Integrating Digital Technologies in Teaching Reading through ESP to Engineering Students

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Abstract. Currently, the most crucial social order is to prepare specialists with a number of professional and general cultural competencies. Taking into account that reading is believed to be both a part of a basic literacy and an important component of engineering profile student competences, it is essential to plan teaching reading in the university curriculum. The paper examines the distinguishing features of teaching reading in a foreign language to non-linguistic students in the digital age. The authors present a combination of the traditional reading techniques/strategies and the new ones as an effective means of teaching reading since the digital age has changed the characteristics and the notion of reading. A comprehensive theoretical background of teaching reading is provided. Apart from reading models (bottom-up, top down), types (synthetic, analytical, independent, guided, study, communicative, extensive, intensive) and strategies (scanning, skimming; inferring, monitoring or clarifying, searching and selecting, visualizing and organizing, questioning, SQ3R/SQRRR), special attention is given to the characteristics of the professional texts for students and the types of text tasks. In addition, the authors use the basic principles of language education in the framework of digital technologies in teaching reading.

Keywords: digital technologies, teaching English for specific purposes (ESP), students of engineering profile, teaching techniques and strategies, professional authentic texts.

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Research area: pedagogy.

Интеграция цифровых технологий в профессионально-ориентированное обучение чтению студентов инженерных направлений

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Аннотация. В настоящее время актуальна задача подготовки специалистов, обладающих профессиональными и общекультурными компетенциями. Учитывая, что чтение является базовым навыком функциональной грамотности, а также важным компонентом формируемых компетенций у студентов инженерных направлений, подчеркивается необходимость тщательного планирования обучения чтению в вузе. В статье рассмотрены особенности обучения чтению на иностранном языке студентов нелингвистических специальностей в эпоху цифровых технологий. Авторы представляют совокупность современных и традиционных методов/стратегий чтения в качестве эффективного средства обучения, следуя изменениям в его характеристиках и понятиях в эпоху цифровизации. Дана общая теоретическая основа обучения чтению. Особое внимание уделяется как моделям (снизу вверх, сверху вниз), типам (синтетическое, аналитическое, независимое, управляемое, учебное, коммуникативное, ознакомительное, изучающее), стратегиям (сканирование, беглый просмотр, вывод, мониторинг или уточнение, поиск и отбор, визуализация и организация, чтение с вопросами, SQ3R /SQRRR (Оценить – Задать вопросы – Прочитать – Запомнить – Подвести итоги) чтения, так и специфике текстов профессиональной направленности, типам текстовых заданий. Кроме того, авторы используют основные принципы языкового образования в рамках внедрения цифровых технологий обучения чтению.

Ключевые слова: цифровые технологии, обучение английскому языку для профессиональных целей, студенты инженерного направления, методы и стратегии обучения, аутентичные тексты профессиональной направленности.

Научная специальность: 5.8.7 – методология и технология профессионального образования.

Introduction

For a very long time, reading has been believed by far to be "the most significant life skills and even the most essential of the other four skills in a second language, especially when English is either a second or a foreign language" (Amirian, 2013: 23).

It is true for the 21st century, as well. "The skills required in a digital society include first of all communications skills of reading, speaking and writing coherently and clearly" (Bates, 2019). Digital media make it possible for millions of people to have "access to texts that would otherwise be beyond their reach" (Baron, 2017: 19). So, to do the job and interact with the community, to achieve the aims, to improve knowledge, and therefore to have potential and to be successful in this digital age, people need to gain a thorough understanding of vast information in all its forms. Thus, language proficiency (in English) as a component of basic literacy – "the ability to read, write, listen, and speak – is even more important than ever" (21st Century Skills, 2003).

Moreover, the skills needed to negotiate the complexities of life change as society changes. Although the four basic language skills are paramount, today people must be able to "decipher meaning and express ideas through a range of media" (21st Century Skills, 2003). Nowadays, it has commonly been assumed that digital technology is affecting what we mean by "reading". The meaning of the verb "to read" under the influence of digital technologies shows itself in changing the reading nature and reading process. Reading in the digital age is characterized by loss of concentration due to distraction; exchanging linear reading for searching or skimming; "shrinking expectations about reasonable text length, and assumption that "reading" should include instant access to other resources, etc." (Baron, 2013). The up-to-date notion of reading structurally privileges locating information over deciphering and analyzing more complex text. (Baron, Naomi, 2013).

