

Perspectives of Introduction of the Mobile-Assisted Language Learning (Mall) Technology

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ABSTRACT

Present article addresses methodological and technical (instrumental) aspects of creation and implementation of mobile-assisted learning, which is oriented to the process of foreign languages learning. We provide the interpretation of the main definitions of mobile-assisted learning, as well as propose recommendations for using mobile devices in education for improving the language competence.

In present article we note that the means of mobile communication possess a significant potential in the education process. We explore the perspectives of efficient implementation of mobile devices in foreign language teaching.

We conducted the analysis of the capabilities of various modern program platforms and mobile devices. We present a practical argumentation for the efficiency of foreign language learning with the use of mobile (portative) devices and IT-devices with the implementation of Mobil21 platform in the process of mobile-assisted learning technology realization.

KEYWORDS

Elective disciplines, role, means, professional competence, students, future teacher, formation of professional competence.

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Introduction

The main goal of language learning in college students is the development of professional language competence of a foreign language specialist. In any foreign language learning method a significant role in organizing efficient development

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of professional language components belongs to instrumental (technical) means. In general, technical means of learning allow completing and varying the types of class- and extracurricular verbal activity. Development and introduction of innovative technologies is a means of foreign languages teaching for more efficient perception and acquisition of the necessary volume of the educational material by the students. The efficiency of electronic learning means is related to the opportunity to stimulate all types of verbal activity. Among technical means, which exist in the educational institutions, the most common ones include computers with multimedia programs, special linguaphone equipment, video, etc.

However, modern scientific achievements are not often used to full extent in practice. Many colleges are not yet sufficiently supplied with such technical means, as linguaphone equipment, video- and computer classrooms, etc. One of the reasons of such situation is relatively high cost of equipment and software. Such educational institutions lack video-courses and multimedia computer programs. And in case of their presence they are not sufficiently supplied with methodic guidance papers, which decreases the efficiency of their implementation in the foreign languages learning process.

Along with that, cellphones, smartphones and tablets are intrinsic parts of human life. Currently almost every person has mobile devices; it is a convenient tool for accessing relevant information.

Analysis of the studies (Attewell, 2005; What is m-learning? Tribal's Digital Learning Studio [On-line]; Sharples, 2000) demonstrated that the integration of ICT in the learning process would allow to increase its efficiency due to the rational organization of education process. One of the perspective research directions in the ICT field is the integration of mobile ICT, which is directed at supporting the learning process and professional training of students, into the education process. Due to the fact that mobile technologies gain more and more supporters worldwide, not only among students, but also among teachers, it is valid to use them in the education process along with the traditional ones. Studies, conducted in the USA, showed that both students and teachers react positively to the portative computers integration into the education process. Education of such students becomes more motivated and they spend more time on learning and communication in a group and with the teacher (Crow, 2010).

One of the prospective directions in ICT use is the support of traditional education, which implies organizing the education in accordance with the combined learning model. Combined learning is the education process, in which traditional technologies are combined with innovative technologies of electronic, distance and mobile learning with the goal of creating balanced combination of theoretical and practical components of learning process (Ally, 2009).

Methodology of the study

The goal of the present article is the analysis of the capabilities of the mobile-assisted learning technologies and the development of mobile learning means in the context of studying foreign languages. The reason is that this learning method allows to attract wide audience, satisfying the requirements of modern students and maintain their interest, while being an actual motivational tool. The implementation of the aforementioned means affects the quality of knowledge, improves their level and allows to apply them confidently in



everyday life, which is the main goal of the teacher. The main advantage of using mobile devices in learning is the fact that their implementation does not have time- and location limitation, i.e. modern gadgets might be used in any time and in any place, which facilitates learning and improving of the language.

Analyzing more thoroughly the ways of using modern mobile devices in learning-educational goals during the lessons and outside the classroom, we would like to note that, first of all, it's very useful to set up the main menu in the foreign language; it allows to enrich the vocabulary and implement it in the everyday life.

Secondly, there are also wide opportunities for the real-time communication. Such applications as Skype and Viber provide the opportunity to develop and practice speaking skills with the native speakers and correct one's own pronunciation. It also promotes the development of writing and enrichment of the vocabulary, especially the parts that are not studied with a teacher (slang) but is very interesting for modern students and has its place in everyday life.

