MOBILE LEARNING METHODS

Juraev Ilhom Isxokovich

Bukhara State Pedagogical Institute

Teacher of the Department of Exact Sciences

E-mail: jurayevilhom@buxdpi.uz

Abstract

This article helps to gain knowledge about mobile communications, mobile applications, their role in the educational process, principles, models of educational, technical, methodological, and software for mobile education. The article mainly provides specific information about how students use mobile communications, educational platforms of certain mobile applications, as well as how to use and independently create electronic resources in them. The purpose of teaching methods based on mobile technologies, the conditions for their use, the activity of the teacher and students, the expected result and the criteria for its achievement are also discussed.

Keywords: Android, interactive method, mobile platforms, information technology, applications, object, animation, graphics, teaching methods, mobile education, mobile technologies, mobile teaching methods.

Introduction

We know that today we see the role of mobile communication tools and applications not only in the education system but in many fields and the demand for them is high. We can monitor and manage our activities from anywhere using mobile applications and the mobile system as a whole. A few years ago we did everything on paper. With the passage of time and the development of computer technology, this activity was electronicized, that is, carried out with the help of computers and information technology. Of course, due to this we have reduced the amount of work several hundred times and created convenience. This system still works and shows its results. After the introduction of the Android system to the information technology market, these tasks were reduced several times. Because Android has proven that it can do many things that a computer can do and has taken its place at the top in a short period of time. The advantage is that mobile devices are easy to carry, powerful, affordable, convenient, do not require choosing a place of work, and other features. Modern information and communication

technologies, including mobile and cloud, create new opportunities for interaction between participants in the educational process in all educational institutions. Mobile technologies are technologies based on the use of mobile (portable) devices and wireless communications that provide access to the global network. Mobile technologies influence teaching methods in all educational institutions, as they direct the mechanism of the student's movement towards the goal and provide new tools for organizing the activities of the teacher and student. Mobile education is a type of electronic education along with distance education. Improving the teaching of programming, mobile applications and similar subjects in all educational institutions, increasing the effectiveness of education through the widespread use of modern pedagogical and information technologies, non-traditional and interactive methods in teaching science is of positive importance. For this reason, the development of a set of educational and methodological materials, especially in the form of games that are suitable for the content of training, and their use in the educational process can serve as a basis for inclusion in the list of current problems of education. younger generations.

According to A. Kuklev, the leading didactic opportunities of mobile education include: the ability to implement new concepts necessary for modern education; that it can be carried out alongside traditional teaching to increase student engagement in learning and task completion; distance tutoring (active acquisition of knowledge, support of talents and abilities); mastering new areas of knowledge and acquiring new skills (technology, software, Internet, etc.); open access to educational resources at any time and anywhere at the student's request; implementation of gaming mobile education using portable game consoles; audiovisual presentation of information based on web 2.0 technologies, printing of educational materials in a hypermedia version; formation of information culture among students; quick use of interactive translation and learning a foreign language; quick provision of information and references; quick interactive polls and voting; organizing joint telecommunications projects and exchanging ideas with participants at any time and regardless of their location.

The widespread use of mass education in the education system today shows that the demand for electronic textbooks and mobile applications has increased. Our students conduct lessons online and offline on personal computers or mobile devices. At the same time, the article on creating mobile applications in education will help you quickly, easily and effectively master the Java programming

language and special Android components in the Android environment. Here are the options for mobile learning users:

✓ students working together on assignments during class or outside of class;

✓ file sharing;

✓ organization of distance education and interaction between parents;

✓ mobile education should not depend on time;

✓ expand the boundaries of learning.

Mobile learning is increasingly being used to deliver audio content to students, text messaging, surveys, text chats, note-taking and review.

The following requirements also apply to the content of mobile education:

✓ **Conciseness** – mobile learning components should be short in duration, taking into account possible interruptions in communication.

✓ **High level of microergonomics -** small size and high quality sound and image on a small screen. Small file sizes ensure download speed.

