Application of the Project Method in Computer Science Classes

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Annotation: The project method, which focuses on autonomous and group activities to solve applicable problems and increase students' competency, is reintroduced in this article.

Key words: Project method, project activity, project method, independent activity, computer science, student, teacher, project, lesson, ability development.

Introduction.

The project technique is now widely used in education [2]. It can be utilized in any field of education when enormous tasks must be completed, although it is most commonly used in the higher and secondary special education systems.

Informatics in educational institutions began to be studied very lately, but the project method of teaching was quickly adopted in the study of this topic. Projects were once created using programming languages (Basic, Pascal), but these are now rarely utilized, and project activities in computer science are primarily based on applications (presentations, spreadsheets, databases, hypertext markup language HTML).

Students are pleased with the outcomes of their work, which can be used by others to learn. They work more attentively and responsibly when there is a bigger demand for the products of their labor. The project technique is highly efficient, inspiring pupils to learn, decreasing overload, and improving their creative potential.

A person-centered paradigm of education and P.V. Simonov's notion of needs and information approach appear to be suitable to modern requirements for upgrading the methodological systems of teaching subject areas. Cooperative learning, project activities (project method), and differentiated learning are the primary technologies of person-centered education. With the use of information technology, networked computer systems, and the World Wide Web, these technologies can achieve a better degree of excellence. The new proposed educational standard for university and secondary education in information technology is based on these ideas. The goal of gaining initial competency in the use of information and communication technologies, which is established in large part during the preparation of creative projects, is prioritized.

To stimulate the student's interest in mastering. **[3,4].**

Information technology necessitates strategies for creating a setting of novelty and relevance for the issues being researched. To understand the social and personal value of mastering computer communications in project activities, which is a crucial aspect in motivating learning, it is necessary to connect the content of project activities with reality.

Purpose of the study is the creation of a lesson system utilizing the project method, the creation of a subject search for information, and the analysis of the material found.

Object of study – is the process of teaching computer science and ICT to students in higher and secondary education.

Research methods.

The project approach is centered on the development of students' cognitive skills, such as their ability to generate knowledge autonomously and navigate in the information space. On the one hand, it is a set of techniques, operations, and procedures for mastering a certain area of practical or theoretical knowledge, or a specific activity. On the other side, it is a method of structuring the cognitive process. As a result, when we refer to the project method, we are referring to the method of achieving the pedagogic aim through a detailed development of the problem (technology), which must conclude in a practical product, created in some way **[1,2].**

The characteristics of the subject demand the adoption of the project method in computer science classes. In computer science classes, computers are always available, and doing practical work on the computer becomes an important component of the curriculum.

The results obtained.

These outcomes can be seen, understood, and implemented in real-world situations. To do this, pupils must be taught to think independently, drawing on information from various fields, the ability to foresee the outcomes and possible implications of various solutions, and the ability to identify cause-effect relationships. The project method is always focused on students' independent activities - individual, partnered, and group - that they complete in a set amount of time. This methodology is organically linked with a group learning strategy. **[5].** The project method always entails the solution of a problem. Many of the problems solved in computer science classes are rarely problematic. When students work on computer science projects, they are performing algorithms and exercises rather than solving a problem.

When doing any type of task, the learner finds himself in a situation of necessity:

1*) information search* (it is recommended to use Internet resources, work with search engines, open multimedia encyclopedias, databases);

2) *information processing* (analysis of the search task, determining the necessary sources, checking the reliability (validity) of the material obtained, conversion of formats.

3) *presentation of information* (work with graphic and text editors, publishing the results on the Internet, preparation and demonstration of presentations, making graphic dependencies);

4) *information transfer* (the use of various media and computer telecommunications).

Assignments may be of the following types:

➢ preparation of thematic reference material: booklets, electronic textbooks and electronic teaching aids (using multimedia encyclopedias, reference books, Internet resources, databases - work with text and HTML editors).

➢ mathematical and simulation modeling (collection of statistical material, identification of dependencies - the use of spreadsheets, the use of computer-aided calculation programs, work with programs for constructing graphical dependencies);

➢ development of multimedia presentations on various topics.

Conclusion.

Project activities in computer science classes:

1. creates a strong positive motivation to study the relevant material and solve applied problems independently;

2. forms a sense of responsibility for the work being done;

3. creates the conditions for a cooperative relationship between students;

4. develops skills in applying software in different application areas;

5. contributes to the development of creative approach to problem solving and the formation of skills to find and choose the best solution;

6. allows one to create a real product.

All of the above suggests that the use of the project method helps to fully implement the formation of information competence of students.

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