CENTRE DE MANAGEMENT DE L'INNOVATION

INNOVATIONS IN THE SCIENTIFIC, TECHNICAL AND SOCIAL ECOSYSTEMS

Scientific journal Issue 5

Editor in Chief:

JAEGER Svitlana – DSc (Education), Director of the Center for Innovation Management, Nice, France

Members of the editorial board:

ALDRICH Chris – DEng (Extractive Metallurgical Engineering), Professor in the Department of Mining Engineering and Metallurgical Engineering, Curtin University, Bentley, Australia

BERGERON Henri – Director of the Health Policy axis at LIEPP, codirector of the "domain" at the Presses de Sciences Po, scientific coordinator of the Health Chair at Sciences Po-FNSP, Paris, France

BOIKO Hryhorii – PhD (Pedagogical Sciences), Deputy Director of the Personnel Department of the Ministry of Education and Science of Ukraine, Professor of the Department of Experimental and Theoretical Physics and Astronomy of the National Pedagogical University named after MP Drahomanov, Kyiv, Ukraine

CANHASI Ercan – PhD (Computer Science and Informatics), Professor (Associate) at University of Prizren, Albania

CARACCI Alvaro Andres Urzua – General Director of Research, Innovation and Postgraduate, University of Alba, Santiago, Chili

DOSENKO Anzhelika – PhD (Social Communications), Associate Professor of Journalism and New Media, Borys Hrinchenko Kyiv University, Kyiv, Ukraine.

DOTSEVYCH Tamilia – DSc (Psychology), Full Professor of the Department of Psychology and Pedagogy of Preschool Education of Hryhorii Skovoroda University in Pereiaslav, 30, Sukhomlynskyi Str., Pereiaslav, Kyiv region, Ukraine

FADIPE Temitope – PhD (Cell Biology and Genetics), Head, Molecular Biology Laboratory, Federal Institute of Industrial Research, Oshodi, Lagos, Nigeria

FARWELL James P. – DCLS (Law), Senior Fellow, Institute for BioDefense Research, Washington, United States

HNATIV Oksana – PhD in Law, Associate professor of the Department of Civil Law and Procedure of Ivan Franko National University of Lviv, Lviv, Ukraine

IHNATENKO Maryna – DSc (History), Professor, Head of the Department of General History, Jurisprudence and Teaching Methods, Hryhorii Skovoroda University in Pereiaslav, Pereiaslav, Ukraine

KANDEL Bijay Kumar – PhD (Management), Visiting Professor of University of South Pacific (Fiji), UNICAF University, Larnaca, Cyprus

KAUFMANN Christof — Graduate Engineer RUB Ruhr University Bochum, BAFA-accredited energy consultant for medium-sized companies (EBM), Germany

KIRAT Thierry – Research Director at CNRS (section 36 of the InSHS: "Sociology and legal sciences"), Paris-Dauphine University, Paris, France

KUSHCH Natalia – PhD (Philological Sciences), Associate Professor of the Slavic Philology and Journalism department of Tavriya National University named after V.I. Vernadsky, Kyiv, Ukraine

NEFEDOVA Tamara – PhD (Financial, Associate Professor of ESCP Business School, Paris, Île-de-France, France

PRYKHODKO Olena – Doctor of Law, Director at Modelex Education Monaco and the British School of Monaco, Monaco

RAHMAN M Mahbubur – PhD (Physics), Professor in the Department of Physics at Jahangirnagar University, Bangladesh

RAHMANI Amir – PhD (Technology Management), Researcher chez Iran University of Science and Technology, Tehran, Iran

SABINO Ubaidillah – PhD (Magnetorheology), Professor (Associate), Sebelas Maret University, Indonesia

SAHU Tripti – PhD (Marketing), Professor of International Institute of Management Studies, Nere, Dattawadi, Pune, India

SHARMA Ridhima – PhD (Economics), Assistant Professor of the Vivekananda institute of Professional studies, New Delhi Area, India

SUCHARSKI Tadeusz – Phd (Philology), Professor of the Institute of Philology of Pomeranian University in Slupsk, Poland

SHTEINBUK Feliks – DSc (Philology), Professor at Comenius University in Bratislava, Slovakia

TÓTHNÉ Klára Szita – PhD (Economics), Professor at University of Miskolc, Miskolc, Hungary

