NEW EDUCATIONAL TECHNOLOGIES TO DEVELOP FOREIGN LANGUAGE COMMUNICATIVE COMPETENCE OF NON-LINGUISTIC STUDENTS: DIGITAL STORYTELLING

Elena N. Makarova
Ural State University of Economics (Ekaterinburg, Russia)
ORCID ID: https://orcid.org/0000-0002-4439-5521

Irina S. Pirozhkova
Ural State University of Economics (Ekaterinburg, Russia)
ORCID ID: https://orcid.org/0000-0002-3850-5069

Abstract. The paper discusses the issue of introduction of new educational technologies as a tool for developing students’ communicative competence in foreign language learning. The study is aimed at analyzing the impact of digital story creation in a foreign language on the development of students’ foreign language communicative competence, their motivation to learn a foreign language and their adaptation to academic environment. Review of literature on readiness of modern higher education to wide implementation of e-learning components is given; reasons preventing their introduction into teaching of foreign languages are described. Analysis of implementing digital storytelling in a foreign language teaching is presented. The impact of the first-year students’ participation in creation of digital stories on their language learning motivation and adaptation to university environment is considered. The data, collected from surveys and digital stories, created by students and assessed by university teaching staff, were analyzed. The results prove a positive impact of digital storytelling educational technology on students’ motivation in foreign language learning, as well as on the process of first-year students’ adaptation to academic environment. The results also demonstrate that creation of digital stories contributes to formation and development of variety of learners competences, including foreign language communicative competence and helps improve students’ soft skills. The contribution of each author in this research is the following: E. Makarova – 50% (theoretical background of the problem and approbation), I. Pirozhkova – 50% (methodology, approbation and results analysis).

Keywords: innovative educational technologies; foreign language teaching; modern technologies in education; higher education; digital storytelling; students majoring in Information Technology.

НОВЫЕ ТЕХНОЛОГИИ КАК СРЕДСТВО РАЗВИТИЯ ИНОЯЗЫЧНОЙ КОММУНИКАТИВНОЙ КОМПЕТЕНЦИИ СТУДЕНТОВ НЕЯЗЫКОВЫХ ВУЗОВ: ЦИФРОВОЙ РАССКАЗ

Макарова Е. Н.
Уральский государственный экономический университет (Екатеринбург, Россия)
ORCID ID: https://orcid.org/0000-0002-4439-5521

Пирожкова И. С.
Уральский государственный экономический университет (Екатеринбург, Россия)
ORCID ID: https://orcid.org/0000-0002-3850-5069

Аннотация. В статье рассматривается вопрос внедрения новых образовательных технологий в преподавание иностранного языка с целью формирования и развития компетенций студентов высших учебных заведений. Цель исследования – проанализировать влияние создания цифровых историй на иностранном языке на развитие у учащихся иноязычной коммуникативной компетенции, а также на их мотивацию при изучении иностранного языка и адаптацию к академической университетской среде. Приведен обзор существующих в литературе взглядов на готовность современного высшего образования к широкому внедрению элементов электронного обучения, описаны причины, препятствующие реализации данного процесса. Представлен анализ внедрения цифрового рассказа в процесс обучения иностранному языку. Рассмотрено влияние участия студентов в создании цифровых историй на их мотивацию к изучению иностранного языка, а также адаптацию студентов первого курса, специализирующихся в области информационных технологий, к академической среде. Проанализированы данные, полученные в результате опросов и анализа

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Introduction. Demand of modern society with a new type of digital economy for higher education graduates possessing a wide variety of developed competences cannot but affect teaching and learning in higher education. To satisfy this demand, higher education institutions have been taking various efforts to improve the efficiency of educational process. One of the main trends in the modern higher education development is a continuous search for new and effective methods and forms of learning and teaching. In recent years priority has been given to implementation of the elements of smart-education [Vasetskaya, Glukhov 2017] and introduction of advanced teaching methods based on applying information technologies [Meleshchenko et al. 2019]. Many of these, such as online-diary, E-portfolio, M-Learning have proven their effectiveness and have been recognized by pedagogical community both in the Russian Federation and abroad [Voronova 2018; Caraig et al. 2020].

