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EDUCATIONAL

CHALLENGES

LEARNING ENGLISH GRAMMAR BY MEANS OF M-LEARNING: A CASE STUDY

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ABSTRACT

Purpose. The paper deals with the effective implementation of mobile applications for learning grammar in the EFL course for students of nonlinguistic higher educational institutions. The tasks for the research are the following: to discover the didactic properties of mobile applications that enable students' progress in learning English grammar and to apply them; observe students' attitudes towards mobile learning applications for training English grammar skills and their grounds.

Methodology. Quantitative outcomes of the experiment were calculated by means of the knowledge ratio technique. Scaling method was applied to organize the data into numerical form for comparative analysis of the experimental groups and control groups' achievements. A case study was conducted on the basis of Sumy National Agrarian University, Ukraine. A sample consisted of two experimental groups (35 students), and two control groups (36 students), aged 18-19, who studied second year at different faculties during 2021-2022 in the University and participated voluntarily in the study. In experimental groups the studying process was organized with the implementation of tablets and cellphones with the ability to access the

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Internet via Wi-Fi as mobile learning tools and mobile learning applications. A series of the interviews were held to learn students' attitudes towards mobile apps.

Results. English grammar command levels in experimental groups are predominantly sufficient and high in contrast to the predominantly low and initial levels in control groups. The attitudes of students towards mobile apps for learning EFL are mostly positive.

Conclusions. It was concluded that the implementation of mobile learning tools provided the efficient mastering of English grammar by students of non-linguistic higher educational institutions. Improving of EFL teachers' methodological preparation for the introduction of mobile learning requires further researches in this sphere.

KEYWORDS: English as a Foreign Language, English Grammar Command, Grammatical Skills Training, Mobile Learning, Mobile Learning Applications.

INTRODUCTION

Studying grammar is one of the most important aspects of learning aforeign full-fledged language, since communication cannot be efficient without observing grammatical rules of a certain language. In order to form a reasonable approach to teaching English grammar, educators should realize that even perfect knowledge of grammar does not give full command of the language, but full command of the language includes knowledge of grammar (Kokorina, & Litunova, 2020).

Grammatical speaking skills, like all other speaking skills, are characterized by such features as automaticity, flexibility and stability and are formed step by step. The grammatical formation skills of in productive speech should be carried out in stages, among them: 1) familiarization and consolidation; 2) training; initial 3) application. Acquaintance with new grammatical material for productive assimilation is mostly carried out in educational and speech situations, which are presented orally or in the process of reading under the guidance of a teacher.

However, the efficient performing of the following stages is to greater extent dependable on students' efforts, diligence and hard work. Taking into account the peculiarities of modern generation successful realization students, of grammatical skills training and application can be achieved through the implementation of ICT (Bilotserkovets, & Gubina, 2019; Jackson, 2021; Chernenko, 2021). The current generation of youth as no one else reflects the trends of the times. Wide use of mobile phones and other devices has led to the fact that students are inclined to receive new knowledge and processing information in small portions and do it at any free minute (in the bus, while waiting in a line, i.e., intermingling with another activity) (Bilotserkovets, et al., 2021).

Currently, ICT and various digital devices have become an integral part of life of every individual. Digital mobile devices have taken a strong position not only in people's everyday life, they are also widely used in the learning process. This is expressed both in the widespread use of interactive learning tools and in the gradual introduction of applications for mobile phones based on various

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platforms: Android, iOS, etc. into the learning process, that leads to the emergence of mobile 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 (Crompton & Traxler, 2018). Mobile learning must be distinguished from e-learning based on the use of a computer, laptop and the Internet. It can be seen as a form of e-learning using mobile devices. Mobile learning is closely related to electronic and distance education and complements it with the possibility of using any portable device, so the training is not strictly tied to the location of a trainee. In other words, mobile learning technologies eliminate time and location restrictions on gaining knowledge.

