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METHOD OF ORGANIZING LECTURE COURSES ON OBJECT-ORIENTED PROGRAMMING LANGUAGES USING BLENDED EDUCATIONAL TECHNOLOGY

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Abstract. This article presents suggestions and recommendations for organizing object-oriented programming language classes using the "Face-to-Face Facilitator" model of blended learning technology.

Key words: blended learning, e-learning, object-oriented, programming, structure, competence.

"Algorithmization", "Algorithmization and Programming", "Basics of Programming", "Programming Languages", "Modern Programming" languages" are being taught. The content of these subjects includes object-oriented programming languages such as Java, Python, C++, Ruby, C#, JavaScript, Objective-C, PHP.

The development of students' logical, algorithmic, creative thinking and competence from the mentioned programming languages requires a lot of time, various researches and the use of modern educational technologies. Because the implementation of various project works in the mentioned programming languages requires the implementation of the following steps:

1. Effective use of the environment;
2. Writing program codes;
3. Link buttons with generated codes or switch to visual mode;
4. Preparation of various visual projects.

The given sequence consists of several stages, each of which requires a separate approach. This creates the need to use a certain technology. Therefore, it is recommended to use the method of using mixed educational technology in the organization of training within the framework of the research.

In the recommended methodology, the use of the "Face-to-face" model of blended learning of lecture training is defined as one of the main tasks of the research.

When lectures on object-oriented programming languages are conducted using the "Face-to-face" model of mixed education, an important part is conducted directly in cooperation between professors and students. E-learning resources serve as an additional tool.

Therefore, it is appropriate to use the capabilities of the web, that is, the global network, when conducting lectures on object-oriented programming languages. Because in connection with the popularization trend of the global network, special attention is being paid to the organization of lectures in higher education institutions with the help of didactic electronic educational resources, and its features are to humanize education, increase students' motivation, creative thinking. and is serving in the development of competence.

Using the capabilities of the global network, it is possible to become a highly qualified specialist by developing competitive qualities of students by conducting lectures on object-oriented programming languages. In this regard, the main task of the professor-teacher is to use the global network in programming education, taking into account the individual capabilities of students.

Mixed education serves as an innovative educational technology. Because at the same time, in the modern world, innovative technologies are playing an increasingly important role

in the organization of the educational process, approaches to education and teaching methods are changing.

Mixed education can be cited as one of the main modern technologies aimed at improving the quality of education. Blended learning technology provides a combination of classroom lectures and individual intensive training in an e-learning environment. In this case, the "Face-to-face" model of mixed education is of great importance.

The "Face-to-face" model of blended learning is a combination of traditional lectures and e-learning using distance technologies. Thus, the "Face-to-face" model of mixed education allows to create a new field of interaction between subjects of the educational process in all types of educational and cognitive activities [1, 2]. This integration makes it possible to present the topics of lectures on object-oriented programming languages in a visual form, which opens up new opportunities for the credit-module system of higher education institutions. In the application of blended learning technology from object-oriented programming languages to lectures, e-learning resources are software for traditional lectures, and educational materials are presented in electronic format. Such a lecture includes the design of an online course based on the systematization and integration of materials on separate academic subjects by the professor and its placement in educational environments.