The problem of using technical means and didactic materials in education is not new; the questions of using cell functions of mobile devices in education process occurred as early as in the 80th of the XX century. With the mobile technologies development the need and the capacity of fast access to information, especially the one in foreign languages, increased as well, because the mobility of the society and the capacity of mobile devices also increased.

Owing to this there is particular significance of the search for new approaches towards organizing education process and creation of education materials and technologies, which would account for the capabilities of mobile devices.

The main Concepts

We will define mobile informational-communicative technologies (further on – MICT) as complex of personal instrumental means, software and also means, tools and methods, which allow performing the activity related to obtaining, storage, computer analysis and reproduction of text-, audio-, video- and graphical data in the conditions of operative communication with the Internet resources, which are aimed at supporting personality-oriented learning (Yannick, in Fong & Wang, 2007).

In recent years there have been hot debates about the issue of how to define what the mobile learning is. Difficulties in reaching an agreement are partially related to the fast development of mobile learning.

European Guild for Electronic Learning defines it the following way: it is any activity, which allows people to be more productive in consuming, interacting or creating the information by the compact digital devices, if a person performs these actions on a regular basis, has sustainable connection and the device fits in a pocket or purse (Kukulaska-Hulme & Traxler 2005).

Therefore, the term “mobile device”, or mobile learning (m-learning), implies using mobile (portative) IT-devices (PDA-computers, cell-phones, laptops, tablets, iPhones, etc.) in the education process.

Moreover, Mobile-assisted language learning (MALL) itself is the technology of language learning with the implication of the aforementioned mobile

(portative) IT-devices. MALL is the sub-type of mobile and computer learning of languages (CALL) (Caudill, 2008).

The authors (Swan, Hooft, Kratcoski & Unger, 2005) define three main directions in the mobile ICT implementation:

- 1) for organizing life-long learning;
- 2) for studying mathematical models;
- 3) for analyzing the results of learning.

Using mobile ICT in the process of learning advanced mathematics in technical college provides the following opportunities:

- to overview the educational material before creating module- or examination work;
- to overview lectures material before the practical lessons;
- to receive reviews of one's own answer during the lesson;
- to maintain the connection with the teacher and other students;
- to receive a teacher's consult;
- to do the course tasks in the mobile mathematical environment.

The review and analysis of publications on the topic of mobile learning demonstrates that in developed countries modern mobile devices are used in the field of education, management, organization of teaching for applied specialists, as well as technical means of education support for school and college students. The increase of their use originates from the beginning of XXI century in various areas of social life as a reaction for satisfaction of human need in movement.

The attention towards mobile-assisted learning increases significantly in colleges, which is confirmed by the increased amount of scientific publications and international scientific conferences (e.g., mLearn, IMCL), scientific journals and books (Brandl, 2002; Valarmathi, 2011).

According to the researchers, the Internet as a resource is able to enrich and expand the opportunities for language learning. This additional functionality of the Web will support the creation of interactive web-pages for language practice (Miangah & Nezarat 2012).

The means of MICT learning might be divided into software and hardware. We will analyze them further.

Analysis of software tools of mobile informational-communicative technologies of learning

Blackboard Learning System is a virtual learning system and a system for managing the courses, which is aimed at supporting combined behavior. The functions of Blackboard Learning System include:

- maintenance of the connection (chat, e-mail, workbooks) for exchanging the opinions and messages between teacher and students, as well as between students;
- content: support of the learning process by the module structure of the course, possibility for students to receive the tasks and evaluate them, possibility to integrate the files with didactic materials for creating a library;



- the registration function: all of the learning process participants obtain the information about other participants of the course, about their presence online, etc.;
- automatic informing of the students about the changes in education process.

In Blackboard Learning System study materials might be created as PDF files, Word documents or PowerPoint slides.

Mobile ELDIT is a mobile system of learning support, which was developed in Italy with the aim of supporting language learning process. Mobile ELDIT consists of the dictionary, a set of texts and test tasks. A similar mobile system of learning support for creating study materials for language learning is the MobiLearn system.

