STRATEGIES FOR DEVELOPING A RESEARCH PAPER INDEXED IN INTERNATIONAL SCIENTIFIC DATABASES

Abstract. In today’s fast-paced scientific world, getting your research published in top journals and included in international databases is crucial for researchers who want to share their findings and boost their reputations in a scientific field. This article focuses on the strategies and methods used to write research papers that get indexed in these databases, giving researchers helpful advice and a deeper look into the complexities of scientific publishing. Technology plays a crucial role in making the process of writing research papers more efficient. Information technology helps in information searches using databases like Web of Science, PubMed, Scopus, and Google Scholar. Advancements in tools like Python and Matplotlib have empowered researchers to analyze and visualize data, leading to a better understanding of findings. To create powerful research papers, authors widely use the IMRaD structure. This type of structure allows scientists to present their work clearly and logically, increasing comprehension and dissemination of knowledge. A survey of 17 university teachers revealed challenges in research paper
writing. Based on their experiences, suggestions are provided for selecting topics, reviewing literature, and analyzing data. The importance of careful manuscript preparation, and using technology is stressed to enhance research and recognition in the academic community. Citation management software and tools like Grammarly ensure language quality and proper citation formats. The paper aims to guide researchers through topic selection, literature review, methodology design, writing style, and revision based on feedback. Leveraging academic networks and social media can boost visibility and impact. Embracing current technologies accelerates research and enhances recognition in the scientific community. This paper provides practical advice and crucial information for scientists in the competitive world of scientific publishing. To succeed, researchers should use technology, follow accepted standards, and take advantage of available resources. These strategies will increase the visibility and influence of their work in international scientific databases, furthering the growth of knowledge and scientific discussion.

Keywords: research paper, international scientific databases, indexing, academic writing, literature review, peer review, submission process, accessibility.

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Стратегії підготовки наукової статті, що індексується в міжнародних наукових базах даних

Анотація. У сучасному науковому світі публікація результатів досліджень у провідних журналах та включення їх до міжнародних баз даних має досить вирішальне значення для науковців, які хочуть поширити інформацію про свої наукові досягнення. Дана стаття присвячена стратегіям і методам написання наукових робіт, які індексуються в міжнародних базах даних, і містить корисні поради для дослідників, які можуть сприяти більш ефективному написанню таких наукових публікацій. ІКТ відіграють допоміжну роль у підвищенні ефективності процесу написання наукових робіт. Інформаційні технології допомагають у пошуку інформації за допомогою таких баз даних, як Web of Science, PubMed, Scopus та Google Scholar. Розвиток таких інструментів, як Python і Matplotlib, уможливає здійснення аналізу та візуалізації даних, що сприяє кращому розумінню отриманих результатів. Для створення потужних наукових робіт сучасні науковці широко використовують структуру IMRAD. Цей тип структури дозволяє вчителям представити свою роботу чітко і логічно, що сприяє кращому розумінню і поширенню знань. Нами проведено опитування 17 викладачів університету, окреслено основні ключові задачі та виклики, що постають при написанні наукових робіт. На основі їхнього досвіду надаються рекомендації щодо пошуку інформації, огляду літератури, та аналізу даних. Підкреслюється важливість дотримання вимог журналів, ретельної підготовки рукопису та використання сучасних технологічних ресурсів для підвищення рівня досліджень і подальшого визнання публікації в академічній спільноті. У статті автори надають практичні поради та важливу інформацію стосовно ефективних інструментів, які будуть корисними для науковців у конкурентному світі наукових публікацій. Щоб досягти успіху, дослідники повинні чітко дотримуватися вимог, що висуваються до такого типу публікацій, притримуватися прийнятих стандартів і використовувати наявні технологічні ресурси. Ці стратегії можуть допомогти підвищити якість наукових робіт, що сприятиме зростанню знань і наукової дискусії.

Ключові слова: наукова стаття, міжнародні наукові бази даних, індексування, академічне письмо, огляд літератури, рецензування, процес подання.

Introduction. Sharing research findings in respected journals is very important in today’s science world. Databases like Google Scholar, PubMed, and Scopus are vital for scientists to find papers and articles for their research. It is hard for many scientists to write articles due to strict academic English rules. Technology is now essential in science, aiding in communication, publication, and all scientific
work. Scientists rely on technology to succeed in the science world and get their work into databases. Modern technology makes it easier to find and assess scientific material. It also helps scientists analyze texts to find patterns that lead to new ideas and theories.

