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Research Article

INDEPENDENT EDUCATIONAL ACTIVITY AND MECHANISMS OF EFFECTIVE ORGANIZATION IN THE CONTINUOUS EDUCATION PROCESS

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ABSTRACT

Teaching independent work is one of the aspects of the scientific organization of labor, both students and teachers. Independent work should be carried out by students as a cognitive activity, become a means of educating such personal qualities as independence, activity, and form a creative attitude to perceived information. The search for new means and methods of teaching leads to the fact that in the first place in the learning process the tasks are put forward not so much as the maximum assimilation of scientific information, but rather the formation of the skills to think creatively and independently acquire new knowledge.

In the article, the authors provide an analysis of various approaches to the classification of types and forms of independent work of students, suggesting the correspondence of the type of independent work to the levels of assimilation.

KEYWORDS

Independent work of students, classification, levels of assimilation, reproducing, training, review, verification, types of independent work, preparatory, ascertaining, experimental-search, logical-search.

INTRODUCTION

The types of independent work used in the pedagogical process are extremely diverse. Most didactics and methodologists classify independent work either by the degree of independence,

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highlighting such types of independent work as imitation work, training work, exercises, creative work, etc., their nature is usually predetermined by the source of knowledge; or for didactic purposes - independent work to gain new knowledge, to repeat and test knowledge, skills and abilities.

The first direction originates in the works of V. A. Dobromyslov, V. V. Golubkov, E. Ya. various objects of knowledge and the use of various sources of knowledge. This direction received the most complete expression and logical completeness in the work of V. P. Strekozin.

However, this approach to the classification of independent works is one-sided. It proceeds mainly from the peculiarities of teaching, due to which the procedural side of the independent activity of students as such is not disclosed. V. A. Onischuk tries to make some specification of certain types of independent work proposed by V. P. Strekozin, taking into account the nature of the student's activity. Problem tasks, creative exercises, etc., appear in his classification, which indicates an attempt by V. A. Onischuk to take into account the nature of cognitive activity in the grouping of exercises he is planning.

However, without going beyond the logical-content and organizational aspects of students' independent work in training, V. A. Onischuk essentially does not provide a solution to the problem of classifying independent work. Representatives of the second direction in the classification of independent work are B.P. Esipov, R.B. Sroda, A.V. Usova, who believe that the types of independent work depend on their didactic goals, that is, they are determined by the very course of education. A common drawback of these classifications is that they do not give an idea of the nature of the cognitive activity of students when they perform tasks independently. I. I. Malkin in his works, as if synthesizing the two directions considered, believes that each type and type of independent work simultaneously determines the nature of the student's cognitive activity, and is itself determined by its structure.

Given this circumstance, he proposes the following classification:

- Independent work of the reproductive type: a) reproducing; b) training; c) review; d) verification.

- Independent work of cognitive search type: a) preparatory; b) ascertaining; c) experimental and search; d) logical search.

- Independent works of a creative type: a) artistic and figurative; b) scientific and creative; c) constructive and technical.

- Independent work of cognitive-practical type: a) educational and practical; b) social and practical. I. I. Malkin's classification is based on two starting points: a) the essential features of the thinking process are determined by the nature of the problem being solved; b) the influence of education on the mental development of students is determined by the nature of cognitive activity, during which those abilities that are necessary in this activity are intensively developed.

Consequently, the initial principle of classification is the degree of independence and creativity of students in the performance of independent work. Some researchers accept the principle of the structure of cognitive activity as the starting point for classification. B. A. Sakharov tends to this, presenting three types of independent work: reproducing, training and creative tasks; G. S. Asonova, to distinguish between types of independent work, uses the degree of difficulty in their implementation and also distinguishes three types: training, or reproducing, semi-independent and

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independent creative. B. A. Sakharov and G. S. Asonova often in their judgments rely on empirical generalizations without an appropriate theoretical analysis of the main processes of the student's cognitive activity, because of this, the interpretation of the same types of independent work, denoted by one term, has a different meaning. Let us dwell in more detail on the classification of N. S. Purysheva and P. I. Pidkasistoy, which, in our opinion, are the most acceptable.

The classification proposed by N. S. Purysheva (3) takes into account both the purpose of independent work and the nature of the student's cognitive activity during their implementation.