Along with the benefits of introduction of the latest technical devices and software in university learning environment, there is an urgent need for development of information culture of modern students [Kozlov, Undozerova 2017]. Therefore, integration of digital forms of organizing students’ individual and team activities and search for new educational electronic technologies remain relevant.

The goal of the study is to describe effective educational technologies used in teaching foreign languages and to analyze the impact of digital storytelling on formation and development of foreign language communicative competence, motivation in learning a foreign language and adaptation to academic environment.

To reach the goal it was necessary to:
1) analyze the research works relevant for the study;
2) identify the potential of digital storytelling in communicative competence development;
3) adapt digital storytelling to the needs of IT students and to the learning process in our university;
4) introduce the technology and explain its essence;
5) implement digital storytelling;
6) make a survey among students to reveal their attitude to digital storytelling technology;
7) make conclusions and outline the prospects.

Research novelty: this is the first experimental study of the impact of digital storytelling on FL communicative competence development, on motivation and adaptation of the first-year students majoring in IT.

Research methods include general scientific methods of analysis, comparison, description and interpretation and empirical research methods, such as pedagogical observation, syllabus planning, linguodidactic experiment, survey and results comparison.

Review of Literature. Smart Technologies in Education. Review of modern literature suggests that despite the importance of introducing electronic resources in education, the traditional approach in teaching most academic disciplines prevails. Among the reasons preventing implementation of digital learning components, modern authors mention the following. First
of all, there is an urgent need to improve information literacy of the academic staff themselves: “teaching staff do not have time to ‘catch up’ with the technologies demanded by life to adapt to the conditions of learning and education; their introduction requires rapid changes, including a change of mentality and mastering new competencies” [Akhmetova et al. 2019: 147]. This problem is typical of both, universities of the Russian Federation and foreign higher education institutions. For example, describing benefits of implementing components of e-learning in Saudi Arabia, it has been emphasized that even selection of new classroom materials can become a challenge for supporters of traditional educational system [Fayez et al. 2021].

The issue of developing digital teaching resources and their quality remains widely debated. The questions under discussion concern the relevance of educational resources and their selection in accordance with the students’ major [Belyakova, Zakharova 2019].

Another factor constraining transformation in higher education concerns limited understanding of the essence of smart education as extensive availability and use of electronic resources. Implementation of educational activities within the framework of smart learning implies a variety of other changes: “smart-education is connected not only with the new technological approach to educational activities, which involves Internet programs and smart gadgets, but also implies special styles and methods of their performance, aimed at development of specific cognitive skills and methodological practices of students” [Bataeva 2019: 41–42].

An interesting aspect of studying the issue of higher education digital transformation is the analysis of students’ perception of teachers’ readiness to work in the rapidly changing academic environment. The results of research prove that conducting training sessions with the use of e-learning elements increases the rating of the instructor’s performance by students [Stowell et al. 2018].

However, students’ acceptance of extensive use of computer technology and electronic resources in learning is mixed. The results of the study conducted by O. N. Kislova and I. I. Kuzina show that “overwhelming majority of students motivated in acquisition of fundamental knowledge prefer using ‘paper’ version of academic texts for in-depth study of their content. Electronic resources are used by students for academic purposes for cursory examination and search for original sources, which are later studied in a traditional way” [Kislova, Kuzina 2016: 11]. According to E. V. Berezhnova more than one third of the respondents, who participated in the research, expressed no interest in increasing the amount of work using digital technology. This result can be accounted for by students’ protective reaction caused by an increase in independent study time and load [Berezhnova 2020]. Similar results are presented in recent study on personal learning environments of students majoring in social and natural sciences, medicine, law, and engineering. The authors conclude that the majority of their Spanish students do not like digital tools when they are actually studying [Prendes et al. 2017].

Nevertheless, these findings do not agree with the results of numerous studies confirming students’ increasing interest in introduction of electronic education components in learning [Gareev et al. 2018].

Therefore, literature review shows that a number of issues regarding implementation of e-learning in higher education, for instance, its impact on students’ emotional well-being, are still debatable and remain to be addressed. As a result, testing new educational technologies undoubtedly requires further study [Filippova et al. 2019].

