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## **Organization of mobile learning as a new technology in education**

The article is devoted to the forms and methods of introducing mobile technologies into the educational process. The authors analyzed the advantages and disadvantages of mobile education. The definition of the concept of «mobile learning» as one of the key requirements for students is proposed, since computers and the Internet have become necessary educational tools, the technologies have become more portable, affordable, efficient and easy to use. In addition, the authors propose to familiarize themselves with the wide possibilities for expanding participation and access to ICT, in particular on the Internet. One of the main points to which special attention is paid is the introduction of tablet PCs, which makes it possible to use mobile Internet access with equal, if not more, functionality than desktop computers. The role of the student and the teacher in the process of performing independent work is singled out. It is noted that most mobile devices are useful in the field of education, management, organization and teaching for practitioners, as well as technical support tools for students.

*Keywords:* competence, initiative, innovativeness, mobility, flexibility, dynamism, contractibility, effective use of information technologies, ICT, m-learning.

The term «mobile learning» (m-learning) refers to the use of mobile and portable IT devices, such as PDAs (Personal Digital Assistants), mobile phones, laptops and tablet PCs in teaching and learning. As computers and the Internet have become essential educational tools, technologies have become more portable, accessible, effective and easy to use, this opens up wide opportunities for increasing participation and access to ICT, particularly on the Internet. Mobile devices, such as phones and PDAs, have much more reasonable prices than desktop computers, and therefore represent a less expensive way of accessing the Internet (although the cost of connection may be higher). The introduction of tablet PCs now allows you to use mobile Internet access with equal, if not more, functionality than desktop computers.

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Recently, the term «mobile learning» appears in the teaching methodology of various disciplines in Kazakhstan and abroad, which implies technologies that allow organizing the learning process using mobile communication devices, such as mobile phones, PDAs, laptops, gadgets. These technologies can be used anywhere, at any time, including at home, in the train, in hotels, etc. [1].

«Mobile learning» attracts young people who have lost interest in learning. The main task of teachers is to learn the advantages of mobile learning, which can be as follows:

- students can interact with each other and with the teacher, rather than hiding behind large monitors;
- It is much easier to place several mobile devices in the audience than several desktop computers;
- Pocket or tablet computers and e-books are easier and take up less space than files, papers and textbooks, and even laptops;
- recognition using the touch screen becomes more visual than using the keyboard and mouse;
- You can exchange tasks and work together.

Mixed training which makes the learning process more efficient and interesting to use. It should combine the advantages of various forms of learning, which best fits the context of learning in an interactive learning environment. Mobile training can be combined with other types, providing interactive learning conditions for students.

Let us dwell on concrete forms and methods of introducing mobile technologies into the learning process.

1. A mobile phone provides access to the Internet to sites with learning information - is used as one of the forms of distance learning.

The first (and most common) way is to use a mobile phone as a means of accessing the global network. It is possible to organize access to specialized sites containing electronic training courses, tests, practical assignments and additional training materials (drawings, photographs, audio and video files). Also, it is possible to exchange e-mail for educational purposes and instant messaging in ICQ, QIP, versions of which exist

for mobile phones. Thus, at all stages of training, there are many opportunities for transferring information materials to the trainee, as well as monitoring the entire learning process and helping to solve emerging problems.

An example of such use of mobile phones is the actively developing project M-Ubuntu, developed by the large Swedish organization Learning Academy Worldwide in the second half of 2007. Within the framework of this project, a distance learning platform was presented, allowing to create all conditions for obtaining new knowledge and active use of the latest information technologies, even in remote regions and countries of the third world. M-Ubuntu developers paid special attention to training with the help of mobile phones, and not only students can take advantage of this system. Specifically for teachers, applications have been developed for the development of skills, as well as programs for testing and controlling students. Any teacher, regardless of his whereabouts, using the M-Ubuntu platform, is able to consult professors from the largest universities.

2. Mobile phone - a means of reproducing audio, text, video and graphic files containing educational information.

The second way to use mobile phones for training is to use special programs for cell phone platforms that are able to open and view office software files, such as Office Word, Power point, Excel. Thus, having in the memory of a mobile phone such files containing training information, you can view their versions, adapted specifically for the phone screen, with convenient scroll bars, a suitable font and a user-friendly interface.