Undoubtedly, the abovementioned changes become increasingly important in planning educational curricula.

On the other hand, English for specific purposes (hereinafter ESP) teaching has also undergone a myriad of changes due to the digital technology having facilitated and augmented language learning to a great extent. Being of the highest importance, teaching reading is not an easy task. Especially when reading is taught to a non-native speaker of English it involves "distinctive challenges and problems at any existing level of studying" (Amirian, 2013: 25). The major concerns of teaching ESP reading have always been connected with the analysis of needs and texts, and learners' preparation to "effectively communicate on the tasks set at the classes or situations at work" (Amirian, 2013: 26). With the advent of digital technologies, the conventional teaching methods have been complemented by providing digital tools and ensuring access to digital libraries as well as dictionaries and thesauri. This integration facilitates the teaching process a lot and changes the role of teacher, at the same time.

Taking into account the importance of teaching ESP reading and changes both of this process conditioned by digital technologies and of the nature of reading itself, the study presents an attempt to analyze the distinguishing features of teaching the students of non-linguistic universities to read a foreign language in the digital age.

Theoretical background

Being an important skill reading is discussed by many scientists from Russia and abroad. The grounds for the essence of this skill and the reasons motivating its use can be read in the work of Grabe and Stoller (2001), Bernhardt (2000). The attention to such major points as the concept of reading and the elements it consists of is described in the researches made by Dora Chostelidou (2012), Grabe & Stoller (2002), CEF (2001), Dudley-Evans and St John (1998), Jordan (1997). The problem ap-

pearing when reading is analyzed by Freese (1997), Sellers (2008).

The necessity to develop reading as a way to get the necessary information is determined by the extensive use of English in academic literature along with the growth of electronic communications. Therefore, the professional environment requires specialists with good reading skills, which in turn affects the requirements for undergraduates and postgraduates, described by Mc Donough and Shaw, 2003; Grabe and Stoller, 2002; Grabe, 2009.

The issue of teaching ESP in linguodidactics and teaching philosophy has been studied for the last several decades. It is the subject of studies in the works of well-known Russian scientists like Folomkina S. K., Galskova N. D., Roshchina E. V., Zimnyaya I. A. et al. Generally, they consider reading as a basis for teaching other skills meaning it both a way to form professional communicative competence and an essential condition for developing a successful specialist. Zimnyaya I. A., Klychnikova Z. K., Folomkina S. K. esteem reading within the cognitive approach. However, S. K. Folomkina distinguishes the special features of the professionally-oriented texts such as motivating content, authenticity, completeness, information intensity and others. Yu. V. Chicherina adds correspondence of the texts with students' needs, their cognitive and communicative interests and speech abilities. While according to S. I. Sharapova's opinion valued characteristic of the material is learner's aspiration to get interesting and essential for their future profession information.

The discussion of teaching reading for ESP to the students of university is presented in the publication of E. N. Grinko. The author raises the problem of the authenticity of texts, defines their distinctive features and specifies the stages of reading relying on the learning aims. The similar issue is considered in the study of I. N. Tabueva who focuses on teaching ESP reading in a non-linguistic university. The researcher reveals the concept of this aspect and suggests some methods and means to conduct such classes and control them. Moreover, different approaches are considered to make the learning process more efficient. Teaching to

read professionally oriented texts in linguistic university without the use of computer technology was widely discussed by such authors as A. S. Balakhonov, N. N. Nizhneva, E. V. Krylova, S. N. Makarova, M. V. Valova et al.

It should be noted here that the theoretical professionally oriented part of foreign language reading was developed by T. S. Serova (1988, 1989) and later it was continued in the works of T. G. Agapitova (2000), M. S. Grishina (2003), S. G. Ulitina and others. The review of methodological literature shows publications devoted to the description of teaching foreign language reading peculiarities. One of the relevant studies belongs to Yu. N. Buzina (2000) who analyses the problem of organizing students' self-directed learning on English texts in economics. While S. A. Fomin considers the possibilities of using computer programs for teaching learners to skim engineering and economic texts.

Apart from that Russian and foreign literature on methodology highlights some aspects of learning a foreign language using computer technologies. For example, D. D. Klimentiev focuses on adults' autonomous computer training to read in English. E. L. Dmitrieva developed a methodological basis for distant learning reading in foreign languages hosted by computer telecommunications. The problem of designing a computer textbook for universities is presented in the study of M. R. Melemud.