UWA Joseph Olayinka – PhD (Medicine), Head IVF laboratory services of Fertigold Fertility Clinic, Ikeja, Lagos, Nigéria

VU Hung Phuong – PhD (Industry competition), Senior Lecturer at National Economics University, Hanoi, Vietnam

Articles in the publication were checked for plagiarism,

Pages of a scientific journal on the Internet: https://istse-jaeger.com

ISSN 2824-1843 (Online) ISSN 2824-8074 (Print)

DOI: https://doi.org/10.56378/LJ0105

© CENTRE DE MANAGEMENT DE L'INNOVATION

CONTENTS

ART STUDIES AND CULTURAL STUDIES

SHTEINBUK Feliks, STRAPAC MASSAYOVA Vanessa. CONNECTIVIST APPROACH TO THE ANALYSIS OF RELIGIOUS SYMBOLS IN SLOVAK POSTMODERN LITERATURE	5
JOURNALISM	
DOSENKO Anzhelika, SINOWIEC Oleksandra. PHOTO CONTENT OF COMMUNICATION PLATFORMS AS A MECHANISM OF OPPOSING RUSSIAN PROPAGANDA (ON THE EXAMPLE OF THE UKRAINIAN WAR OF LIBERATION)	21
PAVLIUK Tetiana, DUBINETS Zoreslava. THE CONCEPT 'QUARANTINE' IN RUSSIAN-, UKRAINIAN- AND ENGLISH-LANGUAGE HUMOROUS WORLD VIEW	32
PHILOSOPHY	
VERSTYUK Ivan. DEVELOPMENT GAPS BETWEEN EASTERN AND WESTERN EUROPE AS A DERIVATIVE OF RELIGIOUS AND CULTURAL FACTORS	45
PHYSICS	
KAUFMANN Christof. GLOBAL CLIMATE: THE PLANET AS A THERMODYNAMIC SYSTEM	54

JOURNALISM

UDK 007:304:001

DOI 10.56378/DAOS02122022

Anzhelika DOSENKO

PhD in Social Communications, Associate Professor of Journalism and New Media, Borys Hrinchenko Kyiv University, 18/2, Bulvarno-Kudryavska Street, Kyiv, 04070, Ukraine (<u>Likadosenko@gmail.com</u>)

ORCID: 0000-0002-5415-1299

Oleksandra SINOWIEC

Ph.d in social science, Department of Applied Social Science, Silesian Univercity of Technology Gliwice, Roosevelt's Street 26-28, 41-800 Zabrze, Poland (aleksandra.synowiec@polsl.pl, Alexandera.synowiec@gmail.com)

ORCID: 0000-0001-8251-2322

Анжеліка ДОСЕНКО

Кандидат наук із соціальних комунікацій, доцент, доцент кафедри журналістики і нових медіа Київського університету імені Бориса Грінченка, 18/2, вул. Бульварно-Кудрявська, Київ, 04070, Україна (<u>Likadosenko@gmail.com</u>)

ORCID: 0000-0002-5415-1299

Олександра СИНОВЕЦЬ

Кандидат соціологічних наук, доцент кафедри прикладних соціальних наук Силезького Технологічного університетуб Глівіце, Roosevelt's Street 26-28, 41-800 Zabrze, Польща (<u>aleksandra.synowiec@polsl.pl</u>, Alexandera.synowiec@gmail.com)

ORCID: 0000-0001-8251-2322

Bibliographic Description of the Article: Dosenko, A., Sinowiec, O. (2022). Photo content of communication platforms as a mechanism of opposing Russian propaganda (on the example of the Ukrainian war of liberation). *Innovations in scientific, technical and social ecosystems [Scientific journal], 5*, pp. 21–31.

PHOTO CONTENT OF COMMUNICATION PLATFORMS AS A MECHANISM OF OPPOSING RUSSIAN PROPAGANDA (ON THE EXAMPLE OF THE UKRAINIAN WAR OF LIBERATION)

