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Technical University Students' Media Literacy When They Choose Scientific Journals for Reading and Publishing

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Abstract

The aim of the study was to identify students' attitudes to scientific journals as a source of scientific information and the platform for publishing their own scientific results. The study was conducted in National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (Kyiv, Ukraine). Quantitative analysis of 7 closed ended responses, and qualitative analysis of 20 open ended responses were done. The study population included students (n = 720) of the fourth and fifth courses. The survey questionnaire captured the attitudes of students about scientific journals and their role in professional development, found out what percentage of students reads scientific journals, revealed whether the students understand information from them, as well as their ability to identify predatory journals thanks to media literacy. Predatory journals use to disseminate falsified, plagiarized, manipulative information, conspiracy theories, deviating from the publishing standards of editing and reviewing. Predatory publishing threatens science, scientific communication, and the reputation of authors. We evaluated the level of critical thinking of students when choosing a source to publish scientific results, found out the reasons why students use or do not use scientific journals for their educational purposes, revealed how scientific journal can be used for education, and collected opinions about barriers that may prevent students from publishing scientific articles.

Keywords: scientific community, scientific journal, media literacy approach, scientific information, review system, predatory journal, publishing standards, ethical principles, transparency, cooperation.

1. Introduction

For many years, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" has topped the rankings of Ukrainian higher education institutions. This research university, with a high level of autonomy, works simultaneously in three interrelated areas: education, research, and innovative technologies (technology transfer). This university does not use a conservative model "Repeat known," but creative model "Create new". D. Mendeleev, C. Timiryazev, E. Paton and other scientists have founded here a "science-production-personnel" model of teaching.

Today, students are immersed in the production process, and provided with the necessary general scientific and engineering knowledge related to the global and local economic, environmental and security challenges. The innovative environment of the university includes Kyiv Polytechnic Science Park, Sikorsky Challenge Startup School and Sikorsky Challenge Innovation Holding. Following the model of a research university, the university has become the largest

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developer of startups in Ukraine, with 100 to 150 startups annually in its 72 scientific schools in the fields of mechanical engineering, green energy, biomedical engineering, information technology, telecommunications, eco-friendly production, and others.

To implement innovative developments, students and teachers must be aware of current scientific achievements and constantly monitor the results of scientific research published in reputable scientific journals. At the same time, the university has high rates of publishing activity both among research and teaching staff and among students. According to the ranking of Scopus in 2021, KPI is ranked fifth in the ranking of the most cited universities in the country (Rating..., 2021). During the last quarter of 2021, KPI students and teachers published 212 and 127 articles in journals indexed by Web of Science Core Collection and Scopus, respectively (ELAKPI..., 2021).

This study was undertaken with an aim to identify students' attitudes to scientific journals as a source of scientific information and the platform for publishing their own scientific results. The objectives outlined are following:

- identify students' interest in scientific information published in scientific journals;
- identify the level of critical thinking of students when choosing a source to publish scientific results and attitudes to the principles of academic integrity.

2. Materials and methods

Theoretical methods were used in the work: analysis, generalization of scientific sources. To study the students' experience, the survey was used. Its results were interpreted with the methods of analysis, specification, and classification. Study sample consists of 720 fourth and fifth year students of engineering specialties of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" (Institute of Applied System Analysis, Educational and Scientific Institute of Telecommunications Systems, Publishing and Printing Institute, Institute of Aerospace Technologies, Institute of Energy Saving and Energy Management, Institute of Special Communication and Information Protection, Mechanic-Mechanical Engineering Institute, Physic-tech Institute). Their average age is 25.5 years (with a range of 20 to 31 years). A questionnaire survey was developed and distributed through university network during October–December 2021. The survey was piloted on the Printing and Publishing Institute of National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" before launch. The questionnaire included 7 closed ended and 20 open ended items. The results of the survey were analyzed during January–February 2022. Quantitative data was analyzed by percentage distribution and qualitative data by categorization.

