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**TEACHING FOREIGN-LANGUAGE AUTHENTIC READING BY
MEANS OF EDUCATIONAL TECHNOSPHERE**

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Abstract

The article is devoted to a method of improving the efficiency of teaching reading to students of non-linguistic universities and increasing their motivation to learn a foreign language through the use of Internet resources. This method promotes the development of cognitive thinking of students and enhances their educational and cognitive motivation. Reading English fiction is considered as an important process of mastering a modern foreign language, introduction to a new culture, and development of students' cognitive activity. Such an organization of cognitive activity, both in the classroom and while doing homework, allows students to develop independence and perseverance in achieving the goal, which is necessary for a modern specialist. The motivation of students to learn a foreign language is also enhanced by the intensification of independent study work based on Internet resources. The authors understand the term technosphere as a set of objects and processes created by people to meet their needs. The modern tasks of creating the technosphere of a higher education institution in the field of teaching foreign languages include a set of Internet resources that ensure the quality of foreign language education, which corresponds to the social order of the society for an educated, creatively active specialist with the knowledge of a foreign language. The development of the technosphere of a higher education institution should result in the creation of an innovative education system representing new ways of developing the creative personality of students.

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1. Introduction

Modern educational space is rapidly developing and changing. Learning a foreign language is now becoming a necessity for students of any specialization. However, due to the peculiarities of the construction of such training in a technical University, almost no attention is paid to the study of authentic fiction, despite its huge potential. It is worth noting that it is the reading of literary texts that makes it possible to combine learning with education, to motivate students to better assimilate lexical and cross-cultural material and helps socialization in a multilingual society.

Teaching foreign-language authentic reading is usually limited by the syllabus framework of various Humanities and includes works of classical literature until the middle of the XX century. At the same time, a foreign language (for example, English) is constantly changing, new words, phrases, metaphors that are required for the future specialist to communicate adequately in the scientific and working environment appear. That is why, in our opinion, it is necessary to study modern authentic literature with natural sciences students. Such reading can increase their learning motivation and enrich their vocabulary. However, it is necessary to take into account the Informatization of the society and educational space and to use special Internet resources to enhance reading.

In our opinion, Internet resources for working with literary text are a part of the educational technosphere, which is present in each University and includes various technical means of training and information resources, both available constantly and those available only through the Internet.

2. Problem Statement

The question of the problems faced by the teacher dealing with authentic works of art remains relevant. First, it is the selection of material. Most often, it depends on the preferences of the teacher or students, and should be justified by the educational objectives and the way of perception of information (i.e., what student's information channel is leading). Reading is directly related to thinking, and therefore Internet resources, as well as the literary texts themselves, should be carefully analyzed and selected. At this stage, there is an activation of the educational process.

3. Research Questions

"Cognitive [from lat. *cognitio*-knowledge, cognition], book word, is associated with knowledge, with thinking. Cognitive analysis (study of the processes of human cognition of the surrounding world, as well as the ability of a person to acquire new knowledge). Cognitive human system (central nervous system and sensory organs, through which a person learns the world and himself)" ("*Bol'shoj Tolkovyj Slovar'*..., 1998).

Internet resources of the educational technosphere are didactic materials of the new generation. However, it is necessary to make sure that they lead to the greatest, in comparison with traditional, educational effect. To do this, the information must be presented in such a way that the cognitive system of a person could perceive it as quickly and efficiently as possible. From this it can be concluded that the most effective are such electronic educational resources, in which "the principle of cognition is initially laid, in other words, which are most understandable, built and designed so that attention is not distracted, but

focuses on the main supporting points of the new material, allowing to build links between the previously covered material and the one studied now, to understand the usefulness and applicability of new knowledge in everyday life" (Christochevskaya & Christochevsky, 2018, p.7).

