

# The use of information technology in teaching a foreign language for specialists of agro-industrial complex

*Anna Kaneeva*<sup>1\*</sup>, *Tatyana Bagdasaryan*<sup>1</sup>, *Marina Tyutyunnik*<sup>1</sup>, and *Marina Nikushina*<sup>1</sup>

<sup>1</sup>Don State Technical University, 1, sq. Gagarina, Rostov-on-Don, 344000, Russia

**Abstract:** In modern society, the agro-industrial complex plays an important role in the economy of any country. That is why the education and training of specialists in the agro-industrial complex is a priority for the country. The use of foreign materials, technical equipment, and business contacts within the framework of concluding agreements with friendly countries require knowledge of foreign languages. The lack of knowledge of foreign languages is a hindering factor in the development of the agro-industrial sector. Modern technologies provide a huge range of opportunities to improve the level of knowledge of foreign languages. New technologies are becoming part of the educational process. The use of mobile devices in foreign language lessons is an urgent trend in the methodology, which requires new approaches and non-standard solutions. In this regard, there is a need to develop a methodology for using mobile technologies in English language teaching. The article describes the features of the introduction of mobile applications in the organization of students' work in teaching foreign languages. Electronic devices are increasingly being used as tools for education and language learning. As for interactive learning applications, students can use them to improve and control their skills in learning a foreign language. The features of mobile applications and their impact on the educational process are also revealed. Mobile applications are considered as a way of teaching vocabulary and grammar of the English language; the possibilities of practical use of mobile devices are analyzed. The purpose of this study is to review and describe English language learning using mobile applications. The article also deals with advantages and disadvantages while using apps in learning a foreign language, the essence and features of mobile applications in the educational process are considered.

## 1 Introduction

In the modern world, agriculture and the agro-industrial complex play a leading role in the most progressive economies of the world. Providing the country's population with food, as well as comprehensive assistance to countries and peoples in need of such support, is a

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\* Corresponding author: [m\\_anna7@mail.ru](mailto:m_anna7@mail.ru)

priority segment of the development of the economy of the Russian Federation. This is the reason why education and training of specialists and personnel for the agro-industrial complex is a priority both for the country as a whole and for higher educational institutions such as DSTU. The latter has historically developed as a leading university for the development of the agricultural sector of the country. In addition to fundamental knowledge and professional skills, the educational process should also concern such learning sectors as foreign languages. Knowledge of foreign languages is certainly not a priority for students of agro-industrial faculties. However, it should not be forgotten that in the modern world, interaction with different linguistic realities is carried out in any sphere of human activity, including agricultural.

Mobile phones and other digital devices have become an integral part of everyone's life in the 21st century. For students who were born and raised in the information society, the use of modern technology is a completely natural part of life.

The current stage of society's development is characterized by the significant influence of information technologies used in all spheres of human activity. Nowadays, informatization of education is an integral part of the development of society, because it cannot be denied that the concept of traditional education has undergone irreversible changes in recent years. E-education is becoming a promising area. Its distinctive feature is working with a large amount of information on a mobile device in a short period. It is likely that the future belongs to distance learning, not only due to the development of information and communication technologies, but also as the next stage in the development of educational systems. To implement this type of training, it is necessary to select special teaching technologies, that is, to use mobile learning. In this regard, the demand for the creation of high-quality Internet services and mobile applications is constantly growing.

In addition, for teaching and learning foreign languages in particular. Nowadays, there is a wide range of Internet services, mobile applications, platforms that implement the ideas of learning a foreign language. However, the enormous potential for expanding foreign language learning opportunities lies not only in their continuation on a mobile platform, but also in the implementation of fundamentally new learning models possible using mobile devices. Such models can be associated with the expansion of the foreign language-learning environment, the possibility of communicative interaction with native speakers and with the construction of new ways to expand vocabulary, master the grammar of the language. Since learning a foreign language is closely related to the independent work of the subject of the educational process, the key concept for our research is also the concept of independent learning of a foreign language [1]. Learning foreign languages for specialists of the agro-industrial complex using mobile apps has its advantages and disadvantages. Let's combine the advantages: the first is a psychological aspect. The main advantage of learning English language through mobile applications – individualization of the learning process. Independent learning of a foreign language using applications that are designed taking into account the individual characteristics of students will make it possible to rely on the strengths of the student and improve poorly developed processes. The next point is the methodological aspect. Mobile apps motivate students to learn English. In order for the educational process to be interesting and entertaining, mobile software developers use such a form of activity as games. Teachers are aware of the enormous role of practice in learning English.