The study of the organization of work with professionally oriented texts in teaching a foreign language using digital technologies is the subject of the research efforts of such Russian and foreign scientists and educators as V. V. Vonog, O. A. Prokhorova, Yu. I. Davydenko, I. Yu. Konoreva, S. V. Titova, E. S. Polat, P. V. Sysoev, L. V. Shkerin, V. A. Shershneva, V. N. Sidorov, T. V. Sidorova, K. V. Safonov, I. B. Korotkina, E. V. Talalakina, K. Facer, Otto Peters, J. Watson, D. Whitelock et al.

The authors of the research paper "E-learning in Tertiary Education: Where Do we Stand?" consider E-learning as informational and communicational technology (ICT) designed to boost and/or inspire learning in tertiary education. It covers a wide range of systems, from students using e-mail and accessing

course work online while following a course on campus to programmes offered entirely online.

Otto Peters in his investigation "Digital Learning Environments: New Possibilities and Opportunities" convinces that "Tertiary education institutions generally feel that e-learning has a broadly positive effect on the capacity of teaching and learning, although few have been able to offer detailed evidence. There is much indirect evidence, including student satisfaction surveys, but these may not be enough to offset the prevalent doubt about the pedagogic value of online learning among students and academics. Digital learning environments open up new opportunities and chances not only for heteronymous but also for autonomous learning". (Peters, 2000: 17)

The issue of digital storage of an unlimited amount of authentic information is discussed by Watson (2008). Special concern is paid to increasing the autonomy and independent work of the student when working with hypertext and web pages by Titova, 2017; Sysoyev et al., 2015; Prokhorova, Vonog, 2015; Whitelock, 2008.

There are some papers where authors identify problems, propose teaching methods, and assess the advantages and disadvantages in the context of digitalization. For example, Yu. I. Davydenko in the article "Teaching autonomous reading in a foreign language at a technical university: criteria for selecting text material" (Davydenko, 2017: 54) identifies the problems that hinder the effective teaching of a foreign language and suggests ways to solve them by creating an information and communication learning environment for learning. In his other work titled "The learning of autonomous foreign language reading in technical university: criteria for the selection of textual material" (Davydenko, 2017: 55) Yu. I. Davydenko reveals the advances of the technique enhancing the impetus of students, which in turn, tends to a meaning increase in the effectiveness of foreign language learning. The article also deals with the criteria for material selection in teaching students to read profession-oriented texts in a foreign language.

The role of increasing students' interest and motivation in learning foreign languages through a variety of educational materials, different from traditional ones, is studied by Polat (2010) and Shershneva et al. (2016).

L. A. Sobinova in the article "The content of the methodology for teaching professionally oriented foreign language reading for students of a technical university using an electronic textbook" (Sobinova, 2017: 94) suggests a methodology for teaching professional texts using an electronic textbook. This methodology includes four main blocks: target (setting goals and related tasks), methodological (defining approaches, teaching principles and creating favorable pedagogical conditions), meaningful (language and speech material) and effective (nomenclature of skills being developed).

The relevance in the application of information and communication technologies in teaching autonomous reading of authentic materials in a foreign language, primarily in functionality, in an orientation towards using real communication is determined by Prokhorova, Vonog (2015). According to the research results in the article "Model of teaching reading professionally-oriented texts in the context of digitalization" (Vonog, Polikarpova, 2019: 37) represent a model (algorithm) for independent reading teaching within the blended learning course "Foreign Language for Graduate Students (English)" placed on the LMS Moodle platform.

Methods

With the drastic changes in digital technologies and tools there appeared the necessity to use new methods of teaching reading professional texts. The main focus for university students is reading mastering and understanding specific content synchronically, for teachers it is choosing the most productive tool and/or resource from a great number being available to date.

According to the curriculum including "Foreign language" (English) and "Professional foreign language" (English) practicals, the competence-based approach is considered to be leading in teaching students of engineering courses in Siberian Federal University (Krasnoyarsk, Russia). It is essential for each student to get some knowledge, develop special skills

and abilities, build depth and breadth in his major. Thus, to teach reading through ESP we should be critical in choosing information resources or data widely used by engineers and vital for their professional areas. "When selecting texts, three principles are preferable:

1. *Professional significance.* The reader is not interested in all the information in the texts offered to him, but only the information that has professional value, i.e. it is able to satisfy reader's informational and cognitive needs.

2. *Communicative orientation.* Textual utility and integrity reflecting the real activity of indirect communication in modern engineering and professional sphere are notable.