The advantages of mobile learning for EFL (English as a foreign language) learning are undeniable: it becomes available to millions of people, opens up with the opportunity of a learning strategy independent choice. Built-in dictionaries in which one can find a translation or explanation of an unknown word, as well as its transcription, greatly facilitate the process of learning a foreign language. Mlearning tools provide effective EFL knowledge and skills formation by facilitating the students' access to quality training materials; individualizing the academic process in accordance with their needs and abilities; applying modern psychological pedagogical, and ICT technologies; enabling constant feedback and control over the quality of the gained knowledge.

Analysis of the literature on the subject of this research showed that the use of mobile technologies for EFL learning is not a fashion swing, but an essential pattern. Modern trends in the field of trained

demands. personnel well as ลร requirements for graduates' of higher education institutions for their competitiveness in the labor market, include a sufficient level of knowledge of foreign languages and digital skills. It is also relevant, because in non-linguistic higher educational institutions students have a few practical classes a week, moreover, not all grammatical phenomena of the English language are studied, but only a specially selected grammar proficiency compendium, that enables students' understanding and learning new practical material faster and more successfully.

Nevertheless, to express their own thoughts in a foreign language, students should master a number of grammatical structures, that compile the active minimum. The grammatical passive grammatical minimum includes such grammatical structures that students may not use to express their thoughts, but which are necessary for perceiving and understanding written information and oral speech of other people in a foreign language (Hovorun et al., 2021).

The paper is **aimed** to study effectiveness of the implementation of mobile applications for learning grammar in EFL course for students of non-linguistic higher educational institutions. To achieve the goal, it was planned to perform the following research tasks:

- to explore the didactic properties of mobile applications that positively affects students' academic progress inlearning English grammar to apply them;

- to learn and regard students' attitudes towards mobile applications for learning English grammar.

METHODOLOGY

Participants. A case study of efficiency of mobile applications for learning English

86 CHALLENGES

grammar was conducted on the basis of National Agrarian University, Sumy Ukraine. The experimental survey was carried out in two experimental groups (EG), consisting of 35 students and two control groups (CG), consisting of 36 students; in total 71 participants aged 18-19, who studied their second year at different faculties during 2021-2022 in the university and participated voluntarily in the study. The syllabus of EFL course was identical for all of them and considered 2 classes a week.

Procedure. In EG and CG the explanation of new grammar material, consolidation of acquired knowledge and skills, as well as verification and control of already acquired ones were organized according to various schemes. In order to clearly identify the didactic characteristics of mobile technologies for learning English grammar, tablets and cellphones with the ability to access the Internet via Wi-Fi as a mobile learning tool and mobile learning applications were involved for EFL classes in EG.

It is worth noting the mobile applications used during this study: Linguo dictionary – online version, Wikipedia – an online encyclopedia, MX player – a program for viewing video content, Viber and WhatsApp– for sending assignments to students, as well as for conducting feedback from students, transferring files from one device to another, Bookmate – an online library, etc.

Learning English grammar was performed by means of the following facilities:

- Learn English Grammar, an online English grammar learning application developed by the British Council. It includes 25 grammar topics, 600 interactive tasks and thousands of exercises. There are two versions of the program – with British and American variants of the English language.

 Johnny Grammar's Word Challenge, also developed by the British Council aimed at improving English grammar. This app offers students 60-second quizzes to test their vocabulary and spelling and improve their speaking skills. In total, the tests cover 12 grammar topics.
English Grammar in Use, a program based on the manual of the same name written by Raymond Murphy for students with an intermediate level of EFL. It includes 145 explanations and exercises on past and present tense rules, interactive exercises, a dictionary and a study guide.

- Mad Libs is a popular game to test vocabulary and grammar, simple and suitable for students of any age and knowledge level. It is designed in a way that one player asks another for a list of words that must be put in the gaps in the story. Various hints help to complete the missing parts of the story.