According to didactic goals, all tasks for independent work are divided into four groups: - Tasks with the aim of acquiring new knowledge, skills and abilities. - Tasks in order to consolidate new knowledge, skills and abilities. - Tasks for the purpose of applying knowledge, skills and abilities. - Tasks to test knowledge, skills and abilities.

The first group may include ascertaining tasks (studying new material from a textbook, a book, studying a new device from a drawing, watching an educational film, observing demonstrations and explaining them), experimental search (frontal laboratory experience, frontal laboratory work, set in a research plan, with the implementation of which students receive information about the essence of phenomena, about the connections between them, about the properties of things and fields, about the dependencies between measured values), logical search (finding connections and relationships between phenomena, highlighting common features inherent in a certain class of phenomena, etc. .); training work (acquiring the ability to solve problems, acquiring the ability and skill in using measuring instruments and making measurements), experimental (acquisition of skills in handling equipment and instruments, in assembling and repairing them, in conducting an experiment, evaluating and processing its results) .

The second group should include tasks reproducing (exercises to consolidate knowledge of concepts, laws), training (solving problems, taking measurements), laboratory and practical (conducting laboratory experiments in order to confirm any phenomena or laws, to consolidate skills and abilities in handling devices, in the conduct of an experiment), overview (drawing up a plan, a summary of the studied material, work comparing the properties of one group of substances with another, one type of phenomenon with others, etc.).

The third group consists of laboratory and practical tasks (for example, the application of knowledge, skills in assembling electrical circuits, conducting an experiment, etc.), training (application of knowledge in solving qualitative and quantitative problems), scientific and creative (description and explanation of what - any phenomena, reviewing the answers of comrades, reading reports, solving problems of increased difficulty, etc.).

The fourth group of works consists of reproducing works (deriving formulas, retelling the material explained earlier by the teacher, solving problems according to the model), creative (solving qualitative problems, solving quantitative problems that require the application of knowledge), laboratory and practical work (control laboratory work). In this classification, an attempt was made to take into account both the didactic purpose of various types of independent work, and the nature of the cognitive activity of students during their performance.

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This classification corresponds to the logic of the educational process, since each type and type of independent work occupies a certain place in the education system and, in addition, characterizes certain cognitive processes in students. Using this classification, E. L. Belkin structured the didactic material for the most effective use of technical means.

To manage the cognitive activity of students when they perform independent work with the help of technical means, it is necessary that didactic materials include:

1) consistent study of educational material in certain doses;

2) the inclusion of tasks for the improvement by students of actions aimed at mastering each dose of educational material;

3) the inclusion of tasks that control the correctness of assimilation;

4) communication to the student of the results of assimilation;

5) the student receiving instructions on what to do next, depending on the degree of correctness of the answer given by him (1). On the basis of the regularity that creativity follows from reproducing activity, is the development of the latter, and at the same time contains reproducing processes as one of its consequences, P. I. Pidkasisty postulates two didactic provisions. The meaning of the first (this is the procedural side of the classification) is as follows: the classification of independent work is determined by the structure of cognitive activity. The second didactic position states that the procedural side of students' activities as a principle in identifying the types of independent work should always act in unity with the logical-content side and be externally manifested through it (4).

Paying great attention to the classification of independent works, the author distinguishes the following types: 1) reproducing independent works according to the model; 2) reconstructive-variative; 3) partial search or heuristic; 4) research (creative).

1. Reproducing independent work (model work) includes tasks for reproducing knowledge and skills. All the data for finding the desired, as well as the way to complete the task, are presented explicitly in the task itself or in the corresponding solution algorithm. This work, facilitating the accumulation of basic facts and methods of activity by the student, the consolidation of skills and abilities, makes it possible to master the basic educational material in a relatively short period of time, but poorly ensures the development of students' creative abilities. At the same time, model work creates the conditions for the student's transition to the tasks of a higher level of cognitive activity and independence.

2. A characteristic feature of reconstructive independent work is that the task itself contains the general idea of the solution, and the student needs to develop it into a specific method or methods in relation to the conditions of the problem. The student correlates the task with other reproductive ones known to him. The main thing here is the actualization of acquired knowledge, the ability to choose and attract the necessary knowledge to solve the problem. Some generalization is characteristic of the student's cognitive activity. "...Knowledge deepens, the scope of their application expands, they become more perfect, and thinking, expressed in its own deductive conclusions, reaches the level of productive activity" (4, p.15).