3. Discussion

There is a set of norms in the scientific community that regulate the professional activities of scientists, in particular publishing scientific results. Standard moral and ethical principles of the modern scientist are: 1) diligence for formulating goals, planning and conducting research, selection research methods and procedures, interpretation of conclusions, as well as identifying potential threats and opportunities (benefits), practical and other applications and predictions formulated more or less unambiguously; 2) trustworthiness; critical approach to own results; diligence in collecting, recording and storing data, as well as in presenting research results; 3) objectivity in interpretations and conclusions based solely on facts, logical reasoning and verifiable data; 4) impartiality in the process of interpretation of the problem or phenomenon, in the process of knowledge exchanging with other scientists; 5) resistance to any attempts to influence on the study by the people or organizations who commissioned it, or the expert whose opinions reflect the interests of the customer, as well as political, ideological or business pressure groups; 6) openness about their own scientific work in discussions with other scientists, which is one of the key conditions for progress in science; the desire to share knowledge with society; 7) transparency refers to the collection, analysis and interpretation of data, which is determined by the proper storage of empirical data and their availability through publications; 8) responsibility to the participants of the research and their objects, including the environment and cultural values; for research on living beings, which should be conducted only with respect to human dignity and animal rights, with the permission of the relevant bioethics commissions; 9) reliability, the recognition of the scientific achievements of other researchers through appropriate references to sources and the true recognition of the contribution of other scientists, regardless of who they are: colleagues, competitors or predecessors; 10) concern in relation to future generations of

scientists, which is manifested by teaching ethical standards and norms to students and subordinates; 11) courage in the defense of views that contradict traditional scientific knowledge and practice, as well as the principles of scientific reliability (The Commission..., 2012). Maintaining professional norms prevents the pseudoscience spread and supports public demands for quality science coverage (Harmatiy, 2021). Some students as young researchers (readers and authors of scientific journals) found these norms challenging, others saw the benefits of looking at issues of censorship, privacy, racial, and gender description within that disciplinary framework (Friesem, 2019).

There are several business models of scientific journals: traditional (article submission – peer-review – publication by subscription), open access (article submission – peer-review – payment by authors – free access), hybrid (article submission – peer-review – decision on how the article will be distributed: if according to the traditional model, the publication is free for authors, if open access – the authors pay for the publication). A separate model is “predatory”, when the article is published for the author’s money without independent review. This practice causes a threat to science, scientific communication, and the reputation of the author (co-authors) and the institutions they represent.

Meanwhile, the media is actively spreading stories about how researchers publish pseudo-scientific articles in dispute or in the form of a hoax. This is, for example, the story of how D. Mazières and E. Kohler managed to publish an article that contained nothing but an almost endless repetition of the sentence “Get me off your... Mailing List” in the *International Journal of Modern Computer Technologies* (Mazières, Kohler, 2014).

J. Bohannon, submitting a fabricated article with fictitious data to about 300 open access journals, tried to test the effectiveness of peer-review. As a result, more than half of the editors accepted this article for publication without noticing the author’s conceptual errors (Bohannon, 2013).

There is also a similar story about Dr. O. Szust, who sent 120 applications for the editorial position. Dr. O. Shust in his cover letter did not indicate any scientific qualifications. However, a third of journals offered him a job. In Polish, the word “oszust” (consonant with O. Szust) means “fraud”. In fact, Dr. O. Schust was an experimental construct of four Polish social psychologists who set out to find out the editorial procedures of so-called “predatory” journals (Sorokowski et al., 2017).

Distribution of predatory journals, the editors of which are ready to publish an article in public access regardless of its quality, due to the struggle of universities and research institutions for high ratings and is a consequence of the ideology of “publish or die”, which requires scientists to “bypass the system” (Hadi, 2016: 309). The adjectives “dubious”, “dark”, “parodical”, “spoofy”, “low credibility”, “dodgy”, are used as synonyms for predatory journals. The concepts “fake journals”, “sham journals” and “pseudo journals” are also widely used (Memon, 2019).

In our opinion, money is the main purpose of predatory journal. They usually disseminate falsified, plagiarized, manipulative information, conspiracy theories, deviating from the publishing standards of editing and reviewing, and use the tactics of intrusive invitation and misleading of potential authors.

