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PEDAGOGICAL CONDITIONS IN THE FORMATION OF SKILLS OF ANALYTICAL ANALYSIS OF STUDENTS IN THE FIELD OF BIOINFORMATICS

Ganiyev Alisher Islomovich
Information technology Karshi branch of the Tashkent University of Information Technologies named after Mahammad al-Khwarizmi
Karshi, Uzbekistan

Annotation
In this research work, students studying in the field of information technology use tasks aimed at the development of personality, reflecting the structure and content of the skills of analytical analysis of the appropriate formation of analytical skills, directing independent work of students mainly in research activities in the process of studying bioinformational technologies, relying on the method of implemented projects using bioinformational technologies, the focus of the educator and students was defined and justified such conditions as the implementation of the interaction of the person standing.

Keywords. bioinformational technologies, analytical analysis, pedagogical conditions, educational material, educational goals, issue-task, cognitive issue task, etc.

Introduction

The first condition that contributes to the successful formation of skills for analytical analysis is the use of tasks aimed at the development of personality, reflecting the structure and content of analytical skills.
The basis of developing educational methods are developing and reflexive tasks. The methods of educational and cognitive activity of students in the process of drawing up developing assignments; it is difficult to have a clear idea that the main analytical skills that need to be formulated in the process of teaching are colorful. In addition, it is important not to forget about the difficulties and problems that students often face in obtaining knowledge.

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- Thematic Literature Analysis

Dj.Poya believes that the process of solving an issue-task is represented as the search for a way out of a difficulty or a way around an obstacle, a process of achieving a goal that at first seemed unattainable to him at once [144]. Solving problems is considered a characteristic feature of intelect, therefore, solving problems can be considered as one of the specific forms of human activity.

In accordance with the structure and content of base analysis skills, special developing tasks were developed. In them, the relevant methods of cognitive activity, which are intended to be mastered during the solution of educational issues, are embodied as a direct product of education and practical actions of the Student [1].

- Research Methodology

During the performance of educational tasks, an internal dialogue arises, the student begins to engage in a dispute with himself, forms in his brain a formula of a series of rules-regulations, final conclusions, analyzes them from different sides, and finally, choosing one from within them, negates the others. Learning tasks have been developed with the focus on the barriers to learning identified when students are researching the challenges they face while learning complex learning material while mastering information technology and software development:

learners have difficulty determining the purpose of solving a learning issue;

- the problem cannot be “seen” in a holistic way;
- they do not manage to create its structure in order to get to know information better;
- they do not know how to carry out the classification and systematization of material;
- in them, a difficulty arises with the analysis of programs (programs) created by them and programs related to their groupmates;
- students are not always able to find errors in the program;
- cannot carry out a radical transformation of material, from one method of coding to another;
- cannot develop an acceptable program (algorithm)that can cope with the learning issue.

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To eliminate such problems, students will sometimes be limited to making their own adjustments, and it will be necessary for the educator to think teran, without repeating his practical actions in a mere template manner, and to creatively approach the achievement of any problems or tasks that arise in the face.

- Analysis and results

In order to form cognitive analysis skills in students, the following tasks are developed, which serve to bring a number of skills to the surface: combining individual components of information into a single structure; analyzing information flows during the development of a database; processing both individual components of information and its entire structure; describing and constructing a structure of data; creating an algorithm of; using different methods of reaching data; using different levels of program structure; carrying out information search using different methods; developing interfaces, database models; extracting the objects of the information system under development and establishing connections between them; using modern instrumental tools and technologies of programming.

Special assignments were developed for the second group of metacognitive (reflexive and creative) tasks (masala). In this, the educational task (matter) is expressed as a concentration of the student's attention on the thought process. The goal of teaching is to understand the mechanisms of students ' own activities, behavior. This allows them to rise from the level of education from an outsider to the level of self-education independently.

These mechanisms: requires an assessment and clarification of the completeness of initial information; requires independent vision and expression of the problem; requires an assessment of the degree of complexity of the problem; are tasks aimed at tracking errors in the proposed solution; requires clarification of the goal, conditions, requirements and limitations; requires evaluation and selection of algorithms in software development; requires; the user is focused on building Independent issues, relying on familiar information; tasks with insufficient data; gives the opportunity to understand that there are several approaches to exactly one situation; requires advancing hypotheses and critically evaluating them.

