DIDACTICAL POSSIBILITIES OF MOBILE APPLICATIONS IN INDIVIDUALIZATION AND INFORMATIZATION OF EDUCATION

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ABSTRACT

This paper identifies some didactic opportunities based on the analysis of the experience of using mobile devices as a teaching tool and their use in individualization and informatization of education described in the scientific, pedagogical, methodological and technical literature. The conditions of informatization of society are considered in which: active and constantly expanding use of the intellectual potential of society, concentrated in the printed fund, in scientific, industrial and other activities of its members; integration of information technology with scientific, industrial, initiating the development of all spheres of social production, intellectualization of labor activity; a high level of informatization services, the availability of any member of society to sources of reliable information, visualization of the information provided, the materiality of the data used.

Key words: mobile learning, mobile technologies, educational processes, individualization of learning, informatization of education, mobile devices.

INTRODUCTION

The use of information and communication technologies in the learning process allows you to give the educational process a purposeful, personality-oriented character by providing an interactive dialogue; to form an individual learning path for each student, using the possibility of automated selection of various options for educational tasks and providing operational assistance in conditions of immediate feedback, to develop students' skills for independent work due to the ability to search for educational information in global and local networks; automate the control of the learned material; to intensify the educational activities of students, increasing their motivation in the context of the visual presentation of educational material on the screen, the use of audiovisual opportunities, providing students with the ability to control various objects, etc. [eight].

The development of scientific and technological advances in the field of information technology in society does not go unnoticed by all the technical advances that are increasingly enticing with their capabilities and convenience. Every year, more advanced technologies and applications appear on the market, and the number of users also increases, especially among young people [18].

Mobile technologies are being introduced and used by society everywhere, starting from everyday life and including all spheres of life of society: in everyday life, in the economy, in business, in management, in education. The range of application of the capabilities of mobile technologies is constantly expanding, becoming available and easily used [7, 20].

Analysis of the concept of "mobile learning" from various sources, such as the UNESCO publication [22], as well as the definitions given by I.N. Golitsina and N.L. Polovnikova [3], the general trend of mobile learning can be identified - this is the use of mobile technologies in the learning process. The introduction of mobile technologies into the educational process is called mobile learning or m-Learning, which implies the use of mobile technologies in the educational process, both separately and in combination with other teaching methods and information and communication technologies [22].

Mobile learning provides for the assimilation of specially organized learning materials by students, access to which is carried out using mobile technologies and devices. This approach is reflected in the following definitions:

"Mobile learning - e-learning using mobile devices, independent of time and place, using special software on a pedagogical basis of interdisciplinary and modular approaches" [5];

“Mobile learning is a form of organization of the educational process based on the use of mobile computing devices and wireless communication” [6];

The use of mobile technologies in teaching is a relatively new trend, therefore, the theoretical basis in relation to them is under discussion; the teaching community is making attempts to use mobile devices in the educational process.

MAIN PART

In education, most often, teachers are limited to only additional training sessions with students who have gaps in knowledge, skills, and skills in certain sections of the program. Whereas individualization helps not only to find ways of teaching each student, but also increases the effectiveness of learning in general. This is evidenced by various experiments carried out on the use of individualization of learning.

N.V. Kozlova, in his work, the concept of “individualization” was used in the following sense: “Individualization is learning in which his methods, techniques and rates are consistent with the individual capabilities of the child, with the level of development of his abilities; taking into account the individual characteristics of students in the learning process in all its forms and methods” [4].

I.E. Unt ("Individualization and differentiation of learning") [12] also studied the effectiveness of individualization of educational work. The main object of the research was the individualization of educational assignments for independent work of students. The use of individualized independent work contributed to an increase in the efficiency of mastering the educational material.

And now let's list the didactic possibilities of mobile applications in the individualization and informatization of education:

The possibility of expanding the presentation of educational material and increasing clarity. Considering the possibilities of augmented reality technology as a learning tool, the researchers note that it "gives students the opportunity to see the world around them in a new way and tackle real problems in the context with which they are already associated" [15].