In the context of the 21st century and digital online media, the literature reveals a shift in conceptions of trust in media with a conflation of the traditional distinctions between source, message, and media (Fisher, 2018). Students need support in learning how to investigate sources, search relevant information about those sources, and synthesize what they learn to make judgments about an article’s trustworthiness (McGrew et al., 2018). Previous findings have shown that it is extremely important to use media literacy approach, focused on the critical ability to process fake information (Jones-Jang et al., 2019).

J. Bill, a librarian and librarian at the University of Colorado (Denver, USA), has compiled a registry of predatory journals (1163 in 2018) (Beall, 2018). It is noteworthy that at first J. Bill did not support the creation of a regulatory body to oversee the publishers of scientific journals; instead, he believed that the best protection against unethical publishers was education and the ability to recognize publishing fraud through information literacy (Beall, 2012).

However, Bill’s list turned out to be discriminatory and unproven (Berger, Cirasella, 2015), particularly because many of the articles in the journals were peer-reviewed and made valuable scientific contributions (Teixeira da Silva, 2017). In addition, the list did not include numerous non-English predatory open access journals. After receiving reasoned feedback, the author canceled this list.

Along with Bill's list, there have been other similar attempts, such as the Stop Predators Journals website (<https://predatoryjournals.com>) and institutional lists, such as those published by the Indian University Grants Commission (UGC) and several other commercial organizations. However, they are also criticized for several reasons, due to incorrect methodology and lack of transparency (Memon, 2019). The only well-known registry of predatory journals in the world today is the commercial project Predatory Reports from Cabells. In three years, 13.500 journals were included to this list. Although the editorial board of each of them has the right to file an appeal, since 2017 only 20 journals (0.15 % of all journals) have used this opportunity and only three appeals have been successful (0.02 %) (Predatory Report, 2020).

Sometimes predatory journals publish quality articles because misled authors to submit their work to such journals. Meanwhile, not all articles published in authoritative scientific journals are scientifically valuable, because even there, when reviewing, it is not always possible to identify falsified materials (Habibzadeh, 2017). Therefore, it can be assumed that the lists only draw the attention of participants in scientific communication to dishonesty in the field of open access and are a lesson for publishers, but do not claim to outline a complete quantitative picture of the situation with predatory publishing.

The threats to scientists posed by the publication of their scientific results in predatory journals were summarized by A. Buckery, P. Hornung, and T. Schindler:

- the publication appears in a dubious environment alongside mediocre or even falsified scientific articles;

- the name and institution of the researcher may be used for advertising by a predatory publisher without their knowledge or consent;

- the researcher's name is constantly associated with the "predator" and his website, that can have negative consequences for his or her academic career;

- there is no guarantee of constant archiving, tracking or availability of the article;

- documents are not included in authoritative databases, as some databases actively remove links to articles published in predatory journals;

- "predatory" publishers can use articles for advertising;

- researchers may have to pay additional fees, especially if they want to withdraw the manuscript;

- securing rights can be difficult because predatory publishers hide their whereabouts to avoid legal action. Even when their location is known, predatory publishers fall under a different jurisdiction than authors, which complicates legal action (Bucceri et al., 2019).

Common phenomena for predatory journals are plagiarism, manipulation of citations, falsification (fabrication) of data, and so on. Therefore, these publications are harmful to science, scientific communication, and scientists themselves. Meanwhile, data from the Northern German Broadcasting Network show that around 400.000 scientists worldwide have published in such journals at least once (Dossier, 2020).

Most of predatory journals are in developing countries (Xia et al., 2015), and the authors are young and inexperienced scientists from the same countries, including India, Nigeria, Turkey (Demir, 2018). A recent study published in *Nature* found that of the approximately 2.000 papers published in predatory journals, 27 % were from India, 5 % from Nigeria and 4 % from Iran. All these results are expected. However, it was surprising that 15 % of the articles were prepared by authors from the United States of America (Moher et al., 2017). Eastern Europe also has a significant contribution to predatory publishing (Beall, 2016).