IT is vital in today’s science. It helps in sharing and publishing work, and in writing articles. It is crucial for success in science, leading to the acceptance and inclusion of articles in databases. Tech makes it easier to find and review scientific work. It helps in analyzing texts to find patterns and trends, aiding in creating new ideas and hypotheses.

Today in science, sharing research in respected journals is very important. However, many researchers find it hard to write articles in academic English and follow strict formatting rules. So, publishing research has become a big task for all scientists.

Cuschieri, Grech, and Savona-Ventura (2019) highlight the growing trend among scientists to publish their research in journals included in renowned citation databases. They underscore the difficulties researchers face, such as the demand for proficient academic English writing skills and the exacting standards for article formatting. The authors emphasize the importance of effectively communicating research findings, suggesting that mastering the art of scientific writing is indispensable for contemporary scientists.

The competition between two prominent citation databases, Web of Science (WoS) and Scopus, is noted by Zhu and Liu (2020). While both databases are increasingly prevalent in academic articles, WoS maintains its position as the industry leader, with Scopus emerging as a formidable competitor. The widespread adoption of these databases by researchers worldwide underscores their significance across diverse disciplines and geographic locations.

Gasparyan and Kitas (2021) discuss the implications of journal indexing by global bibliographic databases in the digital age. They emphasize that understanding the indexing process and its ramifications is crucial for authors and editors alike. The authors advocate for the publication of high-quality research to enhance visibility and impact, thereby contributing to the advancement of knowledge in respective fields.

Authors can enhance research paper indexing by collaborating with specialized databases, focusing on search functionality, and understanding the indexing process, especially with Google Scholar's mechanisms.

**Purpose of the article.** The purpose of the article is to guide researchers in effectively navigating the process of structuring, writing and publishing scientific papers. It acknowledges the challenges scientists face in meeting the strict formatting guidelines and linguistic criteria required for publication in respected journals indexed in prestigious databases. The article aims to demonstrate the pivotal role of knowledge in publishing a scientific paper in facilitating various aspects of the article production and publication process, particularly in terms of literature search, data analysis, and visualization.
Main part. Technologies help scientists in structuring and designing scientific articles. This aspect plays a key role in the process of writing scientific papers. Search engines can guide the general structure of an article according to IMRAD and other academic standards. IMRAD is an acronym that represents the structure of a scientific article or research study. This structure helps organize the information in the article for readers and reviewers to promote clarity and ease of finding the data they need.

The abbreviation IMRAD consists of abbreviations of the following sections:

I - Introduction: In this section, the authors of the article present the context and motivation of the study to the readers. They explain why the research is important, define the object and purpose of the research, sometimes formulate a hypothesis, and also reveal a brief review of the literature related to the chosen topic. The Introduction section should explain to readers what to expect from your research and help them understand why and how you conducted your study. In short, a strong introduction should allow readers to determine whether or not to read your paper, especially when it comes after a strong title and abstract (Lang, 2017).

M - Methods: The authors describe in detail the methods they used in the study. The chapter contains a description of the experiments, data collection, tools used, analysis and statistics that the authors used. The purpose of this section is to provide readers with an opportunity to repeat the research and verify the results.

R - Results (Results): The authors present the research results found. These can be numerical data, graphs, tables and other visual aids that demonstrate the answers to the questions posed or confirm the hypothesis. The results should be presented consistently and clearly.

D - Discussion: In this section, the authors analyze the obtained results and explain their significance. They can also compare their results with those of previous studies, and discuss possible limitations and prospects for further research. The discussion section is the most difficult to write. This is where the author’s abilities and skills are on display: either through a critical evaluation of their findings or through the execution of the study in comparison to other studies of a similar nature (Teodosiu, p.207)

IMRAD is a commonly accepted framework for many scientific articles, especially in the fields of natural sciences and medicine. However, variations of this structure may exist depending on the specific journal or publication requirements, sometimes an Acknowledgments section and necessarily References may be added, where the authors indicate the sources used in the study.

