



## IMPROVING THE METHODOLOGY OF DEVELOPING THE COMPETENCE OF FUTURE TECHNOLOGY TEACHERS USING MOBILE APPLICATIONS

Ismailova Momogul Hamraboy qizi

Urgench State Pedagogical Institute

Teacher of the Department of Physics, Mathematics and Technological  
Education, Faculty of Exact and Applied Sciences

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**Annotation:** This article provides extensive information on the creation of electronic educational resources based on mobile technologies, and highlights the possibilities and conveniences of mobile education. The analysis of world trends shows that the use of mobile technologies for solving various pedagogical tasks in the educational process is of great vital importance. The article also presents the technology of creating electronic educational resources based on mobile technologies, programs that create mobile books, and several ways of using mobile devices for educational purposes.

**Key words:** mobile devices, mobile technologies, information communication technologies, skills, educational goals, site, resource, multimedia tools.

### **Introduction.**

Today, the current development of science, technology and technology defines the image of modern society. The most important feature of modern society is that globalization is visible in all its spheres. Globalization itself requires rapid movement, immediate acquisition of necessary information, their processing and effective application in practice. To be able to move in this way, a person who is knowledgeable in his field, able to acquire professional skills at a high level, as well as the ability to distinguish the necessary information from the large volume of information available on the global Internet network, the ability to quickly absorb scientific news, only personnel with rich experience and skills will have it.

In his address to the Oliy Majlis, our President Shavkat Mirziyoyev stated that it is necessary and necessary to acquire digital knowledge and modern information technologies in order to achieve progress. The most important condition for the stable and rapid development of the country is to educate well-rounded, goal-oriented and active young people who have modern knowledge and skills and can take responsibility for the country's worthy future.

In recent years, the theory and practice of using mobile devices and mobile educational resources have been actively discussed at various scientific events. The analysis of world trends shows that the use of mobile technologies for solving various pedagogical tasks in the educational process is of great vital importance. Mobile learning refers to the planning and delivery of learning through mobile devices.

The term mobile education (*M-learning*) began to be used fifteen years ago in the pedagogical literature in English, and now in our country as well. Mobile education (*m-education*) allows to organize learning and education using mobile and portable devices.

Among the major projects abroad aimed at providing theoretical and practical education with the help of mobile devices, it is worth noting the following: "*The Mobile Learning Network*

*Project-MoLenet" (UK), "Mobile Learning Environment Project-the MoLe" (USA), "Mobile Technologies in Lifelong Learning" (Mobile Technologies in Lifelong Learning: best practices-MOTILL), (European Union), "Mobile Learning Consortium" (Mlearning Consortium) (Canada).*

### ***Methodology.***

- ❖ theoretical methods study of regulatory legal documents, theoretical analysis and synthesis,
- ❖ methods of analysis, modeling, design, rationalization, conclusion of the state of electronic education in the world;
- ❖ general scientific methods - modeling, designing, connecting, analyzing, synthesizing, summarizing, systematizing, classifying;
- ❖ empirical methods - observation, questionnaire methods, pedagogical diagnostics, monograph research, statistical processing methods and qualitative analysis of experimental results;
- ❖ mathematical methods.

The value of mobile applications in the field of education is increasing due to the following conveniences that it provides:

- ❖ Collaborative work of students working on assignments during class or outside of class;
- ❖ File sharing;
- ❖ Distance education organization and interaction of parents;
- ❖ Mobile education should not depend on time;
- ❖ Expanding the boundaries of learning;

Mobile applications are components installed on mobile devices (phones, communicators, smartphones, etc.) under a specific platform (Android, iOS, BlackBerry, HP webOS, Symbian OS, Bada from Samsung and Windows Mobile), which connects to a mobile server and controls the user interface. .

*Three of the most popular OSes are listed below:*

1<sup>st</sup> place - Android system (78%) - this operating system is from Google. It is distributed free of charge, the requirements for the technical parameters for the mobile device are minimal. These features have made it the most popular of the major smartphone manufacturers.

2<sup>nd</sup> place - Apple iOS (15.2%) - this operating system is completely closed, because you have to pay for each product. This platform is distinguished by the high quality and stability of its work - this is undoubtedly its advantage. In addition, it is easy to use. Another priority is security. All apps in the Apple Store are thoroughly vetted. The disadvantage of this system is that it is only available on Apple devices.

3<sup>rd</sup> place - Windows Phone (2.5%) - this system is produced by Microsoft. It is not as popular as the systems mentioned above, but many users believe that WP can compete with the leading companies. The interface is very convenient and unusual: instead of widgets, there are live tiles. They display information on the screen without opening applications (for example, calendar, weather, etc.). The main advantages are the speed and smooth operation of the interface.