3. *Authenticity.* The texts for teaching reading should be authentic according to their structure, content, and design. At the same time long texts may be shortened so that they do not change the lexical, grammatical structures, and integral perception". (Drozdova, 2009: 71).

For reading we used such authentic materials (journal articles, monographs, theses, reports, patents, manuals, leaflets, interviews, blog posts, e-books) which had been filtered through the subject content (thermal, electrical, mechanical, transport and civil engineering, physics, radio electronics, architecture, design, military), exploitability, readability, variety, and presentation criteria; the elements of a digital learning platform MOODLE; online courses of Coursera; a video conferencing service Zoom (for one-on-one meetings, group video conferences and screen sharing).

The nature of reading process is determined by the following methodological principles: communicative orientation, informative orientation, improving learning outcomes. They help develop a pedagogical "tools set" for teaching reading through ESP.

The elements of both bottom-up (scrutinizing vocabulary and syntax) and top down (obtaining global meaning of the text through the "clues") models of reading were processed with the students of Siberian Federal University, namely undergraduate and postgraduate (master's level) students of Polytechnic School, School of Engineering and Construction, School of Engineering Physics and Radio Electronics, School of Military Training,

during in-class/home/MOODLE/Coursera/Zoom periods, preparing for their gist reading and translating parts of the final examination in the course "Foreign language" (English). These parts were assessed according to three analytical criteria: lexical resource, grammatical resource, accuracy. Senior lecturers and associate professors from Department of Foreign Languages for Engineering Science paid attention to a range of knowledge, skills and understanding of everyday vocabulary, set expressions, proper names, technical terminology, temporal structure of the source text, syntactic complexes, use of grammatical transformation (substitution of word forms, parts of speech replacement, changes in word order, sentence members, sentence types and types of syntactic relations, addition, omission), narrative logic and style.

The nature of reading authentic materials with specialized terminology and general terms is rather bewildering. It needs conscious understanding and assessing of strengths and weaknesses, diagnosing barriers to reading development of non-linguistic students. Such diagnostic assessment will be equally beneficial for both learners and teachers.

In this paper an overall construct of reading professional materials was valued in details according to four attributes, rings/layers represented in Fig. 1. The diagram offered by Sainsbury et al. (2006) visualizes the main reading processes: decoding, comprehending, responding, analysing.

"Decoding" ring indicates that students' ability to translate English written words into their spoken Russian form underlies all other reading processes within it. Non-native speakers of English decode a source text and investigate such areas as visual memory, use of analogy, phonological awareness (in aloud reading).

In a "comprehending" layer grammatical and lexical knowledge of ESP learners is combined with recognising the written form of the English word, so that the students can attach meaning to the word/sentence/passage/text.

The third ring is "responding". Here, the reader engages intensively with the text, responds constructively to it in order to build a personal understanding, to make meaning. For
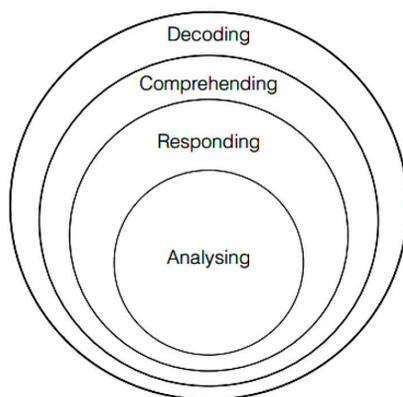
Fig. 1. Diagram of the construct of reading

teachers, firstly, it is preferable to use shared and guided reading with modeling the processes of making sense of ideas and themes in English texts. Secondly, it should become the study of special (technical) content.

"Analysing" layer is related to the reader stepping back from the meaning. Active reader considers authorial techniques and literary traditions used in the text production. That is more conscious part of reading.

Such assessment gave rise to indicators that guided teaching reading professional texts, identified problematic areas precisely, prescribed remedial actions, directed reading activity and university students' progression in reading generally.

The crucial part of the paper is to make reading purposeful. The importance of natural identifying the purpose is highlighted. It should not be just explained to the students. The best way is to use the context in which the reading takes place. If a learner knows he is reading a text to find the best way of treating metal billets, to judge the suitability of certain methods of measuring radio interference, to explain the argument of using carbon tetrachloride to a colleague, to write a detailed critique of non-renewable energy sources, for example, the task will be appropriately approached without needing specific detailed instructions.