Abstract. The Purpose of the Study. To outline the photo content of communication platforms as one of the most powerful levers of opposition to Russian propaganda in the media environment. The Research Methodology: theoretical analysis (to study scientific views and points of view regarding the formation of the issues of the article), analysis of the content of communication platforms (to understand the practical component of the researched issue). Scientific comparison (for the formation of conclusions and previously unexplored aspects of the subject). The Scientific Novelty The Scientific Novelty lies in the latest approaches to the visualization of the content of communication platforms as a way of countering the propaganda that the Russian Federation is waging against Ukraine during the information war. The Conclusion. The article offers a vision of mechanisms for countering communication platforms as components of the communication process, capable of resisting russian propaganda. Photography remains the leading element of creating a visual component of communication. It weighs much less than streams and audio files that may not be uploaded to the user's phone due to a lack of traffic. The photo content of modern communication platforms and channels are the most accessible to the Ukrainian audience due to their efficiency and interactivity has been analyzed in this work. Among them: "This is Kryvyi Rih, baby", "Ukraine online", "Ukraine in shock", "Crimean Tatarian resource center".

 $\textbf{\textit{Keywords:}} \ social \ networks, \ communication \ platforms, \ propaganda, \ photo \ content.$

ФОТОКОНТЕНТ КОМУНІКАЦІЙНИХ ПЛАТФОРМ ЯК МЕХАНІЗМ ПРОТИСТОЯННІ РОСІЙСЬКІЙ ПРОПАГАНДІ (НА ПРИКЛАДІ УКРАЇНСЬКОЇ ВИЗВОЛЬНОЇ ВІЙНИ)

Анотація. Мета дослідження — окреслити фотоконтент комунікаційних майданчиків як один із найпотужніших важелів протидії російській пропаганді в медіа-середовищі. Методологія дослідження: теоретичний аналіз (для вивчення наукових поглядів і точок зору щодо формування тематики статті), аналіз контенту комунікаційних платформ (для розуміння практичного складника досліджуваної теми). Наукове порівняння (для формування висновків і раніше не вивчених сторін предмета). Наукова новизна полягає в новітніх підходах до візуалізації контенту комунікаційних платформ як способу протидії пропаганді.

Висновок. У статті запропоновано бачення механізмів протидії комунікаційним платформам як складникам комунікаційного процесу, здатним протистояти інформаційній пропаганді. Провідним елементом створення візуального складника комунікації залишається фотографія. У роботі проаналізовано фотоконтент сучасних комунікаційних платформ і каналів, які є найбільш доступними для української аудиторії завдяки своїй ефективності та

інтерактивності. Серед них: "Це Кривий Ріг, дитя", "Україна онлай", "Україна в шоці", «Кримськотатарський ресурсний центр".

Ключові слова: соціальні мережі, комунікаційні платформи, проапаганда, фотоконтент.

The Problem Statement. There are many forms of communication and information influence in the 21st century. Scientists all ower the world are actively studying the topic of manipulating consciousness and public opinion through propaganda. The question remains open due to the rapid development of applied social and communication technologies and conducting propaganda in the Internet environment. There are a large number of applied tools contribute to the conduct of information warfare in social networks, messengers and communication platforms.

This issue has also become relevant due to the full-scale invasion of the Russian Federation into Ukraine and the strengthening of the information war in the media environment.

The Analysis of Sources and Recent Researches. Today, many world scientists are engaged in the study of propaganda as an effective mechanism of power. Among them: J. Stanley, de la Brosse, Renaud; Lajmi, Nouri Ekelin, Annelie, Huang Haifeng. Among the Ukrainians who actively study the phenomenon of propaganda, we can name: H. Pocheptsov, O. Kholod, I. Parfenyuk and many others. Less researches are presented specifically on communication platforms and cross-media content. It is worth of noting the works written by: A. Dosenko, O. Sytnyk, V. Sadivnychy, O. Synovets and many others.

The Purpose of Publication. The purpose of the study is to outline the photo content of communication platforms as one of the most powerful levers of opposition to Russian propaganda in the media environment.

The Main Material Statement. Propaganda of the Russian Federation became more powerful in the information space not only of inside their state, but also on the territory of Ukraine and the temporarily occupied Crimea. Russian media also distributed propaganda materials on the territories of other countries. Propagandists began to use applied technologies more and more actively to spread false information, fakes, partially true information resources, falsified videos.

These tools of the russian federation's information war led to the strengthening of countermeasures against disinformation in Ukraine. As a result, quite powerful structures were created at the state level, which focused their activities on anti-propaganda and set themselves the goal of clearing the information space from false information resources. The Center for Countering Disinformation was already operating in Ukraine and was joined by the Internet

Army of Ukraine, which was gathered from volunteers from all over the country who wanted to work in the media space.