Traditional teaching tools, such as textbooks, paper dictionaries and writing exercises were used in the process of teaching EFL in CG. The work in CG consisted in the preparation of projects on a given topic using paper dictionaries, textbooks and the materials that were prepared by teachers and displayed on the interactive board or online.

Preliminary knowledge tests were held at the initial stage in order to learn the baseline data of EG and CG students' English grammar proficiency. It was revealed that the students of EG and CG had approximately the same knowledge levels. The study of EFL with the implementation of mobile apps (in EG) took place during two semesters, then a final check of EG students' English grammar proficiency was made for comparative analysis with the level of CG students' English grammar proficiency.

ISSN: 2709-7986

EDUCATIONAL CHALLENGES

Ultimate experimental diagnostics was performed through tests, oral answers, complex control works' results etc.

Quantitative processing of the results of exercises, oral and written answers was carried out by means of the knowledge ratio technique (Poplavskaya, 2009), which was determined according to the formula:

RK = (a + b + c)/3

in which **RK** presents the ratio of English grammar knowledge, **a** – systematics, **b** – volume, **c** – efficacy.

Scaling method was applied to organize the data into numerical form as follows: 5 points show a high level of formation of English grammar proficiency, 3 – sufficient level, 1 – low level, 0 – initial level correspondently.

The following numerical inequalities were taken for calculations: if 3,67<**RK**≤5, the level of English grammar proficiency is high; if 2,33<**RK**≤3,67, English grammar proficiency formation corresponds to the sufficient level; 1<**RK**≤2,33 – the level of English grammar proficiency is low; 1<or = **RK** – the English grammar proficiency level is initial. To compare the results obtained in EG and CG, the following formula was used: <u>P1-P2</u>

t = √ <u>P1*q1</u> +<u>P1*q2</u>

N1 N2

where **P1, P2** – percentage; **q1, q2** – corresponding 100-P1, 100-P2.

N1, N2 – quantity of the objects under the experimental survey.

If t > 2, so there is a significant difference, if t < 2, so there is no significant difference. If t > 3, so the difference is definitely reliable (Poplavskaya, 2009).

RESULTS

The comparison of the indicators of English grammar proficiency levels in experimental groups confirmed the sufficient (46 per cent) and the high (24 per cent) levels of English grammar proficiency (25 per cent of students had the low level and 5 per cent of students had initial level); in contrast to the predominantly low (49 per cent) and the initial (11 per cent) levels in control groups (28 per cent of students had the sufficient level of English grammar proficiency, 12 per cent of students were determined as having high level of grammar knowledge). The percentage and quantity data are presented in Table 1.

Table 1

Experimental groups, % **Control groups**, % Groups (35 students) (36 students) Levels Before After Before After 10 24 11 12 High Sufficient 25 46 24 28 25 49 46 47 Low 5 Initial 19 18 11

The outcomes of the experiment on using mobile apps for learning English grammar

To fulfill the second task of the study a series of the interviews were held with EG students who were asked to express their attitude towards mobile apps that we used for learning English grammar. Most students (92.7 per cent) revealed that learning mobile applications that had increased their motivation for learning. 85.7 per cent of EG students said that the mobile form of learning had stimulated a

ISSN: 2709-7986

EDUCATIONAL CHALLENGES

great interest in English grammar issues they learnt, due to updated and authentic training materials and resources that are available anytime and anywhere.

respondents stated that the The implementation of the mobile gadgets and applications was very attractive and because they practical, preferred combining learning with using digital (smartphones, tablets) gadgets in everyday life (96.1 per cent). Furthermore, analysis of the students' responds about using mobile apps for training grammar enabled authors to single out the following points that had contributed to their positive perception of the semlearning tools, among them: a detailed analysis of possible lexical and grammar mistakes in accordance with each grammar issue provided by chat bot (79.3 per cent); audiovisual, multimedia and other linguistic content related to each English grammar topic, availability of different levels of complexity that enables of students' consideration of their previous cognitive experience (89.6 per cent).