One of the reasons of predatory publishing is ill-conceived government policy on research funding. For example, a lot of predatory journals are indexed in the well-known and respected database PubMed. As it turned out, the publications get there not because they meet the standards of the database, but because they are funded by the state. This potentially legitimizes research that has not been subject to proper peer review (Manca et al., 2020).

Predatory journals discredit scientific knowledge, as their lack of evaluation can provoke a deliberate violation of academic integrity by authors and lead to plagiarism, data falsification and manipulation of the illustrative series (Clark, Smith, 2015), and therefore to cause the spread of pseudoscience, unverified unproven theories. As for the threats to authors posed by predatory publications, it is primarily a question of reputational losses. Some scholars submit articles to predatory journals without realizing it, but most articles end up in such journals due to the low scientific level of articles. In addition to the author's, predatory journals also destroy the reputation

of the institutions where the authors work. And this applies primarily to countries that are not leaders in scientific progress, where there is a lack of standards of scientific communication (Urazova, 2014).

Unethical research with errors, plagiarized or manipulative data can undermine the quality of research based on the articles from predatory journals (Tsuyuki et al., 2017). Meanwhile a weak review system, and therefore distrust of predatory journals, lack of a reliable system of archiving scientific articles can lead to loss of quality scientific data for researchers who for various reasons published their scientific results in these journals (Sharma, Verma, 2018). So, it is very important to have media literacy program for students about the tactics of misinformation (Cherner, Curry, 2019; McDougall, 2019; Valtonen et al., 2019), the ability to use, understand, and create content in a variety of contexts (Purtilo-Nieminen et al., 2021). Media literacy develops abilities to decode key areas of message construction, dissemination, and its effects. Through media literacy students may not only cultivate more funds of knowledge, but also “complex thinking skills that represent their abilities to relate, connect, and extend their developing funds of knowledge” (Schilder, Redmond, 2019: 111).

4. Results

Categorization of responses to closed ended item

The questionnaire had 7 closed ended items (Table 1).

Table 1. Percentage of responses to closed ended items

No	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Not Responded
1	Do you want to read scientific articles on your field?	1.2	6.5	4.0	53.2	34.3	0.8
2	Does reading scientific journals help you achieve better learning outcomes?	2.9	4.7	12.6	49.3	29.3	1.2
3	Do you think that reading scientific articles will help you in your further professional activity?	0.8	1.2	7.6	62.5	27.9	0.0
4	Do you always trust the scientific results published in scientific journals?	2.7	11.4	1.0	9.4	72.3	3.2
5	Do you consider the results of your research valuable for science and practice?	2.3	4.6	5.9	57.3	28.9	1.0
6	Do you consider the indexing of a scientific journal by international scientometric databases evidence of its quality?	8.3	6.3	4.0	24.7	52.1	4.6

7	Do you need to participate in seminars, trainings, etc. on the preparation of scientific articles in accordance with international publishing standards?	4.2	23.7	3.6	63.7	4.0	0.8
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As we can see, 87.5 % of respondents want to read scientific articles in their field; 78.6 % agree, that reading scientific journals helps them achieve better learning outcomes; 90.4 % suppose that reading scientific articles will help them in their further professional activity. 81.7 % of the respondents always trust the scientific results published in scientific journals. 86.2 % consider the results of their own research valuable for science and practice. 76.8 % are sure, that the indexing of a scientific journal by international scientometric databases proves its quality, and 67.7 % still need to participate in seminars, trainings, etc. on the preparation of scientific articles in accordance with international publishing standards.

Categorization of responses to open ended item

The survey showed that 3.2 % of respondents have not read any article in the last year; 16.4 % – 1-2 scientific articles, 23.0 % – from 3 to 5, 13.0 % – from 6 to 10, 44.4 % – more than 10 articles.