The ability to improve visibility and interactivity. Instructions for working with software products Another scenario for using mobile devices is their use for working with podcasts [16, 17, 19]. Podcasting is a way of creating and transmitting audio or video information on the Internet. The main didactic functions of podcasting include: visibility and integrativity (the ability to perceive the studied object as a part and as a whole, comprehension of the perceived educational content); informational (work with information - collection, processing, presentation); managerial (management of educational activities); educational (obtaining new information); developing (development of creative potential, as well as skills and abilities to work with information); controlling (the ability to control student activities asynchronously); interactive (interaction between the subjects of the educational process); organizational and optimization (the choice of forms and methods of teaching, differentiation and individualization of teaching) [13].

In the study of S.S. Arbuzov, based on the results of monitoring the educational process, it is shown that “the use of podcasting technology in teaching computer networks contributed to: individualization of teaching; enhancing the educational activities of students; interactivity of training; saving time on explaining theoretical material and the peculiarities of using technologies associated with the design, creation and configuration of computer networks; a more visual and diverse presentation of educational material; creating a comfortable learning environment” [1].

The possibility of organizing independent work of students The use of mobile devices in the framework of independent work of students provides ample opportunities for working with information of various types. Since a smartphone in

most cases includes a geolocation module, a photo and video camera, a microphone and an audio speaker, and also has built-in tools for working with various types of information, students have ample opportunities to use a mobile device as a tool when performing independent work (as a classroom and outside the classroom). Thanks to cloud technologies, in the course of solving educational problems, a smartphone can also act as a means of communication between students and between teachers and students [2].

RESULTS AND DISCUSSION

At present, the tasks of a modern school are focused on the following aspects of teaching: improving the quality of knowledge and skills of students; development of the personality, its cognitive and creative abilities; to prepare students for the constantly improving means of information technology for the social adaptation of the individual in the information society.

The solution to the above is the informatization of education, which is commonly understood as a purposefully organized process of providing the education sector with methodology, technology and practice for the development and optimal use of information and communication technologies used in comfortable and health-saving conditions, focused on the implementation of the goals of learning and development of the individual.

The ultimate goals of informatization of education are to provide a qualitatively new model of training for future members of the information society, for whom active mastery of knowledge, flexible changes in their functions in work, the ability for human communication, creative thinking and planetary consciousness will become a vital necessity [8].

The ideas of informatization of education are being actively implemented in modern schools: individual programs for the development of schools based on information and communication technologies are being developed and implemented, new educational programs and technologies, new learning models are being mastered.

During the lesson, the teacher provides active cognitive activity of students, using various forms of its organization: frontal, group and individual [8].

For maximum effectiveness in teaching students, frontal work should be combined with individual work, when each student works on an assignment intended only for him and taking into account individual characteristics and capabilities. Individual assignments can be part of a common collective assignment, and after completing them, all students take part in the discussion of the results.

Individual educational work of students in a mathematics lesson is characterized by a high level of independence, maximum correspondence to the level of training, the development of the abilities and cognitive capabilities of each student. When performing various exercises and solving problems on a computer, students fill in the existing gaps in the study of educational material, in the formation of knowledge and skills.

Individual work in the lesson allows you to adjust the pace of advancement in the teaching of each student in accordance with his training and capabilities. The success of this work depends on correctly selected differentiated tasks, systematic control by the teacher, self-control and self-correction with the help of electronic educational complexes, and the provision of timely assistance in resolving emerging difficulties. For low-performing students, it is necessary to differentiate not so much the complexity of the tasks as the measure of the teacher's help or computer “tips”.

With the individual organization of educational work, students practically do not communicate with each other, the acquired knowledge and experience of independent activity do not become the property of all classmates, therefore it is necessary to combine individual work with frontal and group work [8].

CONCLUSION

Based on the foregoing, it can be noted that the introduction of new information and communication technologies in the educational process makes it expedient to implement the following didactic opportunities and their applications:

the formation of representations of functional dependence in conditions of interactive interaction; the formation of the ability to compose numerical and alphabetic expressions, transform them using formulas; construction of various display objects according to the specified parameters; the ability to study mathematical models on the screen; by repeatedly changing the set parameters; control and self-control of students. The described variety of didactic capabilities of mobile technologies makes it possible to talk about building a system of mobile learning methods focused on the study of a specific academic discipline.

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