Many students stressed the efficacy and simplicity of information exchange during the performance of the assigned task as well as teachers' feedback via mobile communication (92.4 per cent). Concurrently, many respondents complained that while studying, they are often distracted by mobile applications of an entertaining nature (81.2 per cent). Students get busy with the main educational activity, but simultaneously they play games, communicate in social networks and chat applications, view video and audio resources that are not related to the topic of the task. Some admitted deficit students the of educational professionally-oriented mobile applications and programs (79.1 per cent); inconvenienceof work on tablets and cell phones because of their small sizes and relatively small screen resolution (69.3 per cent). Almost 96 percent of respondents wanted to continue such practice permanently. The percentage and opinion points are presented in Table 2.

Table 2

Students' attitudes for using mobile apps for learning English grammar

N⁰	Attitudes and Grounds for	Respondents,
	Students' Grammar Improvement	%
1.	Increasing students' motivation for learning	92.7
2.	Availability of updated and authentic training materials and	85.7
	resources anytime and anywhere	05.7
3.	Combining learning with using digital gadgets	96.1
4.	Analysis of lexical and grammar mistakes provided by chat bot	79.3
5.	Different levels of complexity for consideration students	89.6
	previous cognitive experience	09.0
6.	Information exchange during the performance of the assigned	92.4
	task, teachers' feedback provided via mobile communication	92.4
7.	Distraction from doing learning tasks by mobile applications of	81.2
	an entertaining nature	01.2
8.	Small sizes and relatively small resolution of screen	69.3
9.	Lack of educational mobile applications and authentic	79.1
	materials oriented on students' future specialty	/9.1
10.	Eagerness to continue mobile apps practice permanently	96

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DISCUSSION

In the process of the experimental study the authors focused on the didactic properties and didactic functions of mobile technologies, regarding them as characteristics that distinguish them from other teaching aids, used in the practice and theory of EFL learning (Göksua, & Aticib, 2013; Oz, 2014). Based on the generalization of data, the authors explored such didactic properties of mobile technologies in teaching a foreign language as accessibility through mobile devices; ability to store and transmit information in different formats (text, graphics, video, audio) (Sarrab, et al., 2012); ability to post comments or make changes to the content; possibility of using information and reference resources, etc. (Cheng, 2015); and their didactic functions: digitalization of the educational process; fostering information culture of students; the possibility of organizing a network discussion based on mobile technologies; the possibility of performing group and individual projects based on mobile technologies; organization of search and research work (Korucu, & Alkan, 2011).

while Moreover, preparing and conducting the experiment, the following methodological functions of mobile technologies were under review: formation of grammatical EFL skills and their representation in productive (speaking, writing) and receptive (listening and reading) types of foreign language speech activity: fostering students sociocultural and intercultural competencies through the learning material, chosen for studies (Wang, & Smith, 2013; Manea, & Gări-Neguț, 2021).

Therefore, the authors pointed out the advantages for the EFL learning process, provided by mobile applications implementation. It was found out that positive influence of mobile tools is enabled by their expanding educational space beyond the university; promotion of student-centered approach to teaching and objective assessment of students' capabilities; introducing interactive and imitative visual aids into the active use of students; their lower cost in the telephony and communication market, compared to the cost of a personal computer; quick exchange of data and educational materials between students thanks to wireless technologies (Luque-Agullo, & Martos-Vallejo, 2015).