53.5 % of respondents who have read scientific journals in the last year prefer Web of Science Core Collection and (or) Scopus indexed journals, 21.0 % – professional Ukrainian journals of category B, 15.5 % – Index Copernicus indexed journals, 10.0 % – archives Zenodo, arXiv.org and Figshare. Among the ranked foreign journals, the respondents noted journals in the field of physics, chemistry, medicine, mathematics and information technology: *Accident Analysis & Prevention*, *ACS Sensors*, *Acta Agrobotanica*, *Advances in Engineering Software*, *Annals of Pure and Applied Logic*, *Applied Nanoscience*, *Applied Surface Science*, *Bioelectrochemistry*, *Biosensors and Bioelectronics*, *Fusion Science and Technology*, *Journal of Electronic Materials*, *Journal of Environmental Chemical Engineering*, *International Journal of Energy Research*, *International Journal of Hydrogen Energy*, *Nature Scientific Reports*, *Nuclear Fusion*, *Physics of Plasmas*, *Specrtochimica acta*, etc.

The publication of scientific articles in journals included to the world's leading scientometric databases (Scopus, Web of Science Core Collection, etc.) is a measure of scientific maturity and professionalism of a scientist. At the same time, it is a highly competitive activity, which, in addition to achieving original and relevant scientific results, also requires authors to be able to communicate with the editors of these publications, as well as reviewers. Meanwhile, a significant number of respondents lack experience in such communication, what can be one of the main reasons for rejecting their articles, as well as leading to misunderstandings in the process of editorial and publishing preparation of scientific texts.

73.0 % of the respondents read articles on the recommendation of teachers, for the preparation of qualifying papers and course projects, and 23.8 % on their own initiative (3.2 % of respondents have not read any article in the last year).

90.4 % of the students believe that reading scientific publications in the specialty is a condition for successful professional activity and career development. In particular, respondents noted the following benefits of reading scientific publications: a great platform for learning brand-new technical information is available, many useful references, mastering new research methods and theories, proposals for cooperation (co-authorship, involvement in projects, etc.), support for scientific controversy, quick report on the latest research results, uniting geographically remote researchers based on common scientific and professional interests and feedback, drawing the attention of Ukrainian scientists to the most important problems and promising areas of world science, promotion scientific achievements in the world, self-development, the opportunity to improve academic writing, an opportunity for distance communication with Ukrainian and foreign scientists, inspiration by the achievements of peers from other countries, formation an integral system of knowledge, professional discussions and solving complex problems, etc.

7.6 % of the students did not support the idea to use scientific journals for their educational purposes and emphasized that scientific journals: (1) do not always give reliable and authentic information, (2) distract from learning, (3) give information difficult to understand, (4) give biased information, (5) give repetitive information, (6) give unsystematized information.

26.0 % of the respondents faced problems reading scientific journals. The problems put forth are categorized into: (1) it is difficult to find the articles related to my research, (2) it is difficult to cite articles in the right way, (3) teachers want to read their publications that I am not interested in; (4) I need moderators of information flows; (5) it is difficult to understand scientific information.

18.2 % of the respondents have published their own articles in scientific journals, mostly as coauthors. Motivation to write articles ranges from the intention to share their scientific results with colleagues, to gain recognition and trust, to gain the opportunity to self-development, to establish professional contacts. Motives determine the choice of the journal for publication of scientific results, and therefore – the speed of publication, the scale of the audience, the context in which the article will appear.

As coauthors students acted in the following roles (answers are placed in descending order of frequency of answers): author of the idea (formulation of ideas, goals and objectives of the study), conducting surveys (development of questionnaires, organization of surveys, processing of personal data), development of research methods research, creation of models), conducting experiments (performing experiments and other experimental research), processing the results of experiments performing calculations, compiling data), checking the results (checking the reproducibility of the results), visualization (preparation of illustrative material), writing an article, translation, editing the article (correction of logical, factual, linguistic, stylistic, compositional and other errors).