Nowadays, there is a huge variety of mobile applications, which are divided into educational and non-educational types. It is safe to say that the popularity and development of mobile learning practice is due to its following characteristics:

- ❖ the concepts of space and time are not important in mobile education. That is, mobile education is an opportunity to receive education anywhere and at any time through mobile devices;
- ❖ the use of mobile technologies for educational purposes is a unique tool that increases the educational motivation of students;
- ❖ mobile education is a way to introduce innovative educational forms and methods, rather than simply placing educational materials on small screens;
- ❖ mobile education incorporates elements of gamification;
- ❖ the exchange of information between the participants of the mobile learning process takes place rapidly;
- ❖ the flexibility of mobile devices provides an opportunity to monitor the level of knowledge and mastery of materials of a large number of learners at the same time, while maintaining an individual approach to each of the learners;
- ❖ mobile education collects and visually presents a variety of multimedia educational materials;
- ❖ mobile education is a unique means of skill development and improvement in the field of professional and ICT.

A teacher can approach the process of using mobile technologies in the design of traditional day-time classes of education in different ways. They grouped the methods of using mobile devices in the educational process as follows: multimedia education - for displaying web resources (audio files, video films, graphics, maps and images); providing quick access to educational sites, resources, references, dictionaries; to ensure communication during the educational process (SMS messages, twitter, telegram, web seminars, etc.).

Yu. Shishkovskaya, talking about several ways of using mobile devices for educational purposes, listed the following:

*First*, independent education. Based on mobile educational technologies, the following general pedagogical principles are created: ease of use and simplicity of materials, interactivity, and special applications that allow self-management and self-assessment.

*Secondly*, the ideas of m-learning can be used equally in the traditional educational process in schools, as well as in higher education institutions.

*Third*, mobile learning can be an effective complement to distance or corporate training courses.

The introduction of mobile technologies into the educational process has the following advantages:

- ❖ it is possible to study and learn at any time, in any place (Mobility);
- ❖ the ability to visually present educational materials in various forms, full of multimedia possibilities such as audio, video, picture, graphics (Multimedia);
- ❖ mobile education is often implemented in the form of a game (having a gamification character);
- ❖ Availability of participation monitoring (Participation monitoring);

- ❖ motivational nature of the educational process; uniform control of the education level of students;
- ❖ acceleration of information exchange between the participants of the educational process;
- ❖ flexibility of mobile devices in individual approach based on personal psychological and physiological characteristics of learners (Individual approach).

**Besides:**

- ❖ no need to carry heavy books with you. All necessary textbooks, books and manuals are at hand at any time;
- ❖ mobile books do not get lost, torn or worn;
- ❖ mobile textbooks are very convenient to use, and when using them, you can set the settings to suit yourself, that is, view the text in a larger font, enlarge the images, set bookmarks in the necessary places, continue reading from where you left off etc.;
- ❖ mobile textbooks and manuals have the ability to help in independent study of the subject and strengthening of knowledge.

Technologies that create this type of mobile books include:

- ❖ Android Book App Maker;
- ❖ Flip PDF Professional;
- ❖ Book Creator;

The following mobile communication environments and devices can be used for mobile education:

- ❖ Smartphones, iPhones, tablets;
- ❖ mp4 players, Netbooks, GPS navigators, etc.;
- ❖ Portable computers (laptops, netbooks).

Traditional education practitioners often say that the use of smartphones, tablets and similar mobile devices in the educational process has a negative effect on the success of learners, completely diverting their attention from the lesson. 'emphasized. But by the 21st century, on the contrary, the growth and development of technology offers teachers a unique opportunity to achieve scientific achievements in a new and innovative way, using the advantages of devices that were once interpreted as distractions.

At this point, it is worth saying that now, teachers do not have to constantly fight to attract the attention of learners, through the use of mobile technologies in the educational process, which automatically encourages their participation. A new learning environment is created that encourages learning and always working on oneself. Many practitioners and industry experts believe that in the future, mobile education will become a new standard in the field of education and will rise to the level of a trend.

**Conclusion.**

In conclusion, it can be said that the use of mobile applications in the teaching of subjects opens wide opportunities for teachers and students. Organizing the educational process in educational institutions on the basis of mobile applications creates a number of innovations related to the rapid updating of educational materials based on the latest advances in science.

Teaching education on the basis of mobile applications leads to greater individualization of education. As a result of this, as a result of the student's independent search for himself, the

ability to work independently develops, and mastery indicators develop. Control works included in mobile applications are of practical importance as they monitor the student's learning process.

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