Amadeus LMS Mobile is a mobile application for the open-source platform for electronic learning – Amadeus. The development of this application began in 2008. Amadeus consists of independent courses, which contain tests and means for evaluation, demonstration of multimedia products and reference material with the option of printing.

The students have the opportunity to learn online by conducting discussion forums and chats or by writing e-mails. Teachers can change the course content, evaluate the knowledge and monitor the pace at which the students work with the material.

Mobl21 is a mobile-assisted learning platform, which might be used both by teachers for creating study materials and the students for creating notes of the lessons.

Mobl21 allows:

- creating study materials in the form of multimedia educational textbooks;
- a student gains access to the materials at a convenient time and in any place;
- a student may review the material in a pace that is convenient for him;
- a teacher may manage the content and users of the learning support system;
- a student may do a test and participate in quizzes.

LearnCast is a platform for creating and publishing mobile study materials. The opportunity to create diverse study material allows using this platform for transferring the study materials to students, as well as for qualification increase in the factory workers.

Access to the system is possible from any mobile device, which provides the possibility of connecting to the Internet. After the registration users can download the necessary study materials.

LearnCast allows to create lesson notes, tests and quizzes; conduct learning monitoring and create reports; communicate with students by chat, e-mail and SMS-messages and organize video-conferences.

SumTotal ToolBook is a software, which was first introduced in 1990 as a means of electronic learning, which has significantly evolved over the past 25

years and now allows to develop interactive study materials quickly by using the built-in templates, to create tests and evaluate students.

Built-in SmartPages and SmartStyles templates provide the possibility to create professional courses for electronic learning, independently choose a prototype of the created course and its design and create tests with multiple-choice questions with single or multiple correct answers or open-type questions. Study material of the course can contain text, audio or video-information.

Provided feedback allows maintaining the connection between students and teacher, both directly during the learning and for receipt of the test results.

The possibility to import Microsoft PowerPoint files into the ToolBook provides the opportunity for creating presentations of study material, which makes the learning process interesting and better for perception.

ToolBok software product is compatible with mobile devices, which work on Microsoft, AppleIOS and Google Android operating systems. The defining qualities of ToolBook as a support means are:

- the option of dynamic generation of study material in dependence from students' location;
- the option of using various mobile devices.

Analysis of hardware tools of mobile informational-communicative technologies of learning

All modern hardware devices, which operate in any of the operating systems indicated in [Table 1], have free support of the functional language options without additional software.

Table 1: Modern mobile operating systems of the devices and their options

| Options/OS | Android | BlackBerry | iPhone | Nokia S60 | Windows CE |
|--|---------|------------|--------|-----------|------------|
| Translation from different languages | + | + | + | + | + |
| Has language dictionaries | + | + | + | + | + |
| Reads foreign scripts | + | - | + | + | + |
| Transforms text into speech | + | - | + | - | - |
| Has voice-operated dial | + | - | + | - | - |
| Saves the history | + | - | + | + | + |
| Conversations in interactive mode are possible | + | - | - | - | - |

We define functional capacities as the services, the OS and the design of which allow their users: to translate words, phrases, paragraphs or full text; the amount languages and directions of translation; the option of listening to words, phrases or text; different types of input interface – text, sound, etc. The general characteristic of such systems is the fact that it is possible to install free applications on the platforms of the aforementioned OS, such as Google Chrome browser and Google Translate program.



The leading methodic principle in language learning is the principle of communicativeness, which implies the creation of learning process as a model of real communication process. Communication is a process of information exchange (facts, ideas, opinions, emotions, etc.) between the people that interact. Communicative situations, which are used in foreign languages learning, have to reproduce typical situations of the real life in the correspondent field of communication. An important factor, which influences the communication process, is organization of interaction (dialogue) between people, i.e. the interactive function of communication (exchange of actions) (Sandberg, Maris & De Geus 2011).

The function of interactive interlocutor-user can be, for example, given to the Google Translate program, a browser and the communicative capacities of operating system and electronic devices. Google Translate is a free application, which can be installed on any of the abovementioned devices.