It is worth delving into the issue of propaganda as an applied tool for conducting an informational anti-Ukrainian war for the deeper study of the relevance of the described problems.

Propaganda is considered as a free, voluntary form of exerting informational and manipulative influence on a person, seeking to bring to his attention information about the activities of people, structures, etc.

Zrazhevska N. notes: "...the term "propaganda" has been used for many years to describe the activities of various religious organizations, election campaigns of political parties, as well as government programs – all of them are involved in the war for people's minds, external support and assistance" (Zrazhevska, 2010). Conducting propaganda activities is always based on psychological and emotional mechanisms, trying to educate the public. It is generally known that propaganda as a technology is divided into oral, visual and media propaganda. Each of these forms has its own arsenal of tools. For oral language, the flavor of the language, the ability to correctly use words close to the understanding of the audience, to break through the projection on one's own vision and the recipient's understanding of the problem.

Visual propaganda uses printed products and audiovisual components. It is possible to use traditional mass media and Internet resources for propaganda through the media. Media experts (Jolos, 2022; Kononenko, 2020; Dosenko, 2020] identify propaganda activity with the AIDA model of attention. This model operates according to the scheme: "1) attention (attention), 2) interest (interest), 3) desire (excitement, desire to do something), 4) action (action)" (Kononenko, 2020). Kononenko V., Lapshin S. single out a number of tasks performed by propaganda. Among them: 1. Education and consolidation of certain desirable and useful ideas, concepts, views, habits and beliefs, etc. 2. Destruction, suppression and change of unwanted ideas, concepts and beliefs. Both of these tasks can be performed by propaganda both through suggestion and through persuasion (Kononenko, 2020).

In general, propaganda must be effective, the achievement of a powerful effect depends on the power of the state, the involvement of a number of media for conducting communicative activities and the involvement of popular media persons who prepare the audience for the perception of information resources.

The audience perceives information that appeals to them (or hurts), which is close and understandable to them. It is worth emphasizing that propaganda is a mechanism working for years and an activity carried out for a long period of time. The information field is formed by the media without leaving anyone indifferent. For example propagandists can use a number of effects, to project into the minds

of the audience those problems and painful issues that are especially relevant for the audience today.

Propaganda techniques has s big influance for audience which does not have a high level of education. This is exactly what we can observe in the 21st century on the example of the Ukrainian-Russian Liberation War. During the racist invasion, an army of non-humans committed grave atrocities and war crimes in the Kyiv region: rape of women, children and the elderly (both sexes), robbery, torture and murder of civilian men, safaris on children. All these actions were carried out by Buryats. The level of education is low in that part of russia. The vast majority of those "soldiers" who came to Ukrainian land have 3-8 grades of education. The standard of living in Buryatia is as low as education, which has caused mass robberies: the theft of both expensive equipment and women's underwear.

Propaganda activities have been carried out on the territory of russia for many years are absolutely anti-Ukrainian, the imposition of ideas that on the territory of Ukraine there are biolaboratories of unknown origin, NATO bases and the Kyiv regime conducts a neo-Nazi policy – for the entire civilized world. This is obvious lie and justification of its illegal actions. At the same time, propaganda "brainwashing" of russians led to manipulation of consciousness and atrocities in a foreign country. Among other things should be mention that the propaganda material should stand out among other irritants that are currently operating, as follows – possess a sufficient duration of action; sufficient intensity and novelty. The material itself has a great influence on memorization: the more meaningful, logical, emotionally colored it is, the better it is fixed in memory (Carrillo, 2010).

The information is aimed at strengthening already existing beliefs in the audience, and it ignores resources that contradict the picture of the human world. It follows from this that the powerful implementation of propaganda communication technologies in the russian information space, namely in political activity and the military conflict with Ukraine, has led to a complete mediacracy, the zombification of society and the cultivation of a powerful hatred of everything Ukrainian. At the same time, the actions of the Russian military led to an absolutely mirror reaction in the Ukrainian nation.

After the events that began on February 24, 2022, the Ukrainian people will never again consider the Russian military as brothers, respect russian culture or literature, listen to music, etc. The vast majority of the Ukrainian population, which before the full-scale invasion spoke Russian, today switch to the Ukrainian language and study it more deeply.