To characterise the ways used by students to construct meaning from the written English words in their engagement with a text four reading aspects were intensified, i.e. "forming a general understanding", "examining content and structure", "making reader-text connections", and "developing interpretation".

In the present paper the model of students' online reading behaviour was emphasized.

Online readers are commonly affected by different factors before and while the act of reading: their language skills, web skills, vision skills (seeing possibilities), prior belief and knowledge, reading styles, reading goals and strategies. Nowadays learners are confronted with web technologies offering potentially vast amount of new research tools and online professional texts. During online reading undergraduates and postgraduates of Siberian Federal University handle multiple technical texts in English at MOODLE and Coursera platforms, concurrently displayed texts of various web pages. Students sort, navigate, respond (can summarise, copy and paste any pieces of the text), file the information. After that, in general, they produce any written output.

The key elements of online reading were stressed as the list of seven computer processes: "start, non-task activities, retrieving or reviewing navigation goal, visiting the website, working with the writing task, non-task activities, stop" (Harrison, 2004: 137).

To make reading of technical texts more effective, to improve non-native speakers' understanding about data and facts they have read we used in our research such methods as scanning, skimming; inferring, monitoring or clarifying, searching and selecting, visualizing

and organizing, questioning, SQ3R/SQRRR (Survey, Question, Read, Recite, Review).

Results

The development and application of modernizing technologies within the framework of technologization of all spheres of human activity requires the development of new techniques in foreign languages teaching, forming a new educational space. Teaching foreign languages theory and methodology require the development and application of new forms of education that can function in a new information space using computerized network technologies. Requirements for digital communicative competence of foreign language teachers are growing rapidly with the improvement of computer technology, software, and databases. University professors are known to have become witnesses and direct participants in a sharp breakthrough developing and using these technologies. The impetus for such changes could be assumed to be partly the threat of the corona virus infection pandemic, the need to introduce distance learning. And as a result of the above mentioned reason, the emergence of large cellular companies that develop applications for users, which a teacher can compose and put into practice his personal training programs, such as MOODLE, use ZOOM in organizing distance learning on a personal computer while staying at home in self-isolation. The goal of teaching a foreign language course at a non-linguistic university is to master students' communicative competence (i.e., the ability to correlate linguistic means with specific areas, situations, conditions and communication tasks), the level of which at certain stages of preparation allows to use the language in oral and written communication, and for self-education, reading scientific texts.

In modern conditions, reading in a foreign language as a form of speech activity and as an indirect form of communication is, according to many researchers, the most necessary for graduates of technical specialties of universities. The great importance of this type of speech activity is necessary for the replenishment of professional knowledge, development of other communication skills. Specialists should be able to select and interpret the important information from special texts. Therefore, student must drill their reading abilities during studying process at all stages of learning. It is known that reading is a motivated, receptive, mediated type of speech activity, proceeding in the internal plan, aimed at extracting information from a written provided text, proceeding on the basis of the processes of "visual perception of the resource of an arbitrary short-term memory and recoding of information". (Smolyaninova, 2020: 1431). To teach reading professionally orientated texts, it is required to select professional literature, create the latest textbooks and e-courses.

There are many factors according to which professionally oriented texts are chosen: authenticity, professional content, correlation with the university curriculum, the relevant professional terminology subsistence, the feasibility of linguistic and professionally oriented information content of the text for a target audience and information content. By means of computer technology in the selection of text material, the teacher today has great opportunities. Reading texts should be processed and adapted, that means, use: shortening, replacing complex grammatical structures with simpler synonymous ones, preserving terminological vocabulary, internationalisms unfamiliar but understandable lexis. Texts should be accompanied by a vocabulary list for the text, use illustrations, footnotes, tables, diagrams, and graphics. The adaptation of the texts assumes some changes in content and grammatical structure as a result the text loses its authenticity and becomes subordinate. Positive aspects of such adaptation are required by individual learners' needs, their level of foreign language and a particular learning aim. The lecturer's objective is "to preserve the integrity and special features of authentic scientific and technical texts, including the word order and grammar structures" (Goryunova, 2011: 62).

According to current educational requirements reading is to be taught to student not only as an autonomous type of speech activity but also as a source for extracting information from the text for solving a specific language problems applying certain reading techniques.

