able to generate counter personal meanings among the participants in the learning process, be a product of the student's meaning-creating educational activity. An elementary example of an educational text is the text of a textbook, but the term "educational text" is not limited to this. The educational text is a means of learning, and therefore, the object of special attention of the teacher, the object of pedagogical construction, so that the meaningful activity of the student will then take place in relation to this text.

The educational text, which has a traditional set of characteristics, is a whole organism, and potentially all the groups of UEA (cognitive, regulatory, communicative) can be formed when working with it. However, when forming one or another group of meta-subject educational results, one can orient the tasks to the text and methods of working with it in such a way as to update the relevant characteristics.

16 characteristics of the educational text have been identified, which should be taken into account when organizing the work of schoolchildren, focusing on the formation of meta-subject educational results: information content; polyinformativity (factual, conceptual, subtext); semantic integrity; unity of theme; unity of basic thought; consistency; understandability; availability; articulation; connectedness; appraisal; compositionality; multifunctionality; culture orientation; intertextuality; dialogical nature.

6.2. The results of the analysis of Grade 5 textbooks to identify their meta-subject potential

For analysis, we selected the textbooks recommended by the Ministry of Education and used in schools.

- *The Russian Language Textbook* (Razumovskaja & Lekant, 2016) should be focused on teaching students how to work with study texts. Valuable in this textbook is the presence of definitions associated with the concept of "educational text": text, subject of the text, the main idea of the text, paragraph. The assimilation of these concepts is necessary for the formation of students' meta-subject results in other subjects. The textbook occasionally presents tasks related to the development of meta-subject skills in students (draw up a diagram, compare, fill out a table, draw a conclusion). Nevertheless, all these skills are developed, mainly, not in educational texts. Thus, work with the table most often involves the distribution of words in columns; charting is focused on the development of subject skills: charting words, sentences. Therefore, the textbook contains the basic textual concepts, but is not aimed at the formation of meta-subject educational results through the work of students with educational texts.
- In the *Biology Textbook* (Pasechnik, 2017): each chapter contains information about what the student learns and what he learns. "Knowledge" is associated with students achieving objective results, and "learning" is associated with meta-subject results. The textbook provides tasks aimed at the formation of meta-subject results: to identify, recognize, compare, and establish communication. From the point of view of organizing textual material, the educational text is accompanied by questions of a mainly reproductive nature. However, provided that the questions and tasks are reformulated, we can talk about the possibility of forming meta-subject educational results in schoolchildren. The textbook contains instructions important for learning: how to work with the text and how to write a paragraph outline. Nevertheless, in the tasks for the texts, these skills are not traced.
- *The History Textbook* (Vigasin, Goder, & Svencickaya, 2014) focuses on working with the word. Tasks for explaining the meaning of words (for example, cave painting, witchcraft, soul, "land of the dead", etc.) are given in 42 paragraphs out of 60, that is, 70%. Excerpts from various historical documents and questions about them are offered in the "Get to Know the Document" section. In 60 paragraphs of the textbook 74 text-documents are placed, but tasks on working with the document are offered 12 times, which is 20%. Consequently, the potential of text documents to form meta-subject educational results in students is poorly used. Meta-subject actions are presented in the history textbook in the form of preparation of a message (20%), compilation of a story (15%), description of a drawing (52%).

Conclusion: the textbooks present a system of tasks that contribute to the formation of meta-subject educational results, however, the meta-subject potential of educational texts is not used enough.

6.3. The principle of double resonance when working with educational text

The concept of resonance in pedagogy was introduced by Yu. K. Babansky, but his idea was not properly developed (Sandalova, 2010). We believe that the idea of didactic resonance is relevant for modern education, in particular, when solving the problem of forming meta-subject educational results of students.

The concept of resonance means the mutual enhancement of the functioning of interacting structures and systems, when the effectiveness of the combined activities of interacting objects and subjects is higher than the effectiveness of each of them.