To clearly understand the content of a phrase, it is necessary to change its language design several times. Mobile devices can also help with it. Next point is the technical aspect. Firstly, many phones have the ability to reproduce words, phrases and entire authentic texts. Moreover, students can record their own speech, listen to it and compare it with the pronunciation of a native speaker. Secondly, each type of activity can be represented as an animation or an image. We also highlighted some disadvantages. The student must have sufficient knowledge of computer science to use the app. The operation of mobile

applications depends on some extra factors, such as poor device specifications or poor data transfer speeds. In addition, communicative competence cannot be fully developed, since technical devices do not allow the practice of oral speech [2].

The modern theory of foreign language teaching divides language skills into receptive (passive, listening and reading) and productive (active, speaking and writing). Learning these four types of speech activity leads to mastering the communicative competencies of the language. Let us consider the types of speech activity in the context of using Internet services and mobile applications.

## 2 Materials and method

The research methodology is based on the use of structural and functional analysis when considering the innovative approach of "Dual processing". In this article domestic and foreign authors are considered. The research papers are devoted to the use of information technologies in teaching a foreign language to specialists of the agro-industrial complex. Besides, in this work, practical training material for students of the agro-industrial faculty was used

## 3 Results

Dual processing has the structure shown in Figure 1, the functional significance of each component of the method is given below:

### *Listening skills*

With the use of Internet services and mobile applications, the difficulties of perceiving audio material inherent in the traditional educational class are changing or practically disappearing. A huge number of suitable resources infinitely increases the variety of material that allows for an individualized selection of content that meets the unique needs and preferences of a person learning a foreign language. It is necessary to choose an interesting topic, and therefore increase the level of motivation. The level of motivation of specialists in agro-industrial complex is an important part in working on language skills. Online and offline players (video hosting sites such as YouTube) offer a function for adjusting the playback speed of a file, the ability to accompany videos with subtitles created automatically or compiled by content creators. Here, the practice of listening and reading takes place simultaneously. This process is called dual processing. It involves visual and auditory perception at the same time [3], which is shown in Figure 1:

### *Reading skills*

In the context of using Internet services and mobile applications, reading has acquired a different complexity. Unlike analog, authentic online text (from social networks, media resources, etc.) can be multicomponent and contain various hyperlinks, multimedia files that complicate perception and require certain skills and abilities of the reader. At the same time, authentic texts can serve as a springboard for improving digital literacy and adaptation in foreign-language visual Internet culture. However, specialized adaptive learning resources aimed at learning a foreign language by students with different levels of knowledge are most often "cleared" of the overwhelming volume of media files and hyperlinks. Due to this, the reader's attention is focused only on the material - the text, its vocabulary and grammar.

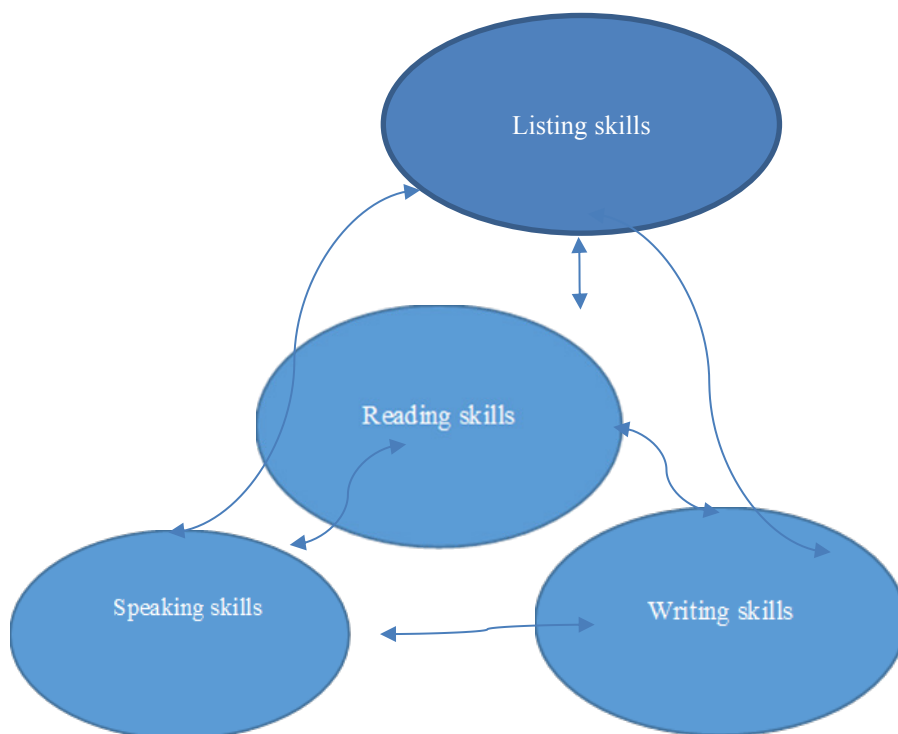
### *Speaking skills*

Speaking is an activity to express oneself in a situation or to express a sequence of ideas among people in a community by using verbal and non-verbal symbols in a particular language, situation, and context. With the creation and widespread use of Internet services and mobile applications, the concept of oral communication has gone beyond the boundaries

of face-to-face meetings and moved to a number of audio and video communication platforms. Nowadays, there are an impressive number of educational services that provide the opportunity to communicate online with both native speakers and professional foreign language teachers.