The relevance of the use of electronic educational resources and tools in foreign language teaching has been the focus of numerous studies. Despite growing attention and interest to this issue demonstrated by both researchers and teachers, effective teaching and learning a foreign language with digital technologies remains an unsolved problem. Many authors claim that students of non-linguistic specialties experience difficulties in acquiring foreign language communicative competence [Martynova et al. 2019]. Most early works as well as current studies focus on the use of new learning technologies to develop students’ speaking skills [Wiebel, Silva 2018]. It is argued that the Russian learners have specific educational needs and thus, it is necessary to adapt positive experience of foreign educators in developing foreign-language communicative competence to the national educational environment: “it should be recognized that the proposed solutions are not quite applicable for non-linguistic specialties in
Problems faced by foreign language university teachers can be solved through introduction of the latest technology in combination with traditional methodological approaches, for example, audiovisual materials, which have proven to be an effective tool in both traditional and innovative activities of teachers [Campbell et al. 2019]. Despite the fact that teachers have been using videos in foreign language teaching for decades, the search for new forms of work with the use of digital video remains relevant, as its potential to foster foreign language learning cannot be overestimated. Positive experience in using video resources for teaching listening comprehension is described in the article by A. V. Kuzmina and N. V. Popova. However, alongside with description of undeniable benefits of audio-visual teaching tools and their high efficiency, the authors state that the use of video in a foreign language class was assessed by the teachers, who participated in the interview, insufficient [Kuzmina, Popova 2019]. Several studies suggest that practices in students’ creating their own videos in a foreign language can be more productive for development and improvement of foreign language skills. Learning through videos creation can be carried out both in and outside the classroom. A good example of effective foreign language teaching to future architects is given in the work by Paloma Úbeda. The author states that the task to create video sketches increased students’ motivation for learning a foreign language [Úbeda 2016].

Digital stories, which also belong to powerful teaching tools [Robin 2016], are understood as a wide range of video-digital works, among which the following are distinguished: audio and video podcasts, Internet stories that combine the use of audio, video, text and animated content (web-based stories), interactive stories, computer games (narrative computer games) and some others. The process of creating multimedia texts by students has a significant learning potential. Carrie Kortegast and Jonathan Davis emphasize other advantages of using digital storytelling in education: “in creating and sharing their digital stories, students ... demonstrated the ability to apply student development theories to their personal experiences” [Kortegast, Davis 2017].

Foreign Language Communicative Competence. Communication has become extremely important today, particularly intercultural communication due to globalization and extensive cooperation between countries. That is why it is crucial to develop not only professional competences of non-linguistic students, but also foreign language (FL) communicative competence. It is generally accepted that a FL communicative competence consists of such sub-competences as linguistic, discourse, pragmatic, socio-cultural and strategic [Kostyukova, Morozova 2011; Zimnyaya 2004]. In this research we adopt the following structure of FL communicative competence (Fig. 1).

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**FL Communicative Competence**

**Language**
- grammar rules
- vocabulary
- pronunciation

**Pragmatic**
- use of language to achieve the goal
- proper use of language suitable for the genre

**Socio-cultural**
- knowledge of culture-bound words, rules and patterns

**Discourse**
- ability to make a cohesive text
- knowledge of connectives and transition elements

**Strategic**
- ability to compensate for the language gaps

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Fig. 1. Structure of FL communicative competence
One of the most efficient ways to develop FL communicative competence is storytelling. It is a monologue and it allows students to express their views, attitudes and feelings in a foreign language in a more detailed and logical way. “Storytelling can encourage students to explore their unique expressiveness and can heighten their ability to communicate the thoughts and feelings in an articulate, lucid manner” [Sitoru 2018: 28]. However, traditional monologues (even if they are supported by a power point presentation) arouse little enthusiasm in students. Digital storytelling has changed the students’ attitude to the task. It incorporates multimedia in learning which is very motivating for the twenty-first century students. Digital storytelling generates motivation, interest and attention of modern students. “The screen generation” is hard to involve in learning with the help of printed or spoken texts, but they work perfectly well with the tasks on the screens (in apps, in e-books, in online platforms, etc.).

Digital storytelling: experimental integration.

