

USE OF VIRTUAL ENVIRONMENTS IN TEACHING STUDENTS TO PROGRAM

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ANNOTATION

This in the article programming of languages opportunities, students to programming from virtual environments in teaching to use about offer and recommendation given.

Keywords: programming, algorithm, virtual environment, distance education, platform, information-educational environment, software supply.

Algorithms and programming play an important role in the development of thinking ability of students in the field of information technologies, but in some cases, insufficient attention is paid to its capabilities [1]. It is important for students to have sufficient knowledge in the field of information technologies, to use the capabilities of practical software products for full-fledged professional activity in the future, for example, to develop the ability to create additional codes (scripts) in the management of objects in this software environment" [2].

In this regard, N. Wirth said that programming is perhaps the most important discipline in the post-industrial era, and it is important for the development of students' logical and algorithmic thinking [3]. According to VYJujjalov, it is important not only to use computer applications (automated by macro scripts) as a tool for solving problems in the educational system, but also to master programming skills in high-level programming languages [4].

Today, programming is versatile and is used in such important fields as construction, business and economy, medicine, agriculture, and technology. In industry, a large part of physical labor is being replaced by software-controlled machines and robots, which provide a significant increase in speed, accuracy of operations and production efficiency. Such a wealth of different applications is

supported by a robust selection of programming languages, each with its own pros and cons.

It is known that programming is hard mental work, and in the conditions of our rapidly developing world, it is important to determine the place of a person in society. Because with the help of programming languages, the user has the opportunity to create his own software products, to solve non-standard tasks that cannot be performed in standard user programs. In addition, students: develop their logical thinking; increases accuracy and focus; forms the qualities of ingenuity and ingenuity; develops imagination, creativity and algorithmic thinking.

Therefore, today it is necessary to develop logical, algorithmic, creative thinking of students about programming, and to develop new approaches to the formation and development of their competencies. Studentsto programmingto teachnewnewapproachesoneas virtual environmentsto bringcan _

Students learning programming in a remote team in a virtual environment is significantly different from learning individually . Because the students who worked as a remote team in the virtual environment correct the shortcomings of their peers and offer their own solutions by discussing the program code of the given problem online based on interactive ideas [5, 6] . This, in turn, helps to develop students' logical and algorithmic thinking about programming and to develop the competence of designing various complex practical projects. Therefore, today it is necessary to form a culture of remote team learning of programming using virtual environments in the independent educational activities of students [7].

An important aspect of programming a given problem as a team is that students develop the ability to exchange ideas and find a common solution by discussing different ideas. In this regard, according to V. S. Sheinbaum, he believes that a team is a group of like-minded people who cooperate with each other to achieve common goals [8]. He noted that working as a team provides the following opportunities:

- a culture of solving a given problem is formed by communicating with colleagues;
- quick and effective solving of various complex problems;
- effective implementation of practical projects;
- share ideas with the team and make a unified decision to solve the given problem.

Through such opportunities, it is possible to increase motivation of students in subjects, including programming, to develop creative abilities, and to solve various problems in the field of information technologies. Therefore, it is necessary to increase the ability to work as a team when teaching programming to students [7] . For this purpose, it is necessary to select effective distance learning platforms and information-

educational environments based on the analysis of possibilities for teaching programming as a team and to introduce these environments into the continuous education system [1].

That's it for creating a culture of using distance education platforms, including Atom, Cloud9 IDE, Visual Studio Live Share, CodeSandbox, Codeshare, CodePen, Collabedit, Codebunk, Repl.it, kodeWeave, SyncFiddle, Google Colab, AWS Cloud9, GitLive, SublimeText must

With the help of the recommended environments, it is possible to effectively organize the independent education of students in subjects related to programming languages, to spend their free time productively, and to evaluate knowledge, skills and abilities related to programming in a short time. Of this as a result of students to programming about competence to form and to develop is achieved.

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