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IMPACT OF DIGITALIZATION ON IMPROVING THE EFFICIENCY OF TRAINING SPECIALISTS WITH KNOWLEDGE OF FOREIGN LANGUAGES

IMPACTO DE LA DIGITALIZACIÓN EN LA MEJORA DE LA EFICACIA DE LA FORMACIÓN DE ESPECIALISTAS CON CONOCIMIENTOS DE LENGUAS EXTRANJERAS

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ABSTRACT

The present time calls for an active introduction of digital technology into the process of teaching foreign languages. The application of digital technology in higher education institutions is indicative of a new stage in foreign language learning by specialists with the aid of digitalization. The study aims to substantiate the impact of digitalization in increasing the efficiency of training specialists who know foreign languages. The research goal is achieved using systemic analysis, theoretical generalization, and an expert survey. The paper provides a taxonomy of digital technologies that may be used in teaching foreign languages and will significantly increase the efficiency of training specialists with knowledge of foreign languages. It is concluded that the digitalization of foreign language learning is a resource that, in combination with traditional methods, will allow modernizing and intensifying the educational process overall.

Keywords:

Digitalization of Higher Education, Digitalization of Foreign Language Teaching, Digital Technologies, Future Specialists, Foreign Language.

RESUMEN

El momento actual exige una introducción activa de la tecnología digital en el proceso de enseñanza de lenguas extranjeras. La aplicación de la tecnología digital en los centros de enseñanza superior es indicativa de una nueva etapa en el aprendizaje de lenguas extranjeras por parte de especialistas con ayuda de la digitalización. El estudio pretende corroborar el impacto de la

digitalización en el aumento de la eficacia de la formación de especialistas conocedores de lenguas extranjeras. El objetivo de la investigación se alcanza utilizando el análisis sistémico, la generalización teórica y una encuesta a expertos. El trabajo proporciona una taxonomía de las tecnologías digitales que pueden utilizarse en la enseñanza de lenguas extranjeras y que aumentarán significativamente la eficiencia de la formación de especialistas con conocimientos de lenguas extranjeras. Se concluye que la digitalización del aprendizaje de lenguas extranjeras es un recurso que, en combinación con los métodos tradicionales, permitirá modernizar e intensificar el proceso educativo en su conjunto.

Palabras clave:

Digitalización de la Enseñanza Superior, Digitalización de la Enseñanza de Lenguas Extranjeras, Tecnologías Digitales, Futuros Especialistas, Lengua Extranjera.

INTRODUCTION

Today, digitalization of higher education is not simply a priority and urgent requirement of the time, but one of the newest conditions of the existence of the modern education system. The 21st century requires specialists in any profession to be proficient in digital technology and, most importantly, utilize it in practice. This competence will markedly raise specialists' professionalism and open more opportunities for professional self-realization (Alakrash & Razak, 2021).

Foreign language learning is a component, or rather an inextricable part of vocational training that facilitates the development of universal soft skills (Ufimtseva, 2020). Proficiency in a foreign language and communication in it with other speakers is a common norm and practice for specialists in various industries. Therefore, there is an urgent need to find methods to raise the efficiency of foreign language learning.

Practice demonstrates that foreign language teaching at higher education institutions is now carried out with advanced teaching methods. Teachers are required to have mastery of various techniques and new approaches to delivering educational material to students, as well as be well-versed in the specifics of applying particular techniques in the educational process (Akhmetshin et al., 2021; Polozhentseva et al., 2023). Modern educators need to teach students foreign languages with methods that ensure efficient acquisition of knowledge of a foreign language. However, the choice of foreign language teaching methods has to also rely on the context and specific goals of training (Borodina et al., 2023).

One of the advanced solutions to this issue is the digitalization of learning, which allows intensifying the educational process, increasing the level and quality of perception, understanding, and assimilation of educational content, as well as the level of motivation. Every year, various platforms for learning foreign languages and innovative and interactive tools are developed and effectively applied in practice to help students better assimilate the learning material.

Researchers argue that digitalization is oriented on training specialists that are guaranteed to be demanded in the labor market, proficient in mobile and Internet technologies, and focused on continuous learning (advanced training) by means of digital technology (Artamonova et al., 2022). Along with the need for digital skills, specialists are required to know foreign languages, which belong to soft skills. Optimization of teaching foreign languages to future specialists with the use of digital resources contributes to a comprehensive realization of the person's cognitive, communicative, digital, motivational, cultural, sociocultural, creative, and innovative potential. This, in turn, ensures successful socialization and professionalization and raises the individual's competitiveness in the globalized labor market (Prasojo et al., 2017).