Definition and principles of digital storytelling. The concept of digital storytelling was introduced in the USA in the 1990-s, and it was purely a cinematography genre. A digital story was a short film telling about the life of people during the Civil War based on the real events, original footage and photos. The goal of the stories was to produce a strong emotional effect on the audience. They were often black-and-white and used emotional music and special effects. Later the genre was borrowed by the advertising industry and by the teaching community. It has proved to be very promising as it shifts the accent in the work with video – when watching an episode in a foreign language students are just “passive” observers, while creating a digital story they become authors of the product and thus they use the language and software more consciously. “Most university instructors have not taken advantage of student-generated videos, possibly because they are either unaware of the option or they do not know how to set up and assess video presentations” [Malouff, Shearer 2016: 98].

We define digital storytelling as a wide range of video stories that combine a text and different multimedia, such as video, audio, graphic (titles and captions in English, subtitles, non-verbal elements, stills, drawing on paper, etc.), music, off-screen voice, special effects, etc. In this research we focus on the opportunities of digital storytelling for communicative competence development, on its adaptation and motivational potential. So, digital story is a means to tell a personal story in emotional and creative way to produce a meaningful content.

These are some principles of a digital storytelling that we use as the basis in our work: 1) it must be personal and narrated from the 1st person; 2) it may combine moving video and stills; 3) it must combine spoken text and written text in English; 4) sound effects should enhance the impact of the video; 5) it should last from 2 to 6 minutes; 6) the story must be spoken by the student in English.

We have integrated digital storytelling in teaching IT students English. According to the Federal State Educational Standards, graduates of higher education institutions majoring in computer and information science must possess the ability to communicate orally and in writing in Russian and foreign language. Our experience proves that students majoring in IT demonstrate interest to the use of modern electronic resources in learning. Implementation of digital technologies in foreign language teaching helps to form both foreign language communicative competence and professional competence of IT-students: “the use of modern means of information and telecommunication technologies allows to substantially increase the efficiency of the educational process as the technologies applied in the training process fully correspond with the content and purpose of the discipline studied” [Dmitrichenkova et al. 2017: 578].

Our experience of work with students of non-linguistic programs, IT in particular, has revealed some characteristics of modern students that should be taken into account when teaching them a foreign language. Firstly, students react positively to the use of digital tools (games and platforms like Kahoot and Quizlet), visual aids (such as infographics, presentations and videos) and on-line apps and software (for instance, mentimeter, padlet and google forms). The absence of multimedia decreases students’ involvement in

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the subject and motivation to learning the language. Secondly, traditional methods of teaching English, such as reading tasks, grammar exercises, dialogues and so on, have become a chore for the students. Finally, the Russian reality is so, that students do not use English in real life, it is just a set of rules practiced in class, and thus, they cannot realize how it may help them in their future profession. So, it is important for academics to integrate modern approaches to teaching and to transform learning to meet the needs of the twenty-first century students.

**Research design.** In order to choose a suitable technology we made a survey among the teachers of English at the Department of Business Foreign Language. As a result we identified the following traits of IT students: they are reserved and uncommunicative; they show little interest in extracurricular activities and public events held at university; they are difficult to involve in discussion of a topic; it is hard for them to concentrate on one problem for a long time and they are poor in time management and planning. These traits may become an obstacle to the foreign language communicative competence development. At the same time IT students have a rich vocabulary and they learn how to use different apps quickly. According to the teachers, the most interesting tasks for IT students are: presentations, creative tasks and listening exercises. So, we believe that digital storytelling is an excellent tool to satisfy the students’ needs and to increase their motivation in learning English. This is a creative exercise, it activates speaking skills (in the form of a monologue when recording the video), listening skills (when watching digital stories of the fellow students), communication skills (when discussing videos in class) and professional skills (use of different apps for video recording and editing). Besides, digital storytelling breaks the routine of the textbook and helps to exceed the boundaries of the classroom use of English.

Thirty six first-year students took part in the experimental integration of digital storytelling technology. We believe that it is a good tool to help students adapt to the university, to learn each other better and to create a positive atmosphere in class. Socio-psychological adaptation of students to university is very important, because it influences further study. Successful adaptation to learning environment contributes to students’ motivation and results. The main problems that the first-year students experience are heavy workload, poor time management and self-regulation, socio-psychological discomfort, poor concentration, insufficient knowledge and high demands form teachers, anxiety and fear [Danilenko 2020]. Digital storytelling helps to eliminate some of the problems of socio-psychological adaptation.