The principle of completeness of the extracted information is distinguished: study, introductory and search-viewing reading. Using the capabilities of the computer to create the appropriate educational material is quite wide, so the preparation of exercises to ensure reading comprehension in MOODLE is very promising. Analytical and synthetic reading requires the use of logical operations. Intensive and extensive reading requires a depth of penetration into the text content. Learning reading / reading for detail or intensive – by target settings. Used in training and introductory reading / skimming, scanning, search and viewing reading. Internet access provides selecting the required level of text in terms of complexity for each type of reading. All of the above methods of teaching reading are actively used in the digitalized space.

Learning reading should provide the opportunity to understand the main and optional facts of scientific texts. In this type of reading, student must have the skill to translate a text with a terminological dictionary and guess the meaning of words by context; realize logical connections in a sentence and between parts of the whole text. Using computer technology, students should be capable of using electronic terminological dictionaries to find the necessary vocabulary quickly, selecting terms from their field of knowledge, knowing the abbreviation, using Wikipedia to find the necessary information. Introductory stage means quick reading for understanding the text content and the ability to choose the main thing from the context.

Skimming is a method of reading the article quickly and obtaining the main idea of a passage. A typical skimming task would be several general questions about the content and the theme of a text. The students would attempt to find the answer quickly in a very short period of time. Such 'speed-reading' or accelerated reading is mainly concerned with finding key points, basic structure of the text. In comparison with skimming scanning is a more detailed method of reading. It involves the whole text processing, searching the clues from the textual layout and the content that will enable students to focus on smaller sections of the passage. Scanning can be summarized as fast reading for gaining individual pieces of information, e.g. numbers, dates, years, facts and other useful details which can be applied in further speaking and written practice.

For future specialists in the scientific and technical field of knowledge, this skill is necessary to work with the latest literature, in the search for the necessary information on the Internet.Time limitation for understanding special texts is a very useful exercise in drilling the reading *skills.* Students should be prepared to ignore unknown words and grammar constructions during introductory stage and pay attention to familiar and key words. The aim is to teach students to synthesize the main idea of the text from the obtained information.

One more important method which allows teaching reading *is search and viewing reading.* It enables students to find out specific keywords and obtain the necessary information from them. To achieve the goal, they are to realize the text structure, read the titles, subheadings, individual paragraphs. Development after textual exercises for information search allows you to effectively teach viewing reading, the skill of which is necessary to find the information quickly required by a specialist.

The aim of the teacher is to make students better readers, to teach them intensive reading, i.e. analyzing text closely and carefully with the objective to understand as much detail as possible in a rather limited period of time. This method usually involves reading the same text a number of times in order to find more useful lexis and important grammar. This is actually the way how competent language users might read authentic texts such as a manual, a leaflet with guidelines or an instruction. Text completion, answering special and general questions, searching for the particular details and necessary information, making a detailed analysis, receiving feedback and other learning tasks help students develop intensive reading skills.

Another effective method for students to become more productive and independent language learners is to include some extensive reading during the learning process. The purpose of reading authentic and professionally oriented texts is to widen passive and active vo-

cabulary, increase student autonomy and overall linguistic confidence, which later influences and improves their skills in other language areas. Students could be given the possibility to choose relevant articles for their personal and professional needs. The more learners read, the more they pick up specific vocabulary and grammar items, terminology needed for further analysis and extending background knowledge. Extensive reading allows stimulating students' independence when choosing the resources, techniques and methods from students' side. Learners act autonomously, analyze the results, define the future perspectives, and use adequate ways of achieving the goals. So, the arguments for actively encouraging students to read more in target language are very strong. The texts for extensive reading are usually authentic without necessary adaptation for learning needs that is why the number of these kinds of texts is pretty high. "Modern information technology presents a text in a form of a hypertext, which includes smaller passages as links following which the student can obtain supplementary information. There are many language corpuses demonstrating how the word is used in various contexts" (Smolyaninova, 2019: 1729).

To understand the text, there are a number of exercises aimed at removing lexical and grammatical difficulties. These are traditional types of exercises, for instance: learning new terms and vocabulary, mastering grammar subfields found in text, paying attention to the text title and illustrations. This can be an assignment to exchange your background knowledge on the topic to which the text is devoted. Such types of exercises are translation of sentences with new words, pairs searching, finding a word and its definition, defining antonyms and synonyms for the certain words, derivative parts of speech with a certain word-formation element formatting.