✓ **Ubiquity** – mobile learning materials can be taken with you anywhere, regardless of location. Wide coverage of mobile operators and mobile devices makes it possible to use mobile education services anywhere and at a time convenient for you.

✓ **On-demand access** – By their nature, mobile devices provide learners with on-demand access to relevant content, maximizing its ability to be delivered at the right time.

Mobile learning is not just a theoretical possibility, it is a reality. Participants and teachers from different countries will have the opportunity to use a wide range of educational resources using mobile devices, discuss information and share information with other students. They can also get help from colleagues and teachers and establish effective communication.

When developing mobile applications, the view is created separately and then the application code is written accordingly. We use the .xml language to create the interface part of the program. We can say that the syntax of .xml is close to the html language. So for someone who knows HTML, it will be easy to learn .xml. In Android, each form (layout) has and is controlled by .xml and .java files. Using the Java programming language on Android provides several options to the developer. The reason is that there are many libraries written in the Java programming language for Android. Using ready-made libraries, you can create a program rich in animation and multimedia. Based on the above, if a programmer writes the program code himself, he may spend a lot of time and fail to achieve the

expected result. When creating mobile applications in the educational process, the use of mobile applications created when teaching a given subject or subject will significantly increase the effectiveness of the lesson.

The use of each teaching method in didactics in the educational process has different effectiveness depending on its specific features and the didactic tasks being solved, regardless of the content of a particular subject. This, in turn, creates the need to develop a system of teaching methods based on mobile technologies in educational institutions. By a system of mobile educational methods, we understand a set of teaching methods that complement each other and have a single technological basis for solving various didactic problems, that is, mobile technologies. Mobile learning methods can be divided into types used in classroom teaching and classroom teaching. This paper discusses teaching methods based on mobile technologies used in practical classes in a classroom setting.

Visual programming method. Visual programming tools allow students to develop algorithmic skills based on their existing knowledge. The use of a mobile platform when developing programs is a motivating factor for students, as it reflects the development trend in the field of information technology. The purpose of the method: to develop algorithmic thinking and programming skills, to increase the level of motivation of students to learn the basics of programming. Conditions for using the method: availability of computer devices (mobile or desktop) and access to the Internet. Teacher's activities: educational tasks (or change them taking into account the features of visual programming for mobile devices); Providing various assistance and advice to students in the process of independent work and checking assignments. Student activity: performing practical work in a visual programming environment, where the target platform is a mobile device. Method of monitoring the result and criteria for achieving it: performing independent and creative tasks; use of skills acquired in students' design and research activities.

Mobile search method. Searching for information and working with its various forms is one of the most important skills that any modern specialist must master. Today, mobile devices with access to the global network provide additional opportunities for searching for information, since in addition to text search, voice and image search queries can be used. The purpose of using the method is to ensure mastery of skills in working with information and communication technologies,

assimilation of new educational materials. Conditions for using the method: use of Internet resources and search services. Teacher's activity: creating problem situations that require searching for additional information to solve problems. Student activities: choosing the best search methods and services; find a solution to a problem or issue. Method of monitoring the result and criteria for achieving it: a study of mobile search technology.

Mobile design method. Mobile devices and cloud technologies allow students to organize their project activities at a new level, as they always provide new tools and a convenient organizational form. For example, most smartphones have a compass, navigator, map, camera and other tools. In turn, cloud data storage allows for rapid exchange of information between students and teachers. In addition, the development of mobile applications is of great interest to students, since the scope of their application is quite wide. The purpose of using the method is to perform individual and group design and research work. Conditions for using the method: the presence of mobile devices as a target platform, as well as mechanisms for remote interaction between students and teachers. Activities of the teacher: organization of project and research activities of students; helping students achieve the goals of project work. Student activities: analysis of design and research tasks (within individual and group work). Method of monitoring the result and criteria for its achievement: participation of students in the development of research projects related to mobile technologies.