27.1 % of the respondents are aware of predatory journals and have identified the following features: mimicking the names of international peer-reviewed journals (the words “American”, “International”, “European”, etc. are in the headlines, but the journals are not included to prestigious scientometric databases, in addition, members of the editorial board do not represent geographical diversity); sending spam invitations to authors; lack of a review procedure (promise of urgent publication); numerous mistakes on the website; proposals to publish articles in any field of knowledge (for example, Austria Science accepts unrelated material from anthropology, biology and demography to mathematics, medicine and pedagogy, all within one issue); lack of information about the founder of the journal, its owner, sponsors; “predatory” metrics that do not have legitimacy, validity and calculation methods (Global Impact Factor, International Impact Factor, General Impact Factor, Cosmos Impact Factor, Directory of Indexing and Impact Factor, etc.); the absence of well-known specialists in the field in the editorial board, as well as the lack of such specialists among the authors; duplication of the web page of famous journals; display of fake logos of authoritative scientometric indexes on the web page; the title does not correspond to the theme, mission of the journal and its true origin; the publishers of these journals send spam requests to young and unqualified scholars to review the submitted manuscripts.

Most of the respondents (72.3 %) understand that the defining indicators of the authority of a scientific journal are: the presence of international editorial boards and publications of foreign authors, support of communication with experts on thematic areas of the journal, the level of cooperation of authors, English language, importance of scientific issues raised in the articles for the international scientific community.

Meanwhile 81.8 % of the respondents have not published any articles in scientific journals. Having the opportunity to choose several answer options or specify their option, the students named the following reasons for the lack of publications: “it is expensive”, “I am overloaded with study (study and work) and do not have time to write articles”, “I do not know English”, “I do not know how to write in accordance with the requirements of scientific journals”, “my ideas are not interesting to anyone”, “I do not know scientific journals from my field”, “I’m not sure about copyright protection, other scientists can use my data”, “I’m not paid for it”, “I’m afraid the data will be misinterpreted”, “I’m afraid that using my data, other scientists will find errors”. Barriers for publishing also include: problems with choosing a topic; lack of theoretical basis for preparation of the publication; lack of reagents, technical means, etc. for empirical research; difficulties in complying with formal requirements for publications; inability to establish and maintain contacts with co-authors; lack of motivation; etc.

Among the reasons for the rejection of the articles, the respondents noted: low scientific value, lack of novelty; plagiarism; inconsistency of the subject of the publication; insufficient involvement of scientific literature; ill-conceived structure of the article.

5. Conclusion

The present study revealed that students are aware of the following advantages of reading scientific articles and publishing their own scientific results in peer-reviewed journals:

- development of international cooperation, promoting the interaction of research teams;
- drawing the attention to the most important problems and promising areas of world science;
- propaganda of the achievements of Ukrainian scientific thought in the world.

In general, the surveyed students understand the importance of acquaintance with scientific publications for their own professional development and are aware of the need to move to world standards of publishing research results. At the same time, the results of our survey showed a contradictory opinion on the publication of research results in scientific journals. On the one hand, it is the desire to reach the international level, to gain world recognition, the attempt to adhere to high standards, to improve their own skills and abilities. On the other hand, the pursuit of quantitative indicators, low motivation, violation of academic integrity, low level of proficiency in the languages of international scientific communication. In the second case, there is no place for such scientific values as novelty, uniqueness, informativeness. The survey showed that a significant part of student youth is still fragmentarily informed about the behavioral norms of the scientific community, traditions of academic integrity, motives and interests of editors, reviewers, and publishers. The diversity of research teams, their isolation does not allow to obtain a synergistic effect from the exchange of research results.

The spread of predatory journals poses a significant threat to science, scientific communication, and authors, leading to violations of the principles of academic integrity and reputational damage. In general, the characteristics of predatory journals are as follows: multidisciplinary journalism, urgent publication of the article, sending spam, lack of peer-review, errors on the journal's website, inconsistency of the editorial board with the subject of the publication, lack of citations of scientific articles in journals included to the leading international scientometric databases.