The developing issue-tasks stimulate the educational process and increase the

overall activity and motiavation of students. To solve the problem-task, an analysis of the issue-task as well as its internal components is required. Based on the interaction of the internal components of the issue-task, the hypothesis of solving the issue-task is described. This hypothesis will have to prove or refute in the next stages of solving the issue-task. To write a program in the required programming language, it will be necessary to draw up a block-scheme and develop an algorithm for solving a problem-task, to find its solution. The problem is to re-Research the results obtained at the final stage of solving the task darcor.

At the initial stage of education, the issue-the task arouses the imagination as a whole situation planned and designed by the educator. The educator organizes the problem situation himself. Problem training is an issue-task that allows you to master the general principle of solving practical issues. A correctly posed issue-the task allows you to fill out scattered knowledge, tie it to one whole. At this stage, the educational issue-the task of which will be a transformation into the educational method, will change.

Assignments are closely related to the acquisition of the necessary basic operations for the implementation of information processes, such as storage, processing and transmission of information about objects, their properties and methods. Tasks are performed at the stage of learning, at the stages of acting as in a sample and in a changed situation, and at the creative stage. At the same time, the interaction of the educator and students occurs in a certain consistency – from the maximum assistance of the educator to the emergence of a self-guided subject and educational actions and a position of partnership with the educator and with each other, in full view of the increasing personal activity of students [205].

The first type of assignments is the independent execution of a previously mastered series of assignments. It is a matter of fact that these tasks contain certain information about the object under study, the operator of the programming language, about the process or phenomenon, as well as information about algorithmic actions, the step-by-step implementation of which motivates students to find out the previously studied material.

The second type of assignments is the strengthening of methods of activity. Task-tasks include information that provides for mental operations, such as

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analysis and synthesis. Their application allows students not only to accurately reproduce the previously learned knowledge, memorize it on a note, but also to mentally partially reconstruct it. In connection with this, assignments show everyone well-known situations, worked algorithms for realizing programs and methods for solving the issue-task.

In this situation, the attention of the student is drawn to the algorithm for completing the task, according to this algorithm, the student forms stable practical skills to achieve the goal set for him. Such tasks, in which there is a step-by-step execution instruction, form the skills of obtaining results. These skills directly depend on the specificity of the future professional activity.

The third type of assignment is the independent search for a solution release method. They presuppose the application of knowledge in traditional situations, but are solved in novel ways. In addition, during the configuration of programs, the initiative to master new areas of activity, the ability to bring the work started to an end, the skill to purposefully organize the process of Independent Education is formed.

With the help of assignments of this type, students consciously transfer knowledge to typovoy situations, learn to analyze events, phenomena, facts, guidance and methods of cognitive activity are formed in them, these assignments set the stage for the development of internal motives in relation to knowledge acquisition, create conditions for the prosperity of student thought activity.

The fourth type of assignments is to conduct independent research. Provides for the use of knowledge of different levels of generalization. This knowledge does not represent its concrete methods, referring only to the direction of activity. These tasks should include educational material that requires non-standard practical actions in non-standard conditions, thereby creating a new approximate basis of activity. This is where the creative initiative of the students comes to the surface. However, they will be able to carry out such tasks if they have sufficient reserves of knowledge and methods of activity on the problem under consideration. In the case of their execution, students will develop analysis skills that will unconditionally hang on any specialist today.

When developing any type of assignment intended for students, the following must be taken into account: the logic and structure of the educational material;

the practical provision that is expected from the assignment, which the future specialist will have to solve; the nature of cognitive activity aimed at completing one or another independent tasks; the continuous increase in the level of complexity.

The second condition for the successful formation of students ' analytical skills consists in focusing the independent work of students in the development of Information Technology on research activities.

In order for future specialists to independently acquire knowledge, be able to freely express their personal point of view on the problem being studied and be able to substantiate it, it will be necessary to fill the educational process with creative situations, elements of research activities and independent work. To do this, the following type of issue-tasks and tasks are proposed, which form certain skills depending on the type of independent work: not to lose consciousness among colorful software products in search of new information; implementation of operational and multi-option processing of information; identification of the most effective methods of collecting and processing information into it; Assessment of the effectiveness of the created software product; planning an experiment and processing experimental data.

Conclusion/Recommendations

As a result of the joint implementation of the work of this project, the integration of students into the educational process as individuals is realized, conditions are created for the manifestation of the creativity qualities of students and the formation of analytical skills.

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