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Reconstructive tasks also include tasks in which you have to use several algorithms, formulas, instructions, for example: solving substantive problems (in the classroom or at home), separate stages of laboratory work.

3. Partial search or heuristic work. A non-standard situation, non-standard tasks are proposed. It is based on search, conjecture, formulation and implementation of the idea of a solution. But the search is partial, necessary only for a fragment of the general task. Such tasks are included in a special course, a special seminar, in some term papers and theses. In the course of these works, the cognitive and practical activities of students are aimed at resolving the problem situation organized by the teacher (4). Under the problem situation we will understand the mental state of the subject experiencing cognitive or practical difficulty as a contradiction between the subject and the object of cognition in human activity. In the course of performing this type of work, the student gains experience in search activities, masters the elements of creativity, but does not acquire experience in conducting a holistic study.

4. In the course of carrying out research (creative) work, the highest level of independence and cognitive activity of the student is manifested. Through creative work, he deeply penetrates the essence of the phenomenon under study, finds new ideas when solving problems. The performance of works of this type contributes to the mastery of the methods of scientific knowledge, the development of creative activity among students: the vision of new problems in familiar standard conditions, the vision of a new function of a familiar object, the vision of an alternative solution, etc. Creative work manifests: a) understanding the purpose of the work; b) proposing and substantiating a hypothesis; c) determination of research methods; d) carrying out work to test the hypothesis; e) making adjustments; e) conclusions on the problem; g) putting the subject into new connections (with a hypothesis that has not justified itself); h) changing the method of solution.

Creativity is the logical development of reproduction. If for a secondary school student a creative task is a task that is new only for him, the final product does not have social value and novelty, then for a student this is a certain level of creativity. A real creative task (through research work, through an experimental thesis) has an objective value as a result. The research work defended by a master's degree graduate should develop some creative ideas, contain a certain scientific novelty (5). "The types of independent work are closely related and interdependent. One or another type of independent work in the real learning process is the carrier of a number of elements that make up the content of the student's cognitive activity, which are also characteristic of independent work of another type. This expresses the continuity between the types of independent work, which in fact is the basis for ensuring the optimal assimilation of knowledge by students, and for developing their creative abilities, mastering the experience of creative activity" (4, p. 104).

The considered classification, unambiguous in the definition of each type of independent work, arranges the types of independent work according to the degree of increase in their complexity in accordance with the laws of the process of cognition in training, orients training to the "zone of proximal mental development" of the student.

The typology of independent work proposed by P.I. Pidkasisty, as studies show, is different in that its implementation leads to a significant optimization of the assimilation of knowledge by students, frees up

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time that is unnecessarily spent on solving monotonous tasks, contributing to the development of independence, and allows you to see the dynamics of intellectual development. After analyzing the classification of independent work by P. I. Pidkasisty, we come to the conclusion that each type of independent work corresponds to the levels of assimilation proposed by V. P. Bespalko (table). Under the level of assimilation, we mean the ability of a student to perform a certain purposeful system of actions to solve a certain class of tasks based on the information communicated to the student (2). After analyzing the classifications of independent work proposed by P. I. Pidkasisty and N. S. Purysheva, we come to the conclusion that each type of independent work (reproducing, reconstructive-variative, heuristic, research) can contain tasks that are divided into four groups according to didactic goals (tasks for the purpose of acquiring new knowledge, skills and abilities; tasks for the purpose of consolidating new knowledge, skills and abilities; tasks for the purpose of applying knowledge, skills and skills; tasks for testing knowledge, skills and skills). Consequently, the classifications of independent works proposed by P. I. Pidkasist and N. S. Purysheva complement each other.

Teaching independent work is one of the aspects of the scientific organization of labor, both students and teachers. Independent work should be carried out by students as a cognitive activity, become a means of educating such personal qualities as independence, activity, and form a creative attitude to perceived information. The search for new means and methods of teaching leads to the fact that in the first place in the learning process the tasks are put forward not so much as the maximum assimilation of scientific information, but rather the formation of the skills to think creatively and independently acquire new knowledge.

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