Google Chrome browser, installed on the OS Android mobile devices, has the option of accessing the Google Play applications in 30 languages and has new functions added, including the following: the user can request a desktop version of the web-site in case if he does not want to view the mobile version; the user can add the bookmarks for fast access from the desktop, which provides faster transition to the favorite web-sites; he can choose his favorite programs for processing the links, opened in Chrome. Android software has settings for proxy for Wi-Fi access. There is an option of using Chrome with the proxy system in Android settings and connecting to the Internet via Wi-Fi network (Huang & Sun 2010).

Due to the fact that computers and Internet became necessary educational tools and more portative and accessible, more efficient and user-friendly devices appeared, new possibilities for expanding the participation and access to ICT are opening, particularly on the Internet. Mobile devices have lower cost than desktop computers and are a cheaper tool for accessing the Internet.

If you take into account modern capacities of mobile devices, tablets and portative personal computer, it is necessary to note that there is an option of using mobile Internet access with the same functionality as in desktop computers.

Implementation of technical tools in the process of foreign language learning provides the possibility of: creating a natural verbal environment as a significant factor in foreign languages learning; increasing the students' interest in learning foreign languages; using the differential approach to learning; conducting the intensification of education process.

The efficiency of using hardware tools is defined primarily by the following aspects: parameters and capabilities of the hardware and its use in certain conditions; quality of didactic material; teacher and students' abilities to use the hardware tools and didactic materials.

Uncertainty about the copyright for the electronic data might complicate the development of the information, suitable for reproduction from the mobile devices. Mobile applications development would require the increase of teachers' qualifications or recruitment of specialists. Naturally, this would call for special software, which would be used on different communicator platforms.

Using the existing software and their modifications and creating new materials as learning tools allows creating the necessary database of the materials on electronic media in the college libraries and in the departments of foreign languages. It is possible to upload any text and audio program in a cell-phone. It is possible to do the following types of work from a cell-phone: 1) studying the program texts, 2) learning the vocabulary, 3) learning grammar constructs, 4) listening to audio materials for repetition, memorizing and reproduction for the classroom or individually, through earphones, 5) reversed translation, including synchronous translation.

By creating video-audio library on the compact disks at a foreign languages department, it is possible to supply the students with program material on electronic media for class- and extracurricular activity, both for individual and group work.

The quantitative factor in a cell-phone has to correspond with the students' capabilities for its memorizing. The texts on different topics have to be rather small – from ten to twenty sentences, rich in program vocabulary and grammar constructs. Grammar material should be systematized to the minimal possible amount and presented in models and tables.

Introduction of mall technology at the department of foreign languages of a university

In order to implement the MALL technology we used Mobl21 platform, which was created by the developers as an Internet-product for free distribution.

The participants of the approbation of the new technology were 60 senior year students.

It is necessary to point out that the MALL technology implementation increases the education results and students obtain additional competencies in working with information, which, at the same time, increase motivation. A rather significant result is the development of competencies in planning and organizing one's own learning strategy and development of skills for autonomous education.

By developing study materials in the form of multimedia educational textbooks, a teacher sets the following goals:

- firstly, development of educational and methodic support, which includes main and additional study material;
- secondly, definition of exercise types for after-school work. Thus, language exercises have to be done independently, out of class, because they require a lot of time and, moreover, senior-year students have sufficiently developed skills for working with different types of exercises. Students do these exercises on their own and the teacher only models the education process, provides recommendations for doing the tasks and performs the control;
- thirdly, students' self-control. The Mobl21 platform might become a motivating factor and create a logical structure of all stages. Upon mastering the performance of exercises, Mobl21 users are aware of the regular control of their work by the teacher, who has already checked the presence of completed tasks before the beginning of the class and knows which students have worked at home and is ready for productive class work. And that becomes a motivating factor for the students, because they understand the aim, which are set for them, and the ultimate goal of the lesson.



Observation of the students' activity during the process of the MALL technology implementation and conduction of interviews with them demonstrated that the use of methodic support of the English language learning process was psychologically comfortable and facilitated the actualization of their learning potential. Independent work with the use of personal mobile devices led to the development of their cognitive field - mobilization of attention and improvement of perception. The students turned into initiative actors and controllers of their own learning activity.