The importance of the quality of writing scientific articles is obvious. Modern resources assist authors in correcting grammatical and stylistic deficiencies, increasing the overall level of research quality (for example, Grammarly). They can check the correct usage of terms, punctuation and sentence structure, ensuring a professional appearance of the publication. In addition, corrections of stylistic errors and recommendations for improving the clarity of the text can help scholars communicate their ideas to the audience more effectively.
Modern technology helps scholars format citations and references correctly according to various citation styles such as APA, MLA, Chicago, and many others. Adjusting quotations of sources is an imperative component of recognizing sources and dodging literary theft, which is of incredible significance within the scholarly environment. Administrations such as Zotero, Mendeley, and EndNote offer assistance to oversee bibliographic information and effortlessly arrange references agreeing to diverse insightful styles. They allow you to save sources, as well as automatically generate a bibliography. Tools like ORCID help uniquely identify authors and track their scientific achievements.

An important stage in many scientific studies is data analysis and visualization. Information and communication technologies provide tools for statistical analysis and graphing that help support evidence in a scientific paper. Programming languages such as Python, at side libraries such as Matplotlib, Pandas, and others, have ended up well-known devices for information examination and visualization of investigative discoveries. The plausibility of programmed information examination permits researchers to rapidly identify patterns as well as visualize them much better.

One of the key requirements for including an article in scientometric databases is its originality. Language and information technologies can help detect any signs of plagiarism and provide recommendations for avoiding it. Plagiarism-checking tools such as Turnitin, Copyscape and others have become integral parts of the process of confirming the originality of scientific articles.

Machine learning can be used for pattern recognition in scientific texts, automatic classification and data analysis. It can be useful for automatically detecting new scientific trends, analyzing texts for specific keywords or topics, and supporting decision-making in scientific communication. The use of modern technologies helps in all aspects of scientific activity, that is, with literature analysis, data analysis, visualization, and planning, which are necessary when writing scientific articles. Scientists should consider modern technologies as an important tool for intensifying the process of scientific research and accept them as an integral part of modern scientific practice. Deserving of recognition and dissemination, they help ensure the advancement of scientific knowledge and achievements.

The experimental part of the paper involved conducting a questionnaire survey among university teachers who have experience in writing scientific papers and in guiding students in developing research papers. A total of 17 university teachers from diverse academic disciplines participated in the questionnaire survey.

The questionnaire consisted of 14 questions aimed at eliciting insights into the strategies, challenges, and best practices employed by university teachers in guiding students through the process of developing research papers. The questions covered various aspects such as topic selection, literature review, research methodology, paper structuring, citation and referencing, as well as strategies for improving the visibility and impact of research papers.
Questionnaire for teachers’ experience in writing research papers:
1. What is your academic field and area of expertise?
2. How long have you been actively involved in writing and publishing scientific papers?
3. Would you like to share your experience of working in a team with colleagues on research projects?
4. What are the main problems you have had while conducting research and writing a paper?
5. How do you commonly choose a topic and a research question for your scientific papers?
6. What strategies or methods do you use to conduct thorough literature reviews for your research papers?
7. What approaches do you use to collect and analyze data in your research?
8. Have you had difficulties with indexing your scientific works in international scientific databases?
9. What academic resources or tools would you recommend for improving and developing the quality of articles in the writing process?
10. How would you evaluate the overall quality of your research paper?
11. From your experience, what elements do you believe enhance the likelihood of your research paper being indexed in international scientific databases?
12. Describe any specific techniques or guidelines you employ to increase the visibility and impact of your research.
13. Have you sought guidance from workshops or seminars on effective research paper writing and publication?
14. Based on your research writing expertise, share any additional tips or strategies that you find beneficial.

The responses to the questionnaire were examined using a combination of methods, including both qualitative and quantitative approaches. The qualitative analysis focused on uncovering recurring ideas, patterns, and insights expressed in the participants’ responses. The quantitative analysis utilized statistical measures like frequencies, percentages, and averages to measure specific aspects of the participants’ perspectives and experiences.

The study revealed that:
- Researchers from various academic disciplines (e.g., humanities, social sciences, engineering) participated.
- Most participants had extensive experience (minimum 10 years) in writing and publishing scientific articles.
- A significant majority (over 40 %) engaged in collaborative research projects, highlighting the significant role of teamwork in academic research.
- The participants outlined that common challenges included literature review overload, difficulty in formulating research questions, and data analysis complexities. In addition, they mentioned that have a lack of time for providing
effective research as they have difficulties in combining teaching and experimental studies.

- Participants emphasized the importance of relevance, novelty, and feasibility in formulating research questions.

- Most participants employed a combination of database searches, citation chaining, and consultation with experts to conduct comprehensive literature reviews.

- Approximately 50% of participants reported that they had difficulties with indexing their scientific works in international databases and mentioned lengthy review processes.

