EDUCATIONAL-METHODICAL COMPLEX OF THE DISCIPLINE AS A MEANS OF DEVELOPING SELF-EDUCATIONAL ACTIVITIES OF STUDENTS

Rahmatova Salima,
Uzbekistan, Surkhandarya Regional Center for Retraining and Advanced Training of People's Education Workers
e-mail: salima.raxmatova@mail.ru, Tel: +998 93 633 88 58

ANNOTATION
The article presents a list of educational-and-methodological materials for the students’ self-education activity developing; main recommendations and requirements for educational-and-methodological complex and its electronic version creating are considered as well.

Keywords: educational-and-methodological complex (EMC), algorithm of self-education activity using the EMC, electronic educational-and-methodological complex.

Further improvement of the training system is associated with the search for ways to form students’ skills of quick orientation in a powerful flow of information, adaptation in the dynamic structure of modern production, creative application of the knowledge gained. To solve these problems, it is planned to develop a system of continuous education, preserve a single educational space, expand the market for educational services, increase the level and quality of vocational education. [4]. All of these measures are aimed at developing self-educational activities.

For the successful development of self-educational activities of students, it is necessary to have appropriate technical, software, informational, educational, methodological, organizational and financial support, which forms the organizational-methodological and organizational-technical training models.

Educational and methodological support consists of printed, electronic and online materials for free access to them by students.

Educational-methodical complex (TMC) is a set of educational-methodical materials intended for the use of distance educational technologies in full-time, part-time and part-time forms of education and contributing to the effective mastering by students of the academic discipline.

Unfortunately, in pedagogical theory and practice, educational and methodological complexes are used as a means of teaching, not self-education. The presence of teaching materials in all specialties is a mandatory requirement that applies to the teaching staff of departments, although it is more important to familiarize students with its structure and content.

The main goal of creating the teaching materials is to provide the student with a complete set of teaching materials for independent study of the discipline. For the student, this is a kind of compass that helps to navigate the content of the academic discipline, the sequence of its study, sections and requirements for the level of its development. EMC enables the student to optimally organize the work on the course, providing educational, methodological and scientific literature. Thus, the educational-methodical complex in the discipline is the basis for the formation and improvement of self-educational work of
students.

The use of teaching materials in the educational process allows you to free classroom time from considering many organizational issues. A preliminary acquaintance with the curriculum and thematic plans of the course, the distribution of teaching hours between lectures and practical exercises, with their content and a list of recommended textbooks, a conceptual-terminological dictionary, as well as the structure of attestation pedagogical measuring materials, orientates students in the educational material, makes it possible to consistently study individual sections, guided by their own plan and taking into account individual capabilities.

The algorithm for compiling the teaching materials, intended for self-educational activities of students, includes several stages:

- determination of the volume of educational material in accordance with the Federal State Educational Standard and the curriculum of the discipline;
- drawing up a work program, supplemented with information and reference materials;
- preparation of a textbook (course of lectures), study guide, workbook, as well as publications containing practical tasks and exercises;
- writing guidelines for self-educational work of students, in particular for independent study of theoretical material, laboratory and coursework;
- construction of an interactive schedule for studying the discipline by students, which reflects the recommended order of studying the discipline and passing control points;
- formation of control and measuring materials.

EMC components (except for curricula and programs) can be combined in a modular manner. In this case, the module is a part of the EMC, designed to study a separate topic, conduct self-control and current control of knowledge. At the same time, control questions are developed for each module separately, and the correct answers to them will make it possible to conclude that the discipline program has been mastered in full. The text of a textbook or a course of lectures is written in accordance with the content of the questions for each module; laboratory and practical work is created in accordance with the content of each module; methodological recommendations are drawn up for the independent study of the educational material contained in the training module.

The algorithm of self-educational activity of students with teaching materials of the discipline is as follows:

- familiarization with the curriculum of the discipline;
- study of guidelines for self-educational work;
- study of theoretical material in accordance with the curriculum of the discipline;
- in parallel with the study of the educational material, the student gets acquainted with the basic terms and concepts that he needs to know when studying this section;
- implementation of practical tasks provided for in the course program;
- self-control of the correctness of the implementation of practical tasks using tests;
- passing control testing at the end of the study of the topic (section);
- passing the final testing after studying all the material of the discipline.
When introducing remote technology, various means of self-educational activity and ways of using them play an important role. In modern conditions, the logical completion of the preparation of the educational and methodological complex for distance learning of self-educational activities is its transformation into an electronic form. The purpose of the electronic educational and methodological complex is to preserve not only all the advantages of printed educational material, but also, using the capabilities of a computer, to include in it an appropriate arsenal of visual aids.