The modern Ukrainian government introduces and uses a number of communication technologies in the media environment, which contribute to the creation of the latest approaches in communication and conducting anti-Russian propaganda. The Disinformation Counteraction Center at the National Security and Defense Council of Ukraine is active today in Ukraine. It was created on March 11, 2022, and was put into effect by the Decree of the President of Ukraine dated March 19, 2021 The main task is to give an oppose informational influences and fakes entering the Ukrainian media space from the russian side. Experts emphasize: "...one cannot ignore the negative political consequences of expanding the influence of communication technologies, such as changing the system of representing civil interests in accordance with the media format, turning politics into a media process, virtualization of political space, etc." (Kononenko, 2020). It can be concluded that Ukrainian authorities are implementing a number of communication technologies built on adequate methods and mechanisms for transmitting relevant information and political messages through existing information channels. Today they are not only traditional media, but also Internet platforms and communication channels.

Ukrainian society is actively developing photo, audiovisual mass media and platforms that generate an actual format of communicative interaction. The latest information technologies create an environment for the functioning of a specific information and communication center.

Today, the use of photo content in public and communication channels as a method of covering true information and a way of resisting Russian propaganda has become relevant for Ukraine. The photo highlights the events in Ukraine, the reactions of Ukrainians to the illegal invasion, shows the events from hot spots and helps to understand the essence of the Ukrainian position towards the russian federation. Photo content acts as a mechanism for countering propaganda by providing truthful information resources, focusing on the most important thing for Ukrainians - the defense of rights and freedom.

Ukrainian media publish not only terrify and shock content, but also fosters patriotism, the desire to defend one's country and language. We analyzed the photos and content of Telegram channels: "This is Kryvyi Rih, baby", "Ukraine online", "Ukraine in shock", "Crimean Tatar resource center".





Photos 1 and 2. Photos from telegrams of the "Ukraine online" channel

The photos show a rocket that, after Eurovision 2022 and the call of the Kalush Orchestra band "Save Azovstal", the Russian army launched at the Azovstal plant, where a large number of the civilian population of the city of Mariupol were in shelters. The photo on the right shows a nuclear explosion, which Russia constantly threatens Ukraine with.

Next selection of real photos of destroyed and damaged buildings from the Russian invasion was made. The photo on the left shows the house that was hit by a shell from tank fire in the city of Irpin. On the photo from the right is a residential building in Kyiv, which was hit by an enemy missile on February 24, 2022, destroying a lot of human lives.





Photos 3 and 4. Photos taken by an unknown author published in the Telegram channel "Ukraine in shock"

The following photo was taken in the city of Irpin, immediately after the liberation of the city from the Russian military. Irpinski Lipky, a new residential complex that was practically destroyed by the Russian invasion, is depicted. The photo on the left is an image of what was pouring after the shelling, and the photo on the right is an image of what the area was like before the full-scale invasion of the army of "liberators" from the Russian Federation.





Photos 5 and 6. The photos is taken from the Telegram channel "Ukraine in shock"



Photo 7. The photo is taken from the telegrams of the "The Crimean Tatar Resource Center" channel

The photo shows the residents of the city of Energodar who went to rally against the russian federation and the seizure of the Zaporizhzhya nuclear power plant. This photo greatly raises the level of patriotism among Ukrainians. It demonstrates that the people do not want to be part of the Russian Federation, but seek independence. Propaganda of the russian federation and the illegal referendums held there are falsification and illegal seizure of the territories of a sovereign state.

The following images were taken from Kherson city during its occupation. The photo shows rallies of Kherson residents who came out against the seizure of their city by the Russian military. Ukrainians not only go out on the square, but also without weapons go to the equipment and cars trying to stop the army of "liberators".





Photos 8 and 9. The content of Ukrainian publications and social networks with the skeptical signature of the "liberators"

Today, photo content of communication platforms is becoming part of the strategic communication of authorities with the population of the country due to its specificity of being quickly displayed and uploaded to information carriers. Ukraine is under constant shelling and missile strikes from the territories of the russian federation and belarus. It is not surprising that there are interruptions in communication, because the enemy systematically tries to target the objects of the state's critical information structure. Power outages and Internet outages can contribute to russia's desire to drive the country's population into an information vacuum. This policy has been practiced by the occupiers in the temporarily occupied territories. It is because of that the desire of the state and journalists to keep the correct and truthful vector of information is important. Of all multimedia components of modern content, photography weighs the least and therefore opens

faster. The use of photo content on platforming helps to strengthen civil positions, faith in the armed forces and the state.