A conclusion drawn by Yu et al. (2022), is that the digitalization of education is already changing the traditional education system, which entails a considerable increase in the number of virtual educational platforms, increased use of a single electronic resource multiple times to provide educational services of different content, and the implementation of new educational technologies and digital platforms offering educational services.

There are numerous positive aspects in the development of a modern person in the conditions of digitalization. The leading facets highlighted by researchers include:

- - Use of modern information technologies, computer-information systems to support the educational process, numerous Internet resources, and digital educational information platforms provide for the development of more economic and rational thinking in future specialists (so-called algorithmic), develops logical abilities, the ability to plan their activities, exercise control and self-control, and model all kinds of phenomena and processes. This kind of training will therefore contribute to the development of the general culture of thinking;
- Development of an active position in life, the person's involvement in the system of social relations (Gallardo Echenique et al., 2015);

- Wide access to various information retrieval systems, which contributes to the development of the activity, independence, initiative, and creative abilities of the person (Elisafenko et al., 2019).

The use of digital resources in the learning process solves several didactic tasks: increasing the intensity of the learning process; providing instant feedback (Raju & Annigeri, 2014); building sustainable motivation for cognitive activity; activating mental abilities; engaging passive students (Wang & Huang, 2019); developing skills and abilities to ensure information and digital competence; forming elements of abstract and logical thinking; promoting the individualization and intensification of learning; teaching students to work independently (Kapustina et al., 2022).

However, as researchers note, domestic universities are facing several present-day challenges related to the digitalization of the educational process, such as the search for a model of digitalization by each higher education institution within a certain autonomy (Avdeeva et al., 2022); the need to form an optimal structure of higher education and combine its components into an effective system that forms the basis for a digital university (Zabolotska & Bakhov, 2022); combining the ICT elements available at every university and the technical means of learning offered by effective digital tools (Panova et al., 2023); replacing the traditional "classroom" educational space with a virtual network one (Shapauov et al., 2023); establishing effective communication of all participants in the educational process in the network environment (Uteuliyev et al., 2023).

Our analysis of studies on the digitalization of future specialists' training in foreign languages suggests an interpretation of this concept as a complex process in which the means of a foreign language with active use of digital resources are employed to develop the ability of future specialists to achieve mutual understanding and interaction with foreign partners both for personal and professional purposes verbally and in writing; their ability to analyze and use various professional information presented in foreign-language sources in the respective industry to further apply it in professional practice.

Research findings suggest that active application of digital technology in foreign language classes grants broader access to authentic information, affects all channels of perception due to the use of multimedia technology (text, graphics, sound, animation, videos) (Zhang et al., 2020), and promotes motivation in the learning process.

The authors, Pertsev et al. (2023) concludes that learning with digital technologies is beneficial for listening, speaking, and writing (especially notable is the improvement in writing speed and the depth of discourse in these texts).

In this way, we can conclude that digital educational technologies are part of a new methodology for teaching foreign languages in general. They can provide a powerful educational potential for optimizing the professional training of specialists with knowledge of foreign languages.

The purpose of the present study is to substantiate the impact of digitalization in improving the efficiency of training specialists with knowledge of foreign languages.

In connection with the set research goal, we sought to answer the following research question: What are the digital technologies that can be used in teaching a foreign language?

MATERIALS AND METHODS

The theoretical foundation for the study is comprised of an array of scientific studies on the impact of digitalization on the training of specialists with knowledge of foreign languages, the selection of which was carried out at the first stage of the study. The scientific sources were collected from the international databases Web of Science and Scopus with a restriction on the date of publication to no more than 10 years ago.

Proceeding from an analysis of scientific sources, we systematized and summarized the digital technologies that can be applied in foreign language teaching. This process involved the methods of systemic analysis and theoretical generalization.

The second stage of the study involved the sampling of experts. The selection criterion was the presence of experience teaching at Russian universities and no less than 10 years of research experience in the sphere of foreign language teaching. The chosen experts (66 people) were invited to participate in the survey via email.