The principle of cognitization is closely related to the principle of multimodality, that is, the creation and use of educational resources that are suitable for students with any leading channel of information perception. For our study the work *Multimodal learning through media: what the research says* (2008) was of great help. It presents the principles of obtaining and storing the necessary information. It is indicated that the human brain works sequentially and cannot simultaneously process different streams of information. Therefore, it seems to us inappropriate to use unsystematic and overloaded with information resources that can lead to students' cognitive overload and spoil the full assimilation of information. For example, if the teacher comments on the text at the same time as the reading is going on. In this case, the student has to choose what information to perceive in the first place, and in the end does not perceive anything or perceives discretely, that is, disparate pieces. On the other hand, audio or video subtitles can be effective.

Based on the data from the above-mentioned work, it can be concluded that the use of various multimedia and interactive resources only complements, but does not replace the traditional model of teaching. For example, at the initial stage, the student needs a systematic assimilation of new material - a lecture or when learning to read authentic literature - reading the text. At this stage, any digital inclusion only distracts and degrades the understanding, and prevents grasping the essence and the main provisions.

At the next stage of training, when the student has to work with the text, it becomes justified to attract a variety of online resources that do not necessarily have interactivity, but it does not reduce their effectiveness in the assimilation of new material. The question remains whether it is possible to consider educational materials posted on the website of the publishing house in support of interest in reading a series of books as an interactive learning environment. According to Christochevsky (2014), in such an environment, a student can work independently and effectively enough, having minimal knowledge and skills in a particular area. Interactive learning environment is an Internet resource and, accordingly, a part of the educational technosphere. Currently, there is no definition of the technosphere. From the point of view of the purpose of its formation (Popkova, 2005), one of the four components of the noosphere is most often understood. Technosphere is a set of objects and processes created by people to meet their needs. It can be considered as a sphere of human activity. That is why it should develop innovative educational behavior - a set of motives and actions of the individual, aimed at the creation and development of new, more effective ways to solve educational problems (Zorina, 2017).

The main feature of the technosphere is that, in contrast to the material resources, the stock of which is decreasing when they are being used, the information resources that it is filled with, are only increasing while being used. Educational resources can be divided into permanently accessible and accessible only via the Internet. Both of them can be obtained from outside the educational technosphere of the University, and actually created for it.

Reading authentic literature and working with additional materials on the Internet contribute to the development of thinking and cognitive activity of students. The well-known Russian psychologist Nemov (2007) pointed out that a characteristic feature of adolescence is the readiness and ability to various types

of training in both practical and theoretical terms. Young adults are prone to experimentation, they do not take everything on trust, and this can be an incentive for the development of project and research work. College age is characterized by increased intellectual activity, which is stimulated not only by curiosity, but also by the desire to demonstrate their abilities to others, to get a high assessment from others, thus increasing their own learning motivation. Independence of thought is manifested in the fact that of all the available amount of information only that a particular person seems reasonable, appropriate and useful is accepted.

When using Internet resources of different orientation, a so-called cognitive turn can occur, when cognitive resources, which should best replace impersonal standardized verbal exercises, correspond to the person's methods of perception and processing of information (modality). Cognitive theory of learning is developed in the works of R. Mayer (2009).

Reading and working with the text is the most active consumption of information. George A. Miller (1983), one of the founders of the cognitive psychology, coined the term *informavore* to describe the behavior of humans to gather and consume information. Such people brought up in the technosphere of an educational establishment will be able to freely join the information society not just as consumers, but also as creators. Technology writer Rachel Chalmers (2000) wrote, "We're all *informavores* now, hunting down and consuming data as our ancestors once sought woolly mammoths and witchetty grubs" (p. 1).

Most of the additional information to work with authentic fiction is visualized because "probably the strongest way that visual systems can benefit us is in memory retention. People remember pictures better than words, especially over longer periods. This phenomenon is called the Picture Superiority Effect" (Krum, 2014, p. 25).