Here is a model of digital storytelling incorporation:

– **Introduction.** Show the students an example of a digital story and discuss the video in group. Today there are different websites devoted to digital storytelling. For instance, storycenter.org, digitalstorytelling.coe.uh.edu, vimeo.com, etc. It is possible to choose an example story for any topic. We have found a digital story about students’ life at university and showed it in group. Then we discussed the video and compared experiences. At the end of this stage we explained the students the essence of digital storytelling, marked the main features and potential uses.

– **Preparation.** Introduce some tools for making a digital story: StoryBird is a free platform suitable for users of any age; UtellStory is a free community focused on multimedia stories creation and exchange; Storyboard Generator is an online tool that helps to plan the story, make a storyboard and combine different elements (pictures, music, special effects, etc.); iMovie or Movie Maker – are apps suitable for editing.

– **Conception.** Present the topics for new digital stories. Give a brief instruction on the text structure. We suggest making at least two digital stories a year. In our case we offered two topics: “My University. My Profession” is introduced first to help students learn more about our university, to create a positive image of university, to help them realize the importance of the choice of future profession, and to help them become part of the university community. The second digital story offered a choice of topics: “Say No to Corruption”, “Say No to Drugs”, “Ask not, what your country can do for you. Ask what, you can do for your country”, “I am Against Violence and Terrorism”. Traditionally similar topics are presented in a form of a monologue in class, but modern students show little interest in this task and thus they do it quite poorly. We
believe that digital storytelling might be a solution to the problem and students’ performance will be improved.

– Advice. Consult students about their stories, particularly texts, individually. It is possible to organize such short consultations during the class, while other students are busy with an exercise. Every student may ask a question about the texts they have written for their digital stories. The most frequent questions were about the choice of vocabulary and grammar.

– Presentation. Watch the digital stories in class and organize a group discussion. Students are given ten days to make their digital stories and then they are shown in class. While watching students are asked to make notes to be able to take part in discussion. It is advisable for a teacher to prepare some questions to stimulate discussion.

– Conclusion. Feedback from the teacher and from the students. In this case a teacher comments on the positive aspects of the students’ work, mentions the best moments and corrects students’ mistakes. At the first stage of digital storytelling we suggest correcting the most frequent mistakes without personal reference. At the second stage, however, it is advisable to correct mistakes of every student individually. Feedback from the students is also important, they share their experiences of making the digital story, underline the positive effects and speak about the problems they faced.

Table 1 shows how all sub-competences within FL communicative competence are developed with the help of digital storytelling.

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<th>Table 1. Digital storytelling in FL communicative competence development</th>
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<td><strong>Stage</strong></td>
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| Introductory | – Watching an example of a digital story.  
– Discussing the digital story.  
– Asking and answering questions. | **Linguistic** (development of listening skills; grammar skills – structure of statements and interrogative sentences; vocabulary skills – expansion of vocabulary relevant for the topic).  
**Strategic** (ability to extract the meaning of an audio text overcoming language gaps). |
| Preparatory | – Explaining the use of multimedia tools.  
– Share experience of the use of these or similar resources. | **Linguistic** (vocabulary expansion).  
**Discourse** (producing an utterance to exchange experiences). |
| Conceptual | – Giving topics for digital stories.  
– Explaining text structure.  
– Group discussion to generate ideas for digital stories. | **Discourse** (learning features of texts of the genre, pattern of text structure, conjunctions and transition words to make a cohesive text).  
**Pragmatic** (the ability to use language suitable for the situation and to create a text to meet the needs). |
| Advisory | – Correcting grammar, vocabulary and style of the texts made by the students. | **Linguistic** (correction of mistakes with the help of the teacher).  
**Pragmatic** (adaptation of the text style to the genre of a storytelling). |
| Presentational | – Showing digital stories in class.  
– Watching digital stories made by students.  
– Making notes on the most memorable elements of a story.  
– Post-watching discussion. | **Linguistic** (ability to make grammatically correct sentences, proper use of vocabulary).  
**Discourse** (ability to make a logical and cohesive text, ability to properly interpret the text produced by others).  
**Strategic** (use of the limited resources of a foreign language to express a complete thought).  
**Socio-cultural** (presentation of the knowledge about the native or foreign countries, cultural references such as idioms, famous quotes, non-verbal elements – symbols and images).  
**Pragmatic** (ability to create a strong emotional impact via a combination of a verbal text, visual elements, audio and other multimedia). |
| Concluding | – Feedback from the teacher.  
– Feedback from the students.  
– Mistakes correction. | **Pragmatic** (discussion of the emotional impact produced by the digital stories).  
**Discourse** (ability to express their point of view).  
**Language** (avoiding mistakes). |
Discussion. Adaptation to university is a difficult period in students’ lives. Many of our students suffer from an unconscious choice of university. They often admit that they have chosen the university and the program randomly, because their relatives studied here, or because they did not have enough scores to go to another university. It proves the absence of a thoughtful choice of the program which may result in dissatisfaction and disappointment in the near future. Our experience of digital storytelling implementation shows that it is a good tool to raise awareness, to create a positive image of the university and to facilitate successful adaptation.