Didactic resonance can be considered as a natural process in learning. In the study, the educational text is considered as a resonator, which is first tuned in a certain way by the teacher through a system of tasks, pedagogical techniques to form specific UEA, “accumulating” meta-subject potential. Then it encourages the student to intensify these specific universal learning activities. In this context, work with the educational text is considered as a purposefully organized resonant-selective interaction in the subject-object system “teacher - educational text - student”, in which certain characteristics of the text activate specific universal educational actions performed by the student.

Organization of work with the educational text for the formation of meta-subject educational results occurs on the principle of double resonance.

The first resonance cycle occurs at the stage of selection by the teacher of an educational text to achieve certain meta-subject educational results. Factors influencing at this stage: target lesson settings, teacher’s value position, teacher’s didactic competence, manifested in the ability to see the meta-subject potential of the textbook. The teacher selects the educational text and prepares assignments for it in such a way as to direct the actions of students in accordance with the objectives of the lesson, to strengthen the effect of the formation of UEA. Using the ability to visualize the meanings embedded in the educational text also strengthens its meta-subject potential (Sidelnikova, 2016). Selection of the educational text by characteristics, a variety of tasks increase the chance of further resonant interaction “educational text - student”. The methodological tool that helps the teacher at this stage is the designer of tasks for the formation of UEA when working with the educational text.

The second resonance cycle occurs when students interact with the educational text by performing the universal educational actions planned by the teacher. Carrying out textual activity and completing tasks for him, the student develops his meta-subject skills. Conditions for resonant interaction include: the evolution of pedagogical management of educational activities from co-management of a teacher and student to student self-management by the process of their work with the educational text; adoption and implementation by the student of the educational task set by the teacher (on the formation of meta-subject educational results); a variety of texts and assignments to them to increase the likelihood of resonant interaction.

The concept of the educational text as a structural unit of the educational content, with the ability of resonant interaction with the student, was updated, actualizing certain universal educational activities characteristic of meta-activity.

The experiment showed that work with the educational text, organized by the principle of didactic resonance, gives positive results in the formation of meta-subject educational results of students. In the experimental groups (EG) (65 students) compared with the control group (CG) (31 students), the percentage of tasks was higher in a number of parameters. When calculating quantitative data according to the arithmetic mean principle, the following results were obtained: 74% of students completed tasks in the formation of general educational activities in the EG, and 69% in the CG; with logical UEA: EG - 64%, CG - 61%; with regulatory UEA: EG - 57%, CG - 51%. Using the method of interviewing, it was

determined that it was easier for EG students to establish communicative connections and perform actions to pose and solve problems.

7. Conclusion

Despite the change in the current sociocultural situation, the educational text remains the most important means of organizing the educational and cognitive activities of schoolchildren. Moreover, the informational richness of the modern world, expanding the concept of text, causes an increase in the interest of scientists and practitioners of education in organizing work with educational text. The content value of the educational text itself is still important. However, the meta-cognitive potential of the educational text is becoming increasingly important.

When organizing work with the educational text to achieve meta-subject educational results, one should focus on its characteristics: traditional and meta-subject, internal (the text itself) and external (tasks to it).

The analysis of textbooks (Russian Language, History, Biology) for the 5th grade of the primary school showed that the texts and assignments to them only slightly use the meta-subject potential of the educational text. Therefore, the teacher needs to work purposefully for each lesson both with the texts of textbooks, preparing special tasks for them, and preparing other texts for the educational process. For this purpose, we have developed a task designer for the formation of universal objective actions when working with educational text.

We believe that the idea of didactic resonance can be effective in organizing the work of schoolchildren with educational text. The teacher's setup, strengthening, "pumping" of the meta-subject potential of the text (by creating a system of tasks for the formation of UEA) in accordance with the objectives of the lesson then provides the impact of the educational text on the cognitive, emotional and volitional, spiritual sphere of the student. In this context, the educational text is considered as a structural unit of educational content, with the ability of resonant interaction with the student, actualizing certain universal educational activities.

Experimental testing of the idea showed that the organization of work with the educational text based on didactic resonance makes positive changes in the formation of meta-subject educational results of schoolchildren.

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