Also, the source of information can serve as video and audio files, the player programs for which there is in each phone in recent years. Especially valuable this opportunity is for those wishing to learn foreign languages - there is a huge variety of audio courses and audio books, including files of different formats and lengths.

An example of the successful application of this method of education is a series of educational programs in the universities of Japan and China. Considering mobile technologies, teachers of these universities consider them very promising in the context of informatization of modern society. The National Cyber Institute in Japan, specializing in distance learning via the Internet, in 2008 proposed an innovative system of training - using a mobile phone, which allows you to study any discipline, either at home or in a cafe or subway. If on the computer during the lesson in the center of the screen the text of the lecture and all the necessary drawings are displayed, and in the corner the video of the lecture itself is broadcast, the version for the mobile phone is based on the technology of streaming video, and all texts and drawings are downloaded additionally. Students were asked to study about 100 different subjects, including ancient Chinese culture, journalism and English literature.

3. The mobile phone and its functionality allow organizing training using adapted electronic textbooks, training courses and files of specialized types with training information - training manuals are developed directly for mobile phone platforms.

Another way to use mobile phones for training is to use specialized electronic textbooks and courses, adapted for viewing and execution on students' mobile phones. Students are encouraged to download Java applications to their phone, containing, for example, testing in certain subjects, as well as information (electronic textbooks, lecture texts) necessary for their successful implementation. Modern technologies allow to easily design and programmatically implement such electronic benefits. The ability to place schemes, drawings and formulas makes writing electronic training courses for mobile phones universal and applicable to absolutely any subject under study. It is also possible to implement training programs in the game shell, using the graphics capabilities of phones, but the implementation of such applications is a rather complex and time-consuming process. As a result, the writing of electronic textbooks and subject testing programs for mobile phones seems to be a more promising direction. There are a lot of special applications for mobile phones, such as calculators of varying degrees of complexity (simple, scientific), office programs for mobile phones, applications containing various tests with answers (for example, for psychologists), etc.

The following advantages of mobile education can be distinguished:

- Students can interact with each other and with the teacher, rather than hiding behind large monitors.
- It is much easier to place several mobile devices in the classroom than several desktop computers.
- Pocket or tablet PCs and e-books are easier and take up less space than files, papers and textbooks, and even laptops. Recognition using a stylus or touch screen becomes more visual than using a keyboard and mouse.

- There is an opportunity to exchange tasks and work together; Students and teachers can send text by e-mail, cut, copy and paste, transfer devices within a group, work with each other, using the infrared functions of a PDA or a wireless network, for example, Bluetooth.

- Mobile devices can be used anywhere, anytime, including at home, in train, in hotels - it is invaluable for on-the-job training.

- New technical devices, such as mobile phones, gadgets, gaming devices, etc., attract students-young people who may have lost interest in education.

- The latest trends in learning are mixed learning, which combines various types of training to make learning more effective and interesting. Mixed training combines the advantages of various forms of learning, and is best suited to the context of learning in an interactive learning environment. Mobile training can be combined with other types of training, providing interactive learning conditions for students.

However, it is also necessary to consider the following possible disadvantages:

- Small mobile screens of PDAs limit the amount and type of information that can be displayed.

- There are limited opportunities for storing mobile phones and PDAs.

- Batteries should work regularly and data may be lost if this is not done correctly.

- They can be much less reliable than desktop computers (although Tablet PCs start to solve this problem).

- It's difficult to use graphics, especially with mobile phones, although 3G and 4G eventually allow it.

- The market is changing rapidly, especially for mobile phones, so devices can become obsolete very quickly.

- Bandwidth may decrease with a large number of users using wireless networks.

Scientific research of the possibilities of mobile technologies and conditions of implementation in the education system are actively continuing, and today their practical application is beginning to develop in Russia. A large number of online resources offer students electronic English-Russian dictionaries, calculator programs and a variety of cheat sheets for various subjects for use on mobile phones. Thus, the publishing house «Drofa», is developing a project m-learning, which is based on the development of teaching materials for the study of various disciplines, as well as preparing for the USE using special programs for mobile phones [2].