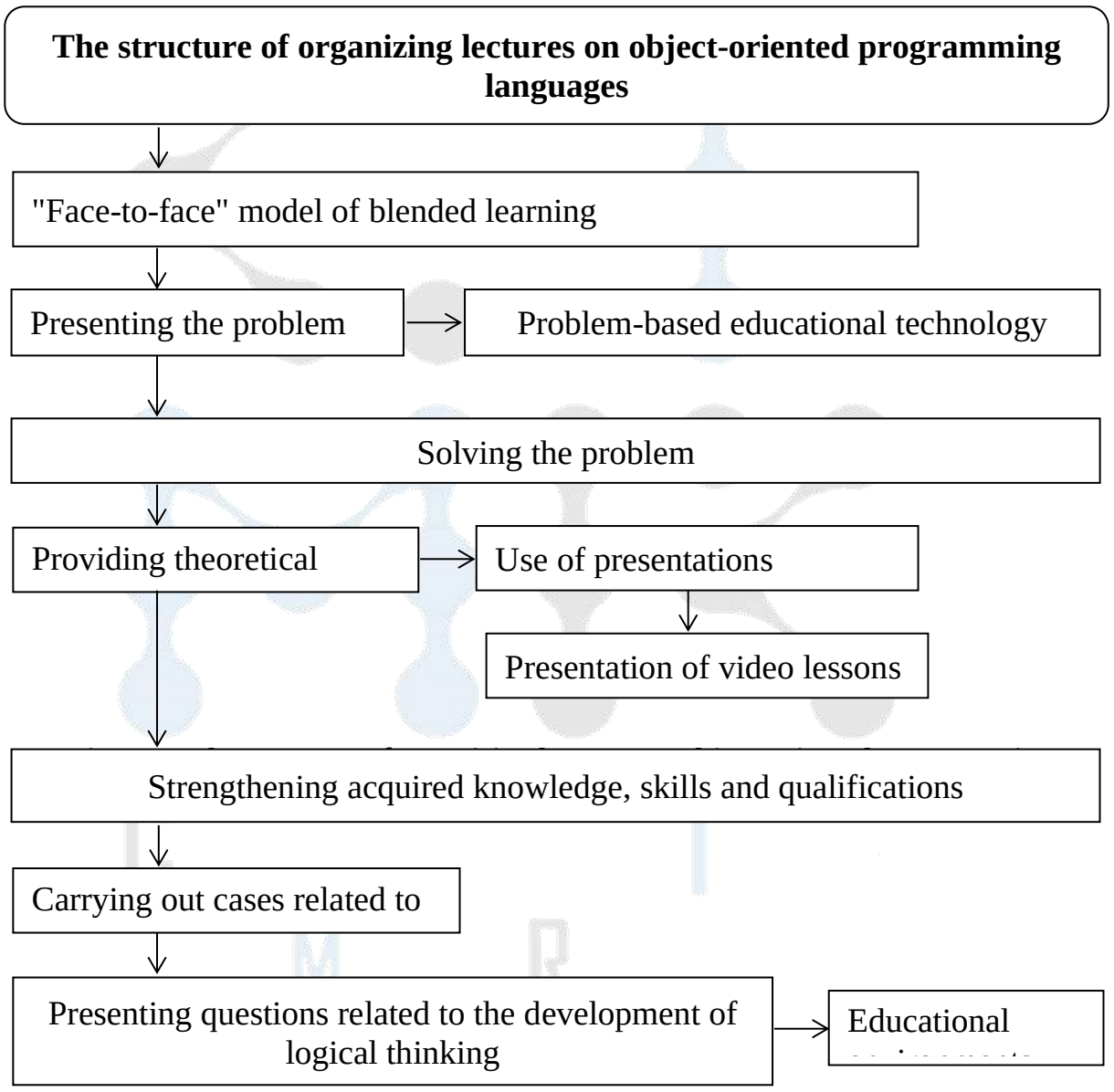
Recently, many research works and publications have appeared in scientific and methodical sources on conducting lecture classes with the help of electronic educational resources. In this regard, T.N. Kameneva, B.I.Zobova, P.I.Serdyukova, A.A.Andreev, S.O.Sysoeva have conducted scientific research, and they say that mixed education highly qualified specialists minimize the costs of various resources, individual characteristics of students, their capabilities , is based on traditional and innovative technologies that take into account preparation, as well as personnel and financial capabilities of higher education institutions [1]. Such studies are also presented in the works of the following scientists, in their studies, studies on the use of electronic educational resources in the organization of lectures on subjects related to informatics and information technologies: U.M. Mirsanov [3], M.R. Fayziyeva [4], F.J. Tokhirov [5], A.O.Norbekov [6], D.R.Roziyeva [7], Ye.V.Baranova [8], I.S.Spirin [9]. Although resources on the use of blended learning technology were not fully presented in their research, the idea of using blended learning technology was put forward. According to the cited scientists, electronic educational resources for the web serve as an important pedagogical software tool in the organization of lectures on subjects related to informatics and information technologies. Therefore, it is necessary to use electronic educational resources designed for the web when conducting lectures on programming languages, especially object-oriented programming languages.

Summarizing the above-mentioned theoretical analyzes and the opinions of scientists, in increasing the effectiveness of teaching informatics and information technologies, including object-oriented programming languages, and in developing the competence of students in object-oriented programming, mixed education "Face-to-face" It was concluded that it is necessary to use a new approach of the model, that is, information-educational environments. The main purpose of conducting lecture classes with the help of educational environments is the competent management of education, assessment of knowledge, analysis of the educational process, and improvement of educational efficiency. Therefore, the organization of lectures on object-oriented programming languages with the help of information-educational environments should be based on the following principles: availability; entertainment; specific features of

students' perception of the material on the screen; variety of forms; taking into account the dynamics.

With the help of lecture sessions organized from object-oriented programming languages based on the recommended principles, it is possible to attract students' attention and develop their logical and algorithmic thinking [1, 2, 10].

Thus, on the basis of the above-mentioned analytical sources, the structure of using the "Face-to-face" model of blended learning of lecture classes from object-oriented programming languages was developed (see Figure 1).



This structure envisages the use of the "Face-to-face instructor" model of blended learning when conducting lectures on object-oriented programming languages. In this case, it is recommended to use the technology of problem-based education before explaining the topic of the new lecture. With the help of problem-based learning technology, it is important to increase students' motivation for object-oriented programming languages, to solve problems through independent research, to form their intellectual potential, and to develop logical and creative thinking skills and competence.

In short, by organizing lectures on object-oriented programming languages with the help of mixed education technology, it is possible to increase the motivation of students to prepare visual projects, develop their creativity, cognitive and competence.

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