References

- Beall, 2012 – Beall, J. (2012). Predatory publishers are corrupting open access. *Nature*. 489(7415): 179.
- Beall, 2016 – Beall, J. (2016). Essential information about predatory publishers and journals. *International Higher Education*. 86: 2-3.
- Beall, 2018 – Beall, J. (2018). Potential predatory scholarly open-access journals. [Electronic resource]. URL: <https://bealllist.weebly.com>.
- Berger, Cirasella, 2015 – Berger, M., Cirasella, J. (2015). Beyond Beall's list. *College & Research Libraries News*. 76: 132-5.
- Bohannon, 2013 – Bohannon, J. (2013). Who's afraid of peer review? *Science*. 342(6154): 60-65.
- Bucceri et al., 2019 – Bucceri, A., Hornung, P. (2019). Predatory publishing – what medical communicators need to know. *Medical Writing*. 28(3): 28-33.
- Cherner, Curry, 2019 – Cherner, T., Curry, K. (2019). Preparing Pre-service teachers to teach media literacy: a response to “fake news”. *Journal of Media Literacy Education*. 11(1): 1-31. <https://doi.org/10.23860/JMLE-2019-11-1-1>.
- Clark, Smith, 2015 – Clark, J., Smith, R. (2015). Firm action needed on predatory journals. *BMJ*. 350: h210-h210.
- Demir, 2018 – Demir, S. (2018). Predatory journals: Who publishes in them and why? *Journal of Informetrics*. 12(4): 1296-1311.
- Dossier, 2020 – Dossier: Das Geschäft mit der Wissenschaft, Norddeutscher Rundfunk, NDR (2020). [Electronic resource]. URL: <https://www.ndr.de/nachrichten/investigation/Dossier-Das-Geschaef-mitder-Wissenschaft,fakesciencedossier100.html>
- ELAKPI..., 2021 – ELAKPI: Publications of KPI researchers. Igor Sikorsky Kyiv Polytechnic Institute in Scopus for the IV quarter of 2021 (2021). [Electronic resource]. URL: <https://ela.kpi.ua/handle/123456789/45968>