Survey, which was aimed at the definition of students' interest towards using the MALL technology, showed a rather high level of both interest and evaluation of significance.

Conclusions

We analyzed methodological, organizational and technical (instrumental) aspects of constructing and implementing interactive communicative education technologies, which are oriented to the process of foreign languages learning. We provide the explanation of the main ICT definitions, their structure and recommendations for using mobile devices in learning for the language competence increase.

It is possible to note significant perspectives in using individual mobile ICT in foreign languages learning, their capacity to activate all types of verbal activity and additional opportunities for individual work.

Using mobile ICT in the learning process leads it to a new quality and reflects the modern tendencies in education to the fullest by providing constant access to study resources at any time and in any place and by being a new inventory for the development of a human of informational society, who is capable of mobile-assisted life-long learning.

The problem of creating highly efficient methodic materials falls on the teachers. Such materials have to be highly saturated, didactically and methodically developed for the easiness and quickness of their acquisition and to have a goal of constant language interaction. By creating a video-audio library on compact disks at each foreign languages department, it is possible to supply students with program material on electronic media for class- and out-of-class individual and group work.

Therefore, the proposed approach towards organizing foreign languages learning with the mobile ICT implementation not only continues the traditions in this direction, which were established earlier, but also expands them by using fundamentally new possibilities of mobile platforms.

References

- Ally, M. (2009). *Mobile Learning: Transforming the Delivery of Education and Training*. Athabasca, AB: Athabasca University Press.
- Attewell, J. (2005). *Mobile technologies and learning: A Technology Update and mLearning Project Summary*. London: Learning and Skills Development Agency.
- Brandl, K. (2002). Integrating internet-based reading materials into the foreign language curriculum: from teacher- to student-centered approaches. *Language Learning & Technology*, 6(3), 87-107.
- Caudill, J.G. (2008). The Growth of m-Learning and the Growth of Mobile Computing: Parallel developments. *The International Review of Research in Open and Distance Learning*, 8(2), 1-13.
- Crow, R. (2010). Switching Gears: Moving from e-Learning to m-Learning. *MERLOT Journal of Online Learning and Teaching* [On-line], 6(1). Available: http://jolt.merlot.org/vol6no1/crow_0310.htm.

- Huang, C., & Sun, P. (2010). Using mobile technologies to support mobile multimedia English listening exercises in daily life. In *The International Conference on Computer and Network Technologies in Education (CNTE 2010)* [On-line]. Available: <http://cnte2010.cs.nhcue.edu.tw/>.
- Kukulska-Hulme, A. & Traxler, J. (Eds.) (2005). *Mobile learning: A handbook for educators and trainers*. London: Routledge.
- Miangah, T.M., & Nezarat, A. (2012). Mobile-Assisted Language Learning. *International Journal of Distributed and Parallel Systems (IJDPS)*, 3(1), 309-319.
- Sandberg, J., Maris, M., & De Geus, K. (2011). Mobile English Learning: An evidence-based study with fifth graders. *Computers and Education*, 57, 1334-1347.
- Sharples, M. (2000). The design of personal mobile technologies for lifelong learning. *Computers & Education*, 34(3-4), 177-193.
- Swan, K., Hooft, M., Kratcoski, A., & Unger, D. (2005). Uses and Effects of Mobile Computing Devices in K-8 Classrooms. *Journal of Research on Technology in Education*, 38(1), 99-112.
- Valarmathi, K.E. (2011). Mobile Assisted Language Learning. *Journal of Technology for ELT* [On-line], 1(2). Available: <https://drive.google.com/file/d/0BwOKc8FiJVqpZmE0NGM4NTctMDgzNC00YTlWlWlOZTgtMjc5MjZmZWYzM2U2/view>.
- What is m-learning? Tribal's Digital Learning Studio [On-line], Cambridge, United Kingdom. Available: <http://www.m-learning.org/knowledge-centre/whatismlearning>.
- Yannick, J. (2007). M-Learning: A pedagogical and technological model for language learning on mobile phones. In J. Fong & F. L. Wang (Eds.), *Blended Learning* (pp. 327-339). Pearson.