A total of 61 people agreed to take part in the study, after which they were sent emails asking them to rank by level of significance the digital technologies that can be utilized in foreign language teaching by assigning them points. The rank and weight of the technologies evaluated were determined according to experts' ratings, and the final values of these indicators define the importance and priority of the respective digital technology.

RESULTS AND DISCUSSION

Considering the issues of improving the efficiency of training specialists with knowledge of foreign languages, based on systematizing and generalizing the practice of

application of digital technologies, we propose the following taxonomy of digital technologies, dividing them into several groups (Table 1).

Table 1: Digital technologies that can be used in foreign language teaching.

Digital technology	Examples	Rank	Weight
Learning management systems (LMS)	Moodle, Google Classroom, WebCT, Blackboard, Canvas, and other platforms to host online foreign language courses	1	0.34
Mobile applications	foreign language learning software for smartphones, tablets, and other mobile devices	4	0.11
Educational online resources	online platforms, online courses, online master classes, virtual reality	2	0.25
Synchronous and asynchronous communication tools	messengers, video conferences, e-mail, chats, forums, webinars, online projects	5	0.08
Assessment and feedback systems	electronic testing (Google Forms, Moodle), reflection (audio or written feedback), electronic notes (Pages, Trello, Evernote)	3	0.17
Tools/systems for publication and shared access/interaction	YouTube, podcasts, cloud services, electronic books, video lectures, Google Docs, blogs	6	0.05

Note: summarized by the author based on the analysis of scientific literature and evaluated based on the expert survey; the concordance coefficient $W = 0.72$ ($p < 0.01$), suggesting a strong consistency of expert opinions

Based on the systematization and generalization of current studies on the introduction of digitalization in foreign language training for future specialists, we have allocated effective digital technologies that allow optimizing the training of specialists with knowledge of foreign languages.

First and foremost, among such tools, we should note Learning Management Systems (LMS). These software applications enable detailed and systematic planning of the educational process, considering the individual features of future specialists, and allow authorizing all learning process participants to provide them with 24-hour free access to educational materials, which makes their independent work more effective, as well as monitoring and evaluating their concrete results. The most commonly used LMS are Moodle, WebCT, Blackboard Learning System, Google Classroom, etc. (Panova et al., 2023).

Regarding the use of Internet-based educational resources in foreign language education, researchers identify three types of platform solutions (Wang & Huang, 2019) that are used in the educational process, in particular in the training of professionals with knowledge of foreign languages:

1) Multidisciplinary platforms: the content of these platforms is comprehensive and covers the humanities (e.g., society, education, art, science, etc.). The content is created in cooperation with well-known schools, competent teachers, and professional teams;

2) Streaming platforms: the distinctive feature of this type is high interactivity. Compared to video recording, live translations, and other forms of online learning, streaming provides effective communication and interaction, allows answering questions in time, and maximizes the reproduction of autonomous learning, while educational technologies become more effective. Online streaming allows the teacher to monitor students' learning process, motivating them to focus on the class, and ensure effective learning time and a proper level of absorption of material by students. Streaming platforms not only improve the quality of video recording but also have a beneficial impact on the development of distance learning;

3) Specialized platforms for learning a foreign language, including software for learning vocabulary and listening in a foreign language; video materials with subtitles; exercises on listening, speaking, reading, and writing in a foreign language; opportunities to practice foreign language skills for business communication.

Furthermore, an important role in specialists' foreign language training is played by virtual reality. Online games, real-time simulation programs, virtual labs, excursions, meetings, etc. allow plunging into the situation of future professional practice, as close to the real settings as possible.

An indispensable component in the digitalization of foreign language teaching at technical universities is the set of resources to assess learning outcomes and establish feedback, for example, online testing (Google Forms, LearningApps, Quizizz, Online Test Pad) (Borodina et al., 2023), reflection (audio or written feedback via Google Mail, Telegram, etc.).

A study by Andreeva et al. (2022), also shows that broad opportunities for the organization of foreign language classes are offered by mobile devices. Working with smartphones and tablets allows students to work on foreign-language materials and encourages them to have creativity, mobility, and flexibility in thinking. Tasks that presuppose the use of mobile devices facilitate the development of communicative, intercultural, informational, cognitive, and social competence.