But, unfortunately, any educational tool has its own shortcomings, and mobile technologies are no exception. In the process of EFL learning using a tablet as a mobile device and the listed mobile applications, the following weaknesses were identified: deficit of prepared educational mobile applications and programs for students in their major, which would correspond to the topic of the working curriculum; entertaining nature of some applications, that distract students from the main educational activity during working hours (games, communication in social networks, chat applications, viewing video and audio resources that are not related to the topic of the task); small sizes and relatively small screen resolution (Yaman, et al., 2015; Mâță, & Dobrescu, 2022).

the lack of Moreover, proper methodological training for educators and the insufficiency of professionally-oriented didactic material should be also admitted. the adoption of mobile Promoting learning apps in to the process of EFL learning in non-linguistic higher educational institutions is challenging because it is not only up to students but also to educators to see the benefits of such innovations and to change personal learning strategies (Li, et al., 2022). Nevertheless, currently, the formation of

7986 EDUCATIONAL CHALLENGES

an organized mobile learning system has just begun, the topic of studying the didactic potential of mobile devices in the educational process is very relevant and perspective for future research.

CONCLUSIONS

The research revealed а significant improvement of EG students' English grammar proficiency in comparison with CG students' Enalish arammar proficiency. Such а difference was explained by the grown interest in EFL learning, increased productivity and efficacy of the academic process due to mobile tools implementation, which was a variable in the experiment. In addition, students' perception of studying English grammar by means of m-learning apps was predominantly positive.

Thus, thanks to the work carried out on the subject of the research, it is possible to draw a conclusion about the effectiveness of using mobile learning technologies in professionally-oriented foreign language classes with students of non-linguistic higher educational institutions, provided by their specific didactic properties and functions. Unformed scientific and methodological preparation of EFL teachers for the introduction of mobile learning is a challenge, which requires further researches in this sphere.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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AHOTALIIS / ABSTRACT [in Ukrainian]:

ВИВЧЕННЯ ГРАМАТИКИ АНГЛІЙСЬКОЇ МОВИ ЗА ДОПОМОГОЮ МОБІЛЬНОГО НАВЧАННЯ: ПРИКЛАД ДОСЛІДЖЕННЯ

Метою статті є дослідження ефективного впровадження мобільних навчальних додатків для вивчення граматики в курсі «Англійської мови як іноземної» для студентів нелінгвістичних вищих навчальних закладів. Завданнями дослідження є: виявлення дидактичних можливостей мобільних навчальних додатків, які сприяють прогресу студентів у вивченні граматики англійської мови, і їх реалізація; виявлення ставлення студентів до мобільних навчальних програм для вивчення граматики англійської мови та їх підстави.

Методологія. Кількісні результати експерименту розраховувалися за допомогою методики співвідношення знань. Метод шкалювання був застосований для організації даних у числовій формі для порівняльного аналізу досягнень експериментальної та контрольної груп. Дослідження було проведено на базі Сумського національного аграрного університету, Україна. Вибірку становили дві експериментальні групи (35 студентів) і дві контрольні групи (36 студентів), віком 18-19 років, які навчалися на другому курсі різних факультетів протягом 2021-2022 років університету та добровільно брали участь у дослідженні. В експериментальних групах навчальний процес організовувався з використанням планшетів і мобільних телефонів із можливістю виходу в Інтернет через Wi-Fi як мобільного засобу навчання та мобільних навчальних додатків. Було також проведено серію інтерв'ю з метою виявлення ставлення студентів до мобільних додатків.

У **результаті** було встановлено, що рівні володіння граматикою англійської мови в експериментальних групах переважно достатні та високі на відміну від низького та початкового рівнів, які домінують у контрольних групах. Ставлення студентів до мобільних додатків для вивчення англійської мови головним чином позитивне.

Зроблено **висновок**, що впровадження мобільних засобів навчання забезпечило ефективне засвоєння граматики англійської мови студентами нелінгвістичних вищих навчальних закладів. Удосконалення методичної підготовки викладачів англійської мови до впровадження мобільного навчання потребує подальших досліджень у цій сфері.

КЛЮЧОВІ СЛОВА: англійська як іноземна, англійська граматика, тренування навичок граматики, мобільне навчання, програми для мобільного навчання.

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