### **Writing skills**

It seems to us that this is the most difficult type of speech activity for foreign language learners. According to the researchers, writing causes difficulties, since the writing process itself stimulates thinking, forces students to concentrate and systematize ideas, develops their ability to analyze and criticize.. It has become much easier to develop writing skills in modern conditions, thanks to the possibility of correspondence with native speakers, or people trying to improve the level of the language they are learning through live communication [4].



**Fig. 1.** Dual processing

Let's consider educational Internet services and mobile applications from the point of view of integration into the educational process. In this paper, we classify them into the following groups:

- 1) as an addition to textbooks (with basic materials in the classroom or outside the classroom);
- 2) as an independent language learning;
- 3) as a distance learning form (they contain the main material for study, as well as communication with the teacher is provided).

In this paper, the following solution to the problem is proposed - an application whose functionality includes:

- Intuitive user interface
- An individual training program based on the level of language proficiency, available time and set goals.

- The application program implies a deep and detailed approach to learning the grammatical rules of a foreign language, working out all aspects of pronunciation, developing conversational skills in a foreign language and expanding the lexical stock [5].

The user must:

- register in the system to use the application;
- take an initial language level test to access relevant assignments and tests;
- set a learning goal, identify interesting topics, convenient time and days for classes, as well as the number of minutes allotted for lessons.
- to undergo an interim assessment of the acquired knowledge;
- be able to edit the profile;
- be able to edit the application settings (setting a convenient playback speed of sentences, the ability to show and disable secondary translations, etc.)

The application must:

- be available for online and offline use. It is necessary to create a database for storing user collections of words so that the user can use the application without an Internet connection;
- suitable for users with different levels of English;
- be built on a level system, that is, the user cannot move to the next level until he has scored a certain number of points;
- have uniqueness (contain relevant expressions that are not displayed in other dictionaries);
- have hotkeys (for example, to view cards, use swipes to the right and left, "tap" in the center - flip the card) [6].

Opportunity:

- receive individual training recommendations;
- complete training courses and assignments with exercises on them;
- repeat the tests and exercises to improve the assessment;
- perform exercises with other people over the Internet in competition mode;
- add friends to share information;
- manage collections of words (creating, editing, deleting);
- download a collection of words from the server;
- add and edit personal expressions and images from the web;
- complete exercises with words from the selected collection;
- translate a word by click;
- change the main translation of a word by clicking on the icon located to the right of the translation. The selected translation will be displayed as the main one in all exercises, in lists, as well as on the word card. It is possible to establish different main translations for different lists;
- create various types of tasks, files and flash cards for the specified collection;
- create individual lessons on your own;
- check responses to tasks;
- switch the application language. All options for actions to be performed by the user in the application will be described exclusively in English. This approach is very effective and efficient;
- the possibility to refine and improve the functions of the application;
- monitor learning progress;
- monitor the studied rules.
- send created collections of words to the server to use by other users.
- availability of a large media library (movies, songs, books, educational videos, music videos). Videos with the ability to control subtitles.

- equipped with speech recognition functions and audio accompaniment to help check pronunciation and listen to correctly pronounced text. The pronunciation assessment program will teach you how to pronounce the learned words correctly [7].

- use a special scientific technique that allows you to effectively replenish your vocabulary with foreign words at a high speed (association technique).

The application can use a special meme tool, thanks to which, in game mode, users train different aspects of their memory (as in memory). During learning with memes, visual memorization, rapid recall, repetition and consolidation of new material are involved.

- the technique of interval repetition of the dictionary. The smart learning system remembers and takes into account the mistakes made by the user and further makes it possible to repeat and learn those words that caused difficulties.

- generation of audio files from courses, lists, phrasebooks, and sending them in mp3 format to e-mail. Depending on the selected settings, the audio file may contain: the voicing of the word, the translation of the word, the example, as well as the translation of the example.

- customizable word repetition periods.

- push reminders for words to remember

- display of leaders [8].