It is possible to identify four categories of adaptation difficulties: motivational, communicational, cognitive, and regulatory. “Motivational difficulties are related to poor cognitive motivation and poor motivation to master a profession. Communication difficulties are attributed to poor communication skills. Cognitive difficulties are defined by insufficient general learning skills and a poor capacity for reflection and self-esteem. The source of regulatory difficulties is a lack of self-organization skills and poor self-control” [Orlov et al. 2018: 72].

We argue that digital storytelling is a good tool to eliminate these difficulties. Motivation to learning English and to study at university in general has increased, which is proved by the result of the survey we held among the students at the end of digital storytelling integration. 83.7% of students are satisfied with the result (they write “It was interesting”, “I learnt new skills”, “I was involved in the process”, etc.), 13.6% of students did not feel any difference, it was just an educational task, while only 2.7% admit that it was difficult.

Communicational difficulties are reduced as digital storytelling is a good tool for FL communicative competence development. It helps to make grammatically correct sentences (linguistic sub-competence), to produce a cohesive text (discourse sub-competence), to enrich the emotional impact of communication (pragmatic sub-competence), to know and be able to speak about cultural phenomena (socio-cultural sub-competence) and to be able to express a thought having limited knowledge of the language (strategic sub-competence).

Cognitive and regulatory difficulties are reduced, as digital storytelling promotes soft skills as well. According to the students’ feedback the main advantages of digital storytelling are the following: it helps to become more confident, it develops creativity, it helps to make friends with the fellow students, it helps to overcome shyness, it is suitable for self-expression and it unlocks students’ potential, it develops time-management skills and stimulates independent work.

All the students who took part in digital storytelling used the image of the university in a positive context (Pic. 1, 2), they learnt the history of the university and checked its rating, they found facts about the teaching staff, they realized the opportunities of the chosen program better.

At the second stage of digital storytelling, we raised awareness of some socially relevant issues. Students admitted that after watching some of the digital stories they will try to change their lifestyles. Here is a sequence of shots from a digital story about environmental problems (Pic. 3).
These images were supported by sound effects (the student spoke in a whisper at some moments and the music was very emotional), special effects (flashing captions, questions appear one after another and then disappear), colors (red color is a symbol of danger), etc. All these elements produced a strong impact on the audience, and after watching this digital story there was a complete silence in the classroom for a while, after which the students shared their views on the environmental problems.

So, we believe that digital storytelling is a powerful tool that can be used in teaching a wide range of subjects at university to raise motivation of students and to develop the necessary competences.

Conclusion. Digital storytelling has a high motivational potential. Results of the survey among the students confirmed this view. 86% of respondents agree that this is a useful task. Only one student was against it, and we have found out that the main difficulty was in the absence of computer. In fact this might be a serious problem if digital storytelling is practiced regularly, so teachers should find out beforehand if everyone in the group has a computer, a laptop or a smartphone and help find a solution to a problem (computer class, team work, etc.). 88,5% of students say that their English language skills improved (text creation, pronunciation, vocabulary, monologue, etc.). Some students (61%) admitted that this exercise helped them match their professional skills (computer knowledge) and English language communicative skills that increased their motivation to study both, the major and the English language.

Our findings confirm students’ interest in digital learning technologies and the fact that they increase the efficiency of education at university.


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