Podcast method. Video recording and screen recording methods allow students, on the one hand, to become familiar with software products at the level of individual development, stop and return in problematic situations, and on the other hand, create their own reports in the form of podcasts and to demonstrate creativity. The use of podcasts adds variety to the learning process and thereby increases students' motivation to master the lesson content. The purpose of the method is to develop students' skills in working with software products and working with software. Conditions for using the method: universality of mobile devices with video recording function; students have video and filming skills; the ability to use the cloud environment to publish videos. Activities of the teacher: distribution of tasks to be completed in the form of podcasts; monitoring the progress of work performed and student behavior. Student activities: completing assignments and preparing a report in the form of a video or screencast. Method of monitoring the

result and criteria for its achievement: students' use of podcasts in the context of studying software products; the use of cloud screencasts and videotapes as forms of homework related to the study of software products.

Cloud research method. The uniqueness of this method lies in the fact that students study any educational topic or problematic issue together or individually in order to speak to the students in the audience and prepare a lecture. Mobile and cloud technologies make it possible to create collaborative electronic documents and presentations that can be edited simultaneously by several students and teachers. When organizing group work within a team, each student studies his part, collects the necessary material, places it in his cloud document, and then, based on the collected parts, prepares a general report for the group. Due to the time and place of independent access to developed cloud materials, the cloud research method is used in classroom and non-classroom training. The purpose of the method: to organize mutual cooperation of students to solve educational problems. Conditions for using the method: students have cloud materials and a computing device with Internet access. Activities of the teacher: preparing cloud documents and sending links to students, preparing educational assignments for implementation in the cloud environment. Student activities: performing a practical task in a cloud environment. Method of monitoring the result and criteria for its achievement: active use of shared cloud resources in the process of solving educational problems.

In conclusion, we note that the use of mobile applications when teaching subjects opens up wide opportunities for professors and teachers. This scientific article reveals in detail the capabilities of modern programming languages and their methodological aspects in mobile applications created on the basis of working with them. Based on the created software, it is possible to increase the interest of students in science and the effectiveness of education. It is considered appropriate to introduce electronic educational resources created on the basis of new information and communication technologies into the educational process of all educational institutions if they provide new opportunities for solving specific didactic problems.

REFERENCES:

1. Starichenko B.E. Conceptual basics of computer didactics // Science Book Publishing House, Yelm, WA, USA. 2013.

2. Куклев В. А. Методика мобильного образования / Ульяновск: УлГТУ, 2006. – 254 с.

3. Жураев И.И. (2021). РОЛЬ МОБИЛЬНЫХ ТЕХНОЛОГИЙ В ПЕДАГОГИЧЕСКОМ ПРОЦЕССЕ . ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.Uz), 7(7). извлечено от https://journal.buxdu.uz/index.php/journals_buxdu/article/view/3674

4. Jo'rayev, I.I. (2022). IMPROVING THE METHODOLOGY OF TEACHING "COMPUTER SCIENCE" ON THE BASIS OF MOBILE SOFTWARE. EPRA International Journal of Socio-Economic and Environmental Outlook (SEEO), Volume: 8 | Issue: 11| November 2021 | SJIF Impact Factor (2021): 7.426 | Journal DOI: 10.36713/epra0314 | Peer-Reviewed Journal, 9-10. https://eprajournals.com/IJSA/article/6170/abstract

5. Sayidova N.S., Juraev I.I. (2020). The process of higher education system and in-service training based on webinar technologies. European Journal of Research and Reflection in Educational Sciences, 8 (12), Part III, 20-26. http://www.idpublications.org/wp-content/uploads/2020/12/Full-Paper-THE-PROCESS-OF-HIGHER-EDUCATION-SYSTEM-AND-IN-SERVICE-TRAINING-BASED-ON-WEBINAR.pdf (http://www.idpublications.org/ejrres-vol-8-no-12-2020-part-iii/)