Non-functional requirements describing the properties and limitations of the designed application:

The app must be available for iOS and Android on Google Play and the App Store; work on the Android platform version 4.0 and above; register the user via e-mail or via Facebook;

The application consists of the following sections: "Tasks" (individual task plan for the day); "Training". All exercises for memorizing words can be divided into the following blocks:

- "Getting to know the word" (each word and expression contains voiceover, transcription and translation): "Look at the word"

- "Basic exercises" (with the function of showing the word after an erroneous answer): "Choose a translation", "Choose a word", "Remember the word", "Sprint"

- "Spelling of words": "Collect the word", "Select the missing letters", "Check the spelling", "Describe the picture" (offer a photo with a request to describe 10 sentences, for a while)

- "Building sentences": "Assemble the sentence", "Find the right place", "Translate the sentence".

- "Memory, visual associations": "Restore the story", "Arrange the words", "Arrange the spaces", "Drag the picture", "Pick a pair".

- "Pronunciation". The service with speech recognition function is aimed at improving the level of pronunciation. The program contains speech correction and accent correction functions, offering to make an audio recording on a dictaphone by comparing the text with the dictation pronunciation. The ability to choose a voice-over option: British or American. The following exercises are available: "Listening", "Say a word", "Say a sentence", "Describe a picture" (offer a photo with a request to describe 10 sentences, for a while);

- "Listening": "Unravel the word", "Assemble the sentence", "Audio history";

- "Tests";

- "Crosswords".

- "Media library" (books and articles, films and TV series, programs, songs, video training (collections of videos))

- "Battles"

- "Video phrases" (the ability to study phrases from your favorite TV shows).

- "Courses" (grammatical and thematic).

- "In-depth preparation for international exams" [9].

The abundance of applications for learning foreign languages on the Internet creates a situation where it becomes more and more problematic to surprise the user with their content. In fact, the most important indicator of the popularity of such applications is their effectiveness. In my opinion, most users dream of learning how to correctly formulate sentences and maintain trivial dialogues in the shortest possible time. In this case, it will be most effective to learn new words immediately in context, in short simple sentences with daily, careful study of various types of practical grammar tasks that train all the necessary skills. We believe that the following skills are the most essential: to check the words in the native and foreign language; to match; to puzzle in the studied language (sentence construction) and in a native language; listening (putting together a sentence by ear); different tests (make a proposal by filling in the blanks); spelling (choose from 2 spelling variants of the word, correct); listening (translation of the sentence you heard); find a mistake (choosing the wrong translation of a word from a set) [10].

## **4 Discussion**

The principle of learning English for specialists of the agro-industrial complex should be based on motivation. Motivation is one of the most important components of any activity and is of interest to many disciplines. In the pedagogy motivation is one of the main components of the organization of educational activities and an important characteristic of the subject. Learning English in this application should be based on game motivation [11]. You will need a guide to do this. For example, you can use animation to modulate the weather. For each completed task and successfully completed exercise, the application gives out points and bonuses. When all tasks are completed on time and high points are earned, the sun is shining and the sky is clear. If you skip classes and get a small number of points, clouds gather and it rains. Using the application's own internal "currency", which accumulates when passing new topics and completing tasks, the user can purchase various accessories to decorate his page (in the form of flowers, houses, etc.). As an additional motivation, there may be discounts on tuition fees or paying the bill in the student cafeteria. Sending gifts to other users and the "Family Access" function with up to 5 accounts connected to your account should also be available [12].

## **5 Conclusion**

At the present stage of society's development, everyone has the opportunity to study foreign languages in their free time. This can happen in a convenient mode and in a comfortable environment. It is enough to choose at least one program (mobile application) for daily use. A mobile application for learning a foreign language for specialists of the agro-industrial complex can be used both as a tool for vocabulary replenishment, grammar repetition, and as an additional element that helps turn the learning process in foreign language lessons, with a tutor or during self-study into even more effective [13].

Developing a mobile application model for learning foreign languages for students of all levels or just for those interested, with certain functional requirements for the software of the application being developed, necessary for users to fulfill various goals, seems to be a possible and promising task [14]. The main difference between this application and all the others is the combination of the best features of various websites and applications for learning foreign languages, adapting to the needs and desires of users. In the last decade, informatization has been the most important mechanism for reforming the educational system aimed at improving the quality, accessibility and effectiveness of education, and the issue of the need to learn a foreign language using modern equipment through the use of Internet

services and mobile applications in the learning process is very significant. The potential advantages of using information technology are obvious: the ability to build modular, easily adaptable training programs to the needs of a particular user, regardless of place and time [15]. Their use makes it possible to make learning more effective, individualized and relevant for both school and university students, as well as for adult students with full-time employment and family responsibilities.

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