Using and creating the resources of the technosphere, students are trying to get the most out of the learning process. This results in:

- increased learning motivation;
- expanding opportunities for the development of creative and intellectual potential of the individual;
- formation of skills to adapt quickly to information technologies and Internet re-sources;
- development of cognitive (cognitive) thinking;
- development of sustainable skills of independent work;

Educational technosphere provides individualization of learning content in accordance with students' age characteristics and their goal setting.

4. Purpose of the Study

The purpose of study is to prove the effectiveness of the use of different means of education with the active reading of technosphere artistic works to improve learning motivation of cognitive thinking development.

5. Research Methods

In the study the analytical, empirical and experimental diagnostic methods were used, including comparing and grouping results, as well as semantic interpretation method of the phenomenon. The leading

method was the method of visualizing learning material using Internet technologies and the projects method.

6. Findings

A modern teacher can use the Internet space to increase students' motivation. It is well known that motivation is an incentive, interest that is the key to successful learning. It is necessary to create such conditions that will encourage the student to certain actions, awaken his desire for learning.

Young adults are no longer attracted by only pictures and entertaining stories, so the methodical mistake is the use of information resources that are not suitable for their age. Traditional ways of engaging in foreign culture, such as reading books, watching movies, listening to music and communicating by correspondence, have changed and expanded significantly with the advent of Internet technology and the creation of educational technosphere.

Let us take, for example, reading authentic literature. In the Internet space, one can find not only the electronic version of the text, an audiobook and a dictionary, but also additional materials related to the use of this work for educational purposes. This differs from the series of books originally adapted for educational purposes (for example, books of Oxford and Macmillan publishing houses) with their colorful visualized content, metasubject content and interactive component.

As mentioned above, the interactive platform (environment) allows students to study additional materials on their own. The most famous of such students' platforms is Perusall (n.d.) which was launched at Harvard University to work with literature for training courses. Its Creator is Eric Mazur is Balkanski, Professor of Physics and Applied Physics and Dean of Applied Physics at Harvard University. Using this platform, teachers send students books and articles that need to be read for class. Students read assignments, write down questions, and discuss abstruse pieces on the forum. The statistics of the platform shows the teacher which fragments caused the greatest difficulties. This allows you to turn a single task of reading in teamwork, active interaction of students.

The Edutainme website ("Platforma Dlya Chteniya...", 2018) describes an experiment conducted to test how the use of the platform is related to academic performance. The researchers observed two groups of physics students. 153 students participated in the study. The same teacher taught the classes, but one group used Perusal and the other did not. The researchers noted how much time students spent reading, how long they prepared for the lesson and how often they returned to the same piece of the text. They collected in-line marks and points for the exam. The results showed that the platform encouraged students to read more. About 90% of students who used Perusall read everything the teacher asked for, except for minor omissions. They spent reading an average of 3 hours and 20 minutes per week. For comparison, 92% of students who did not get the platform read the literature on the course for less than three hours. The Perusall group also passed the exams better (Miller, Lukoff, King, & Mazur, 2018).

Results. Focusing exclusively on the active reading of authentic foreign-language fiction, we conducted an experiment in two age categories of young adults: high and higher schools students. 102 students were involved in the study. In each age category, two groups were created - control and experimental, which were led by the same teacher. None of the participants of the experiment had special humanitarian knowledge, but all were fluent in information technology and had access to Internet resources.

It is well known that many modern and popular among young adults book series have their own sites, where there is not only the opportunity to communicate, but also the opportunity to learn. Most often, they use the technology of edutainment - learning with entertainment.

For high school students we selected the inter-author cycle of novels "39 clues", the founder and curator of which is a modern American writer and teacher Rick Riordan. In these books, against the background of an entertaining story, there are stories about various great people of antiquity: scientists, artists, musicians, poets, etc. On the website of the Scholastic publishing house (Scholastic, n.d.) there is a book club dedicated to this series, in which there are sections both for readers (The 39 Clues Homepage, n.d.) and for teachers (The 39 Clues Education Network, n.d.; The 39 Clues Teaching Resources, n.d.), where there is a variety of games, forums and educational resources. These additional materials are directly and indirectly related to history, culture, geography, mathematics and other subjects.