The Conclusions. Propaganda has very strong levers of pressure on the world and Ukrainian community. This work is aimed at studying the countermeasures of communication platforms that are currently able to act as components of the communication process and have the strength and resources to resist Russian propaganda. Photography is studied by the authors as a key factor in the visualization of content and the possibility of building counteraction mechanisms in the minds of the audience. Ukraine is subjected to strong rocket attacks, has interruptions with light and communication, photography remains the leading element of creating a visual component of communication, because it weighs much less than streams and audio files, which may not be uploaded to the user's phone due to a lack of traffic. The photo content of modern communication platforms and channels, which are the most accessible to the Ukrainian audience due to their efficiency and interactivity, has been analyzed. Among them: "This is Kryvyi Rih, baby", "Ukraine online", "Ukraine in shock", "Crimean Tatar resource center".

We see the prospects for further exploration in the need to study the photo content of communication platforms in more detail.

References

Bohush, L. A. (2021). Vplyv media na formuvannya hromads'koyi dumky u sviti [Influence of the media on the formation of public opinion in the world]. *Naukovi zapysky Tavriys'koho natsional'noho universytetu imeni V. I. Vernads'koho. Seriya: Filolohiya. Zhurnalistyka, tom 32 (71) №1. Chastyna 3.* pp. 299–302. Available at: http://www.philol.vernadskyjournals.in.ua/journals/2021/1_2021/part_3/52.pdf [in Ukrainian]

Carrillo, M., López-López, A. (2010). Concept Based Representations as complement of Bag Of Words in Information Retrieval [Text] / M. Carrillo, A. Lopez-Lopez // Artificial Intelligence Applications and Innovations. Berlin: Heidelberg Publ., pp. 154–161. [in English]

Dosenko, A., Iuksel, G., Synowiec, A., Pohrebniak, I. and Shevchenko, V. (2020). Communication Platforms: New Positions and Appointment (April 13, 2020). International Journal of Management (IJM), 11 (3), pp. 294–303. Available at: https://ssrn.com/abstract=3574568 [in English]

Dosenko, A., Shevchenko, V., Iuksel, G., Synowiec, O., Dibrova, V. (2020). Use of open data in Ukraine: some important aspects. Revista San Gregorio, special issue. No.42. DOI: http://dx.doi.org/10.36097/rsan.v1i42.1564. Available at: https://revista.sangregorio.edu.ec/index.php/REVISTASANGREGORIO/article/view/1564 [in English]

Huang, H. (2015). Propaganda is signaling. <u>Comparative Politics</u>, Volume 47, Number 4, pp. 419-444(26). DOI: https://doi.org/10.5129/001041515816103220 [in English]

Jason, S. (2015). How Propaganda Works. Princeton University Press. DOI: https://doi.org/10.1515/9781400865802 [in English]

Jolos, O. (2022). Inomovlennya Ukrayiny yak protydiya rosiys'kiy propahandi pid chas viyny [Foreignization of Ukraine as a countermeasure to Russian propaganda during the war Business and low]. *Business and Legislation*, *15(2)*, pp. 22–27. Available at: https://ojs.b-k.ge/index.php/bk/article/view/756/722 [in Ukrainian]

Kononenko V.V., Lapshin S.A., Pylypenko T.I. (2020). Derzhavno-hromads'ke upravlinnya osvitoyu v Ukrayini [State and public management of education in Ukraine]. *Derzhavne upravlinnya: udoskonalennya ta rozvytok*, [Online], vol. 1, Available at: http://www.dy.nayka.com.ua/?op=1&z=1548 (access date: 12/10/2022). [in Ukrainian]

R. de la Brosse, Lajmi, N., Ekelin, A. (2015). Media propaganda and human rights issues: What can be learnt from the former Yugoslavia's experience in relation to the current developments in the Arab Spring countries? *Journal of Arab & Muslim Media Research, Volume 8, Issue 1*, pp. 21–36(16). DOI: https://doi.org/10.1386/jammr.8.1.21 [in English]

Zrazhevska, N. I. (2010). *Komunikatsiyni tekhnolohiyi: lektsiyi* [Communication technologies: lectures]. Cherkasy: Brama-Ukraine. 224 p. [in Ukrainian]

The article was received 18/06/2022. Article recommended for publishing 30/11/2022.