To date, mobile phones - the most accessible technology for students and students, representing a wide range of opportunities. Not surprisingly, the students themselves have long used it to «facilitate» the learning process - a lot of cribs «wrapped» in a java application, the ability to find an answer on the Internet or ask a friend with mms or instant messaging (for example, ICQ).

Thus, a mobile phone from a conventional means of communication turns into a device for obtaining new information, for learning and entertainment.

Summarizing the aforesaid, it can be concluded that the introduction of mobile technologies in education:

- allows the participants of the educational process to move freely and expand the scope of the educational process beyond the walls of the educational institution;

- gives an opportunity to study people with disabilities;

- does not require the purchase of a personal computer and paper educational literature, i.e. Economically justified;

- allows training materials to easily spread among users due to modern wireless technologies (WAP, GPRS, EDGE, Bluetooth, Wi-Fi);

- By submitting information in a multimedia format, it helps to better assimilate and memorize the material, increasing interest in the educational process.

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Mobile devices penetrate all spheres of our life and mobility becomes one of the key requirements for students [3].

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## Білім берудегі жаңа технологиялық мобильді оқытуды ұйымдастыру

Мақала оқу үрдісіне ұтқыр технологияларды енгізудің формалары мен әдістеріне арналған. Авторлар ұтқыр білім берудің артықшылықтары мен кемшіліктерін талдады. Студенттерге қойылатын негізгі талаптардың бірі ретінде «мобильді оқыту» ұғымының анықтамасы ұсынылды, себебі компьютерлер мен интернет қажетті білім беру құралдарына айналғандықтан, технологиялар портативті, колжетімді, тиімді және пайдалануы оңай болды. Бұдан басқа, авторлар АКТ-ға қатысудың кең спектрі мен интернет желісіне колжетімділіктің кең мүмкіндіктерімен танысуды ұсынды. Ерекше назар аударылатын негізгі нүктелердің бірі планшеттік компьютерлерді енгізу болып табылады, бұл, үстелдік компьютерлерге қарағанда, тең емес, көп емес функционалды мүмкіндіктері бар ұтқыр интернетке колжеткізуге мүмкіндік береді. Студенттің және оқытушының өзіндік жұмыстарды орындау үрдісінде рөлі айқындалады. Көптеген мобильді құрылғылар оқыту, менеджмент, практиканттарды ұйымдастыру және оқыту, сондай-ақ студенттерге арналған техникалық колдау құралдары саласында өте пайдалы және тиімді.

*Кілт сөздер:* құзыреттілік, бастамашылдық, жаңашылдық, ұтқырлық, икемділік, серпінділік, келісімшарттық, ақпараттық технологияларды, АКТ, мобильді оқытуды тиімді колдану.

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## Организация мобильного обучения как новая технология в образовании

Статья посвящена формам и методам внедрения мобильных технологий в учебный процесс. Авторами проведен анализ преимуществ и недостатков мобильного образования. Предложено определение понятия «мобильное обучение» как одно из ключевых требований к обучающимся, так как компьютеры и интернет стали необходимыми образовательными инструментами, технологии стали более портативными, доступными, эффективными и простыми в использовании. Помимо этого, авторы предлагают ознакомиться с широкими возможностями для расширения участия и доступа к ИКТ, в частности в Интернете. Один из основных моментов, которому уделено особое внимание, — внедрение планшетных ПК, что позволяет использовать мобильный доступ в Интернет с равной, если не с большей, функциональностью, чем у настольных компьютеров. Выделены роли обучающегося и преподавателя в процессе выполнения самостоятельной работы. Отмечено, что большинство мобильных устройств являются полезными в области образования, управления, организации и преподавания для специалистов-практиков, а также техническими средствами поддержки обучения для учащихся.

*Ключевые слова:* компетентность, инициативность, инновационность, мобильность, гибкость, динамизм, сократимость, эффективное использование информационных технологий, ИКТ, мобильное обучение.

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