Working with mobile devices promotes personalized learning of students, provides plenty of opportunities for differentiated, autonomous, and individual learning, as well as promotes the introduction of innovative forms of teaching and the expansion of traditional forms of foreign language teaching. A fundamental innovation in the field of learning is the interactivity of mobile applications, which provides opportunities for active learning of lexical units and the skills of their identification, which significantly reduces the time of development of foreign-language lexical competence.

As argued by Kapustina et al. (2022), synchronous communication organized through synchronous tools (Skype, ZOOM, Google Meet, Webex Webinars, Viber, WhatsApp, Telegram, Discord) provides an opportunity to supplement the LMS and implement not just the exchange of information, but communicative interaction of partners in a foreign language. The latter is quite significant given the insufficient number of academic hours allocated for foreign language training at technical universities.

In addition, both teachers and students can use various aids during video conferencing, such as presentations (created using graphical tools), audio and video materials, and various Internet resources. The use of authentic audio and video recordings, the content of which is directly related to the situation of the future profession, speeds up the adaptation of future specialists to professional practice in a foreign language environment. In the course of a web conference, as pointed out by Gallardo Echenique et al. (2015), it is important to maintain students' constant active participation, as they should be full-fledged and proactive subjects of the educational process.

Asynchronous tools effective in the foreign language training of future professionals are those that allow exchanging information with a time gap/delay (chats, forums, blogs, etc.).

Among the tools for publication and shared access/collaboration include are podcasts, which are audio or video files that are streamed online and can be downloaded and played on a computer or mobile device. In addition, many other Web 2.0 tools use sound recording, so for most users podcasting now means creating and distributing sound files online.

Another option is to record a screencast where the teacher will correct the text and explain the errors while presenting the correct pattern of pronunciation. This approach is much more effective than checking a draft text. Students watch the recorded video, change their text according to the tips, and then record themselves reading the text. This corrective feedback takes less time than a traditional text correction. In addition, students receive additional practice in listening (Uteuliyev et al., 2023).

In foreign language training, it is rational to utilize cloud services to store electronic documents, tables, charts, reference schemes, forms, presentations, images, etc. Cloud service accounts allow making various presentations, spreadsheets, schemes, smart cards, and text documents online, including in a foreign language. They provide an opportunity to engage the teacher in a discussion of a ready-made information product created by the applicant to make amendments, express wishes, comment on the entire work or individual fragments, propose ideas for its improvement, etc.

We would like to stress that foreign language teaching in the context of digitalization also has implications for teachers, as they are the ones who integrate technological tools into the educational process and are pedagogically responsible for the targeted use of technologies and the effectiveness and efficiency of digital learning for students. After all, the choice of digital tools depends only on the conscious choice and methods of the teacher.

CONCLUSIONS

Digitalization of foreign language training is a resource that, together with traditional ones, will modernize and intensify the educational process overall. Digitalization makes educational information extremely accessible in terms of its free use on different platforms, interfaces, or devices.

Our findings demonstrate that digitalization of foreign language training of future specialists is a demand of the time and offers the following opportunities: to ensure constant constructive feedback between all subjects in the learning process; to create equal opportunities for students and teachers to access communication (particularly communicative interaction in a foreign language) regardless of their physical attention and at a time convenient for every participant; to organize a student-centered educational process with subject-subject interaction whereby all events are aimed at providing each student individually and all

of them together with the necessary information around the clock in both offline and online modes; to demonstrate educational materials in the foreign language online in real time and expand access to educational resources; to ensure optimal flexibility for learners through the possibility of round-the-clock access to information in real time (at any time of the day and in any place with Internet access and appropriate technical means); to visualize learning and the information presented by the teacher, to demonstrate to all educational process participants the results of their own work through presentations, reports, etc.; to bring communication and interaction closer to natural conditions, to realize live communication with native speakers through virtual meetings, etc.; to increase motivation and interest in learning, to intensify students' learning and scientific and technical activities, to strengthen their interest in learning the foreign language; to realize the opportunities of distance or mixed forms of training; to effectively organize independent learning; to stimulate students' self-study, self-development, self-improvement, and self-actualization.

To raise future specialists' foreign language proficiency, the educational process should be grounded in both traditional teaching methods and digital technologies of instruction. This is explained by the fact that the use of digital technologies without cooperation with traditional teaching methods cannot fully accomplish the tasks of foreign language learning envisaged by the curriculum.

Prospects for further research can be seen in the detailed analysis of all the digital technology tools to apply them in the process of training specialists with knowledge of foreign languages.

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