The participants of both groups were invited to read the first and fifth books of the cycle "39 clues", in order to get an idea of the characters, and secondly, to get acquainted with the only book where the action takes place in Russia. Then, in the control group, the teacher began to work with the text in the traditional way, writing out words, asking questions to check understanding, etc. In the experimental group in the classroom, the work was carried out with the help of special materials for the teacher from the site, and at home, the participants of the experiment could work independently with the learning platform.

Two weeks later, a survey was conducted in both groups to find out whether the educational motivation has increased and whether cognitive thinking has developed. In addition to the two proposed books, in the control group, only 10% of students decided to read more works of this series, while in the experimental group, this percentage was almost half of the participants. Remembering the storyline and historical moments described in the books did not differ so much: in the control group 34%, and in the experimental 62% correctly answered the test task. The experimental group really liked the fact that additional tasks were associated with other academic subjects.

Then a test was conducted to determine how the vocabulary was enriched. This test revealed that in the control group students remember more words, but could not apply them correctly in the text, and in the experimental group the result was the opposite.

For the second age group - college students - another well-known and socially significant series "The Hunger Games" by American writer Suzanne Collins was selected. There are several sites dedicated to this book trilogy and films based on it on the Internet. On the same site of Scholastic publishing house, there are materials for teachers ("The Hunger Games Trilogy for Teachers", n.d.) and readers ("The Hunger Games: Games", n.d.). This trilogy is quite relevant, and it should be noted that in some States of the United States it is already included in the compulsory school curriculum, which numerous teenage dystopias did not earn. The materials are varied - videos, podcasts, trailers, discussion guide, various educational games. Since the first book of the trilogy is directly related to survival in the forest, the game is devoted to this interdisciplinary aspect, the integration of the English language with such subject as Principles of personal and social safety and Biology.

For the experiment, two groups were also selected. They were familiar with the plot of the films, but did not read the book in English. The control group was offered a printed text, and experimental group was offered electronic and audio books, so they could read and listen at any time, using only their own phones.

In addition, the experimental group was invited to use the site and listen to the music that sounded in the film, especially since the famous lullaby “Deep in the Meadow” was performed by the famous singer Sting (Gordon Matthew Thomas Sumner).

Two weeks later, the control group was asked to write an essay on survival in the forest or on the strategy of military action and to make questions for discussion on "problems of economy and politics in the state of Panem".

The experimental group was invited to run its own blog during the two weeks of the experiment, noting its successes and failures, posting interesting links, creating its own electronic resources and writing comments in other blogs. The only limitation was the language of communication - only English. A blog is a personal page of a user in the form of a diary or magazine, and it can be done on several sites for free (Blogger Homepage, n. d.). So individual work became collective. At the end of the experiment, students were asked to do project work or make a video blog on topics similar to the topics of the control group.

During the experiment, it was found out that in the control group just reading did not cause any interest and did not lead to an increase in educational motivation. During the collective discussion of social and economic problems of the invented state, all participants of the experimental group were more active in their statements, constantly showing their own records and links from the Internet space.

Moreover, participants in the experimental group identified several useful training resources in addition to the proposed site in their own study. First, it turned out to be a social service Wiki (wiki) that allowed anyone to post his or her material on the Internet. It mostly contained popular science articles or articles in different languages. From this service network encyclopedia Wikipedia developed. Several pages are devoted to “The Hunger Games” trilogy ("The Hunger Games Wiki", n.d.). Students could read other people's records and make their own changes.