One more important exercise is to compose phrases from the certain words according to the notion and make sentences with the learned words. For example, a student may have the task to translate English sentences having words or word combinations in Russian which are given in brackets. When work-

ing with the text, you can use silent reading of the text to test your assumptions made in the pre-text stage. An effective task in teaching reading is dividing the text into semantic parts, drawing up a text plan, searching for English equivalents of phrases in the text. These can be exercises to fill in the gaps in the text with deliberately omitted words, determining the correspondence of the proposed information from the text (true/false/ not stated), giving the corrected variant which corresponds to the text. Also, the following tasks should be mentioned: to complete sentences from the worked out theses, find statements with learned grammar structure in the text, provide sentences analyses, translate certain pieces into Russian, look for sentences, stating the main idea from the text. It is possible to use selective or complete reading of the text loudly, as well as passage or the entire text translation into mother tongue. There are exercises that effectively help to understand the text content, for instance, drawing up a schedule, a diagram, a short retelling of the text. When mastering computer technologies, the teacher has the opportunity to create such exercises on an electronic platform and use them effectively in teaching reading.

As it was mentioned above according to the latest research reading authentic and adapted texts in target language is the essential skill for the students of engineering science. This widens professional knowledge, develops communication skills. Even though reading is a receptive skill, its result is applied in productive language skills: speaking and writing. This fact is particularly important for university students taking part in various international conferences and publishing scientific articles, based on their research. They should be taught to extract the necessary facts from the text to solve a specific speaking task.

Consequently, all traditional methods used in teaching reading are suitable for application in digital environment. Thus, in the world of information technologies, there are great opportunities for the selection of texts for the creation of both e-learning courses in reading on the platforms provided by universities, and for the compilation of textbooks with a carefully developed set of exercises. In the digitalized

information space, there are ample opportunities for teaching both studying, introductory, and search-viewing reading. Learning to read should include a system of exercises that train students' ability to improve their reading skills; for this the teacher has many network tools at his disposal for organizing teaching of all types of reading. Modern technologies make it possible to provide equal access for all students to the Internet resources, computers, search for the necessary information quickly and use actively the knowledge gained in work. The ability to implement the basic principles of linguodidactics in the framework of digital technologies, that is: visibility, accessibility, individual approach. Practice shows that the overwhelming number of university professors used this opportunity, a lot of program courses have been created for students. But this direction requires further study and development because: "The created programs reflect mainly an intuitive (scientifically unsubstantiated) understanding of the use of computer programs in language teaching and are not part of the worldview that allows building systemic learning based on computer and network technologies and can be regarded as experimental or as part of an unfinished project" (Gartsov, 2007: 41). Probably, teaching the students of pedagogical universities in the elements of programming can provide a breakthrough in this matter.

Conclusions

To come to the point of the investigation, the authors believe that the process of digitalization that is developing in modern education has affected all aspects in general and reading in particular. Modernizing digital resources integration into educational activities in higher education has caused a rise in the quality of the students' educational environment in technical schools. Moreover, it enables students to acquire skills and knowledge in a more understandable and accessible environment, and to develop their independent work. As a whole, it has increased students infatuation with such a discipline as "Foreign language", stimulated the work of students for the sake of language mastering in the field of their professional competence.

The difficulties of using digital resources in reading are more often associated with orientation in a huge variety of modern online resources. It is reading that creates more issues in solving communication problems than, for example, speaking. Therefore, the study proves that the quality of knowledge acquired by students depends on the method and type of digital reading training in the MOODLE system with free access to the Internet.

Reading constitutes an influational piece of students' foreign language skills. Professional-oriented texts and the appropriate combination of traditional and modern tasks bestow the advancement of reading professional texts level. This means that this approach to reading is the most successful in developing this skill. It allows students to learn critical, more competent reading, distinguish complex grammatical constructions, stylistic techniques, terminological vocabulary, phraseological units, inversion, elliptical constructions, etc. Students can perform text analysis using techniques that allow them to distinguish different semantic meanings, types of texts, and understand the smallest technical nuances of professional texts. What is more, the use of digital resources gives the teacher a wide scope for using various training exercises that develop students' skills in working with text – scanning, skimming, comprehensive, extensive and intensive reading, etc.

Digital resources help students organize independent work when reading and understanding texts, find the necessary information at a convenient time for them.

Thus, the use of digitalization in reading skills allows students not only to master this skill at a high level, but also through reading, to expand their professional skills, which makes them demanded professionals for future workforce. The contribution of this research can play a significant role for the future integration of digitalization in reading.

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