- ELAKPI..., 2021** – ELAKPI: Publications of KPI researchers. Igor Sikorsky Kyiv Polytechnic Institute in Web of Science for the IV quarter of 2021 (2021). [Electronic resource]. URL: <https://ela.kpi.ua/handle/123456789/45967>
- Fisher, 2018** – Fisher, C. (2018). What Is Meant By “Trust” In News Media? *Trust in Media and Journalism*. 19-38. DOI: 10.1007/978-3-658-20765-6_2
- Friesem, 2019** – Friesem, Y. (2019). Teaching truth, lies, and accuracy in the digital age: Media literacy as project-based learning. *Journalism & Mass Communication Educator*. 74(2): 185-198. <https://doi.org/10.1177/1077695819829962>
- Habibzadeh, 2017** – Habibzadeh, F. (2017). Predatory or Legitimate Journals. *Int. J. Occup. Environ. Med.* 8(2): 67-68.
- Hadi, 2016** – Hadi, M. (2016). Fake peer-review in research publication: revisiting research purpose and academic integrity. *International Journal of Pharmacy Practice*. 24(5): 309-310.
- Harmatiy, 2021** – Harmatiy, O. (2021). Science coverage: What does the audience want and really need? Exploring media consumption in Ukraine. *Journal of Creative Communications*. 16(1): 97-112. DOI: <https://doi.org/10.1177/0973258620981799>
- Jones-Jang et al., 2019** – Jones-Jang, S.M., Mortensen, T., Liu, J. (2019). Does media literacy help identification of fake news? Information literacy helps, but other literacies don't. *American Behavioral Scientist*. 65(2): 371-388. DOI: 10.1177/0002764219869406
- Manca et al., 2020** – Manca, A., Cugusi, L., Cortegiani, A., Ingoglia, G., Moher, D. (2020). Predatory journals enter biomedical databases through public funding. *BMJ*. 371: m4265.
- Mazières, Kohler, 2014** – Mazières, D., Kohler, E. (2014). Get me off your mailing list [Electronic resource]. URL: <http://www.scs.stanford.edu/~dm/home/papers/remove.pdf>
- McDougall, 2019** – McDougall, J. (2019). Media literacy versus fake news. *Medijske Studije*. 10(19): 29-45. DOI: 10.20901/ms.10.19.2
- McGrew et al., 2018** – McGrew, S., Breakstone, J., Ortega, T., Smith, M., Wineburg, S. (2018). Can students evaluate online sources? Learning from assessments of civic online reasoning. *Theory & Research in Social Education*. 46(2): 165-193. DOI: 10.1080/00933104.2017.14163
- Memon, 2019** – Memon, A. (2019). Predatory journals spamming for publications: what should researchers do? *Sci. Eng. Ethics*. 24(5): 1617-1639.
- Moher et al., 2017** – Moher, D., Shamseer, L., Cobey, K., Lalu, M., Galipeau, J., Avey, M., Ziai, H. (2017). Stop this waste of people, animals, and money. *Nature*. 549(7670): 23-25.
- Predatory report, 2020** – Predatory report (2020). [Electronic resource]. URL: <https://blog.cabells.com/2020/07/01/reversal-of-fortune/?fbclid=IwAR1wmG9nNHVwPAIcV4qLLBB84m9J35BeWSLm96QeKYXGGVUhrnUChoteEbg>
- Purtilo-Nieminen et al., 2021** – Purtilo-Nieminen, S., Vuojärvi, H., Rivinen, S., Rasi, P. (2021). Student teachers' narratives on learning: A case study of a course on older people's media literacy education. *Teaching and Teacher Education*. 106: 103432. <https://doi.org/10.1016/j.tate.2021.103432>
- Rating..., 2021** – Rating of universities by Scopus (2021). [Electronic resource]. URL: osvita.ua/vnz/rating/82316/
- Schilder, Redmond, 2019** – Schilder, E., Redmond, T. (2019). Measuring media literacy inquiry in higher education: innovation in assessment. *Journal of Media Literacy Education*. 11(2): 95-121. DOI: <https://doi.org/10.23860/JMLE-2019-11-2-6>
- Sharma, Verma, 2018** – Sharma, H., Verma, S. (2018). Predatory journals: The rise of worthless biomedical science. *Journal of Postgraduate Medicine*. 64: 226-231. DOI: https://doi.org/10.4103/jpgm.JPGM_347_18
- Sorokowski et al., 2017** – Sorokowski, P., Kulczycki, E., Sorokowska, A., Pisanski, K. (2017). Predatory journal recruits fake editor. *Nature*. 543(7646): 481-483.
- Teixeira da Silva, 2017** – Teixeira da Silva, J.A. (2017). Jeffrey Beall's “predatory” lists must not be used: they are biased, flawed, opaque and inaccurate. *Bibliothecae.it*. 6(1): 425-436.
- The Commission..., 2012** – The Commission on Ethics in Science (2012). [Electronic resource]. URL: ue.poznan.pl
- Tsuyuki et al, 2017** – Tsuyuki, R., Al Hamarneh, Y., Bermingham, M., Duong, E., Okada, H., Beall, J., et al. (2017). Predatory publishers: Implications for pharmacy practice and practitioners. *Can Pharm J (Ott)*. 150: 274-275.

[Urazova, 2014](#) – *Urazova, D.* (2014). Publications in pseudoscientific journals damage reputation of Kazakhstani scholars. [Electronic resource]. URL: <http://m.tengrinews.kz/en/science/Publications-in-pseudoscientific-journals-damage-reputationof-Kazakhstani-255439>

[Valtonen et al., 2019](#) – *Valtonen, T., Tedre, M., Mäkitalo, K., Vartiainen, H.* (2019). Media literacy education in the age of machine learning. *Journal of Media Literacy Education*. 11(2): 20-36. DOI: 10.23860/JMLE-2019-11-2-2

[Xia et al., 2015](#) – *Xia, J., Harmon, J., Connolly, K., Donnelly, R., Anderson, M., Howard, H.* (2014). Who publishes in “predatory” journals? *Journal of the Association for Information Science and Technology*. 66(7): 1406-1417.