Another type of social service - podcast helped to develop Listening skills. It allows listening, viewing and distributing audio and video in offline mode, for which it is sufficient to download the necessary file to your computer. For example, on iTunes (itunes.apple.com) you can subscribe to the necessary podcast and receive constant updates. Many podcasts (Hunger Games: Fireside Chat, n.d.; The Hunger Games Fan Podcast, n.d.; Nightlock: A Hunger Games Podcast, n.d.) are dedicated to the trilogy "The Hunger Games". Students could both listen and watch other people's podcasts and create their own, which developed not only listening skills, but also speaking skills.

In addition, the participants of the experimental group found out that in the third book there is a lot of military vocabulary, which can be useful for cadets, because there are not so many books for young adults, containing a plausible and detailed description of hostilities.

7. Conclusion

The modern educational standard refers to the need to use authentic materials, i.e. created by native speakers. From the above experiment, we can conclude that a specially selected authentic reading of foreign literature can be considered as part of the CLIL (Content and Language Integrated Learning) methodology - one of the most interesting and widespread approaches to teaching foreign (English) language. CLIL as a term was formulated by David Marsh ("CLIL: An interview", 2009) in 1994, although in fact this method has been known for a long time. CLIL is conditionally divided into hard CLIL and soft CLIL. Hard CLIL

means that any subject can be studied in English. Geography, literature, biology, physics, mathematics, social science, history, computer science or even sports games are usually studied through a foreign language. English teachers use soft CLIL when teaching a foreign language, using topics and materials from other subjects. Typically, such training is based on the basic 4 "C": content, communication, cognition and culture. All these components are continuously linked with each other. Such interdisciplinary training is very important in the modern educational space.

There is no doubt that for specialists of technical or natural sciences, project training or so-called STEM-projects that have interdisciplinary and practice-oriented value come to the fore.

STEM is an acronym of English words, indicating the integration of the natural Sciences, (Technology), Engineering and Mathematics. STEM-STEAM-STREAM approaches to education are about strengthening the role of Science, Technology, Engineering, Mathematics in education, using Arts and Reading/ Writing - the thinking skills embodied in Reading and Writing. On the other hand, R in the abbreviation STREAM can be interpreted as Research. Such research multimedia and interactive projects serve to increase motivation when reading authentic fiction, because it is best remembered what one tried and what one told others.

Electronic resources in the form of STEM-STEAM-STREAM-projects serve as a very good filling of the University educational technosphere and help in the development of cognitive thinking. In an era when English is the language of international communication, it is very important to motivate students to study it deeply and fascinatingly. This can be helped by the correct use of active reading using the Internet space.

The study materials can be useful to teachers of foreign languages, to creators of electronic educational resources, to psychologists conducting research in the field of new information perception of memorization processes.

Teaching foreign-language authentic reading is usually limited the scope of the syllabus framework of various Humanities and includes works of classical literature until the middle of the XX century. At the same time, a foreign language (for example, English) is constantly changing, new words, phrases, metaphors that are required for the future specialist to communicate adequately in the scientific and working environment are appearing. That is why, in our opinion, it is necessary to study modern authentic literature with natural sciences students. Such reading can increase their learning motivation and enrich their vocabulary. However, it is necessary to take into account the Informatization of the society and educational space and to use special Internet resources to enhance reading.