The main subject content of the electronic UMK reflects the structure of the academic discipline in accordance with the current educational standard and the curriculum for this discipline. The interaction between the theoretical, practical and methodological elements of the electronic QMS is provided:
- hypertext links between the elements of the UMK and directly between their structural concrete fragments;
- the construction of an electronic UMK on the basis of primary thematic elements that provide comprehensive educational activities on each topic or section.

Taking into account the special importance of the electronic educational and methodological complex for providing self-educational work, the developer should adhere to the following recommendations:
- observe the rigid logic of the presentation of theoretical material with the possibility of tracing all the chains of reasoning by the trainees with the help of special schemes;
- provide detailed comments on examples of task completion, progress in solving educational and applied tasks;
- observe special clarity when formulating educational tasks;
- use various means and methods of activating educational and cognitive activity.

The basis of the electronic UMK is its interactive part, which can be implemented only on a computer.

The analysis of the evolution of students' self-educational activity when using the UMK was carried out in accordance with the stages of self-education. All the stages of self-education are interrelated, each previous one determines the next one (Table 1).

### Stages of self-education

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<th>Stages of self-education</th>
<th>Characteristics of the stages of self-education</th>
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<tr>
<td>Reproduction of knowledge</td>
<td>Poorly developed self-educational knowledge and skills. The student fully determines the content of the educational material, the methods of educational work in the classical forms of the organization of the learning process.</td>
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<tr>
<td>Application of knowledge</td>
<td>The student includes methods of educational cognition in the content of the educational material, thereby begins to independently regulate his educational and cognitive activity. Knowledge of logical operations (attempts are made to independently use knowledge to solve practical problems)</td>
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<td>Generalization of knowledge</td>
<td>The student reveals the technology of his cognitive activity. At the same time, the student has samples that he correlates with his own activities. The ability to choose the essential, to reveal the cause-and-effect relationships in the studied, the ability to systematize and generalize, analyze the material is formed.</td>
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<tr>
<td>Transforming knowledge</td>
<td>The student thinks about the methods of self-educational work in different conditions and with different educational material. They are formed: the ability to consider the phenomenon from all sides, to evaluate the information received; the ability to link the new with the existing experience, the ability to see the problem and creatively solve it; the ability to explain a particular fact with the knowledge of regularities.</td>
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<td>Creating new knowledge</td>
<td>The student acquires knowledge based on his own goals and on the basis of his own thinking. This stage of self-education gives the student completely new knowledge - knowledge about himself, the peculiarities of his thinking, about the formation of his future professional activity based on the study of his own style of thinking. High quality of cognitive activity products (creative works, essays, etc.)</td>
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The experience of using educational and methodological complexes of disciplines of the natural science cycle at the Chelyabinsk Institute of Railway Transport confirms the hypothesis that they are a means of developing students' self-educational activities. A comparative analysis of the data obtained at the ascertaining and forming stages of experimental work showed that the majority of students who assimilate educational material at the stage of knowledge reproduction have made the transition to the stage of generalization and transformation of knowledge. The number of students demonstrating the stage of creating new knowledge increased by 33%; in total, almost 85% of students began to develop self-educational activities corresponding to the stages of transformation and creation of new knowledge.

In the experimental groups, the quality of academic performance and the interest of students in continuing their education improved. UMK allows students to form a holistic picture of the world, systematize their knowledge and skills, create a unified educational environment through the use of modern tools.

The conditions for the successful use of remote modular technologies in the management of self-education with the help of the UMK are the creation of a complex of training modules with different purposes; the formation of training modules in accordance with the structure of scientific knowledge; the availability of recommendations for the organization of self-educational activities at the main stages of mastering training modules. It should be remembered that the improvement of students' self-educational activities is gradual in nature and provides for a gradual progress from episodic self-educational tests to a stable system of self-educational activities. At the heart of this process is the modeling of educational situations in which a student acquires the ability to set a goal, plan his own education, navigate information, design professional self-development.
List of used Literature