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References

- Blogger. (n.d.). Retrieved from www.blogger.com/start
- Bol'shoj tolkovyj slovar' russkogo yazyka [Big explanatory dictionary of the Russian language]. (1998) St. Petersburg: Norint. [In Rus.].
- Chalmers, R. (2000, November 11). Surf like a Bushman. *New Scientist*, 168(2264), 39-41. Retrieved from <https://www.newscientist.com/article/mg16822644-500-surf-like-a-bushman/>
- Christochevskaya, A. S., & Christochevsky, S. A. (2018). Kognitivizatsiya — sleduyushhij ehtap informatizatsii obrazovaniya [Cognitization — the next stage of informatization of education]. *Informatika i obrazovanie [Informatics and Education]*, 9, 5-11. [In Rus.].
- Christochevsky, S. A. (2014). Razvitiye ehlektronnykh resursov: interaktivnye tvorcheskie sredy [Development of electronic learning resources: interactive creative environments]. *Informatika i obrazovanie [Informatics and Education]*, 7, 3-6. [In Rus.].
- CLIL: An interview with Professor David Marsh. (2009). Retrieved from <http://ihjournal.com/content-and-language-integrated-learning>.
- Hunger Games: Fireside Chat. (n.d.). Retrieved from <http://www.hgfiresidechat.com/>.
- Krum, R. (2014). *Cool Infographics. Effective Communication with Data Visualization and Design*. Indianapolis, Indiana: John Wiley & Sons, Inc.
- Mayer, R. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.
- Miller, G. (1983). Informavores. In F. Machlup and U. Mansfield (Eds.), *The Study of Information: Interdisciplinary Messages* (pp. 111–113). New York: Wiley-Interscience.
- Miller, K., Lukoff, B., King, G., & Mazur, E. (2018). Use of a Social Annotation Platform for Pre-Class Reading Assignments in a Flipped Introductory Physics Class. *Frontiers in Education*, 3, 8. <https://doi.org/10.3389/educ.2018.00008>
- Multimodal learning through media: what the research says. (2008). Retrieved from <http://www.cisco.com/web/strategy/docs/education/Multimodal-Learning-Through-Media.pdf>.
- Nemov, R. S. (2007). *Psixologiya: Psixologiya obrazovaniya: ucheb. dlya stud. vy'ssh. ped. ucheb. zavedenij. [Psychology. Psychology of education: textbook for students of higher educational institutions.]* (Vol. 2) (4th ed.). Moscow, Gumanitar. izd. Centr VLADOS. [In Rus.].
- Nightlock: A Hunger Games Podcast. (n.d.). Retrieved from <http://www.nightlockpodcast.com/>
- Perusall. (n.d.). Retrieved from <https://perusall.com/>
- Platforma dlya chteniya stimuliruet studentov uchitsya. [Platform for reading encourages students to learn] (2018). Retrieved from <http://www.edutainme.ru/post/platforma-dlya-chteniya-stimuliruet-studentov-uchitsya/>. [In Rus.].
- Popkova, N. V. (2005). Metodologiya filosofskogo analiza texnosfery' [The methodology of philosophical analysis of the technosphere]. *Vestnik Tambovskogo gosudarstvennogo texnicheskogo universiteta*, 3, 819-820. [In Rus.].
- Scholastic. (n.d.). Retrieved from <https://www.Scholastic.com/>
- The 39 Clues Education Network. (n.d.). Retrieved from <http://www.scholastic.com/teachthe39clues/>
- The 39 Clues Homepage. (n.d.). Retrieved from <http://the39clues.scholastic.com>
- The 39 Clues Teaching Resources. (n.d.). Retrieved from <https://www.scholastic.com/teachers/collections/teaching-content/39-clues-teaching-resources/>
- The Hunger Games Fan Podcast. (n.d.). Retrieved from <http://gspn.tv/category/all-shows/hungergames/>.
- The Hunger Games Trilogy for Teachers. (n.d.). Retrieved from <http://teacher.scholastic.com/resources/hunger-games-for-teachers/>
- The Hunger Games Wiki. (n.d.). Retrieved from http://thehungergames.wikia.com/wiki/The_Hunger_Games_Wiki
- The Hunger Games: Games. (n.d.). Retrieved from <http://www.scholastic.com/thehungergames/games.htm>
- Zorina, E. M. (2017). Sozdanie obrazovatel'noj texnosfery' dlya obucheniya yazy'ku v voennom vuze. [Creation of an educational technosphere for language teaching in a military University.]. *Voennyj inzhener*, 2(4), 55-59. [In Rus.].