- Commonly recommended resources included academic databases, citation management software, and academic writing guides.

- Strategies included publishing in reputable journals, presenting at conferences, and engaging with social media platforms for academic dissemination.

- Over 40% of participants had attended seminars or trainings on writing and publishing scientific papers, indicating a proactive approach towards professional development.

Overall, the findings provide valuable insights into the experiences and strategies of university teachers in writing and publishing scientific papers, highlighting areas for improvement and avenues for further research. To develop a research paper indexed in international scientific databases, several strategies can be employed based on the information from the provided sources:

1. Focus on internationalization: Ensure your journal has an international composition of the scientific committee, authors from various countries, and an international audience to enhance its global appeal.

2. Enhance journal reputation: Highlight unique features of your journal, showcase accomplishments, and focus on quality content to attract indexers like SCIE.

3. Overcome language barriers: While not mandatory, consider publishing content in English or offering bilingual options to cater to a broader audience and improve accessibility.

4. Diversify content: Include various types of content like review articles, editorials, and letters to the editor to make your journal more appealing to readers and indexers.

5. Follow indexing criteria: Adhere to publication standards, technical requirements, and application guidelines of different indexes like PubMed, Scopus, and Web of Science to increase the chances of acceptance.

6. Prepare manuscript carefully: Organize your manuscript following the IMRAD format (Introduction, Methods, Results, and Discussion), pay attention to details, and ensure a clear and concise writing style to meet the standards of journal editors.

Nowadays innovations have become essential tools for scientific communication and publications. They impact various aspects of scientific activity
and are crucial for the successful recognition and inclusion of scientific publications in scientometric databases. Search engines and scientific databases are vital for scientific research, helping to identify relevant scientific publications, articles, and studies, which aids in organizing existing information and data for further use in research. Modern information and communication technologies assist authors in correcting linguistic and technical errors, ensuring the correctness of term usage, punctuation marks, and sentence structure. These days information and communication technologies also help authors properly organise citations and references according to various citation styles, such as APA, IEEE, or Chicago, simplifying the scientific process. Commonly, ICT improves the quality and accessibility of scientific publications, contributing to the dissemination of scientific research at the international level.

There are certain requirements for articles. The paper should present original research that has not been previously published and is not being considered for publication in another journal; any copying of text, figures, data or results of other authors without references is considered plagiarism. The article must meet the requirements for structure and style set out in the Guidelines for Authors. The work should not violate the intellectual property rights of others.

There are also certain requirements for the formatting of the bibliography. They usually depend on the requirements of a particular journal, but the most general requirements can be identified. In empirical papers, the author should cite at least 25 sources. Researchers should format references following the standard and requirements of the referencing style. Authors should choose only reliable sources they are going to use. If it is not possible to identify the author or year of publication, it is recommended to refuse to cite such a source as it can be inappropriate. Most of the items in the list should be sources from the last 5 years. Preferably, these should be articles from reputable journals indexed in Web of Science and/or Scopus. It is not recommended to cite textbooks, manuals, or teaching aids if the analysis of didactic materials was not the purpose of the study. References to conference abstracts and other materials that have not been peer-reviewed before publication should be minimised.

**Conclusion.** In the modern world, where dissemination of research results is an important factor, the indexing of a paper in international scientific databases is an indicator of the importance of the analysed information. To write an effective research paper, choosing a research topic is crucial. This is followed by a thorough literature review, in which researchers examine reliable sources to understand the state of the art and identify areas where they can make new contributions. Another important step is to develop a methodology. To be sure that validity, reliability, and all ethical issues are taken into account, researchers must choose appropriate scientific methods. To write a powerful article, you need to organize its sections in a clear and logical sequence, using, for instance, the IMRaD structure. Writing style and quality of language are very important when it comes to effectively presenting
research findings. Taking into account the importance of grammar, structure, punctuation, and formatting, researchers should write, objectively, and concisely. During the publication process, revisions will be made based on the possible recommendations of reviewers. Selecting the right journals indexed in scientific databases is critical for publication. To increase their chances of being accepted, researchers should carefully review journal requirements and follow submission procedures.

Investigation has shown that it is very important to increase impact and visibility. To present the results, researchers can interact with the scientific community and share their results participating in conferences and other academic networks. One of the more significant findings to emerge from this study is that by putting these methods into practice, researchers can contribute to the development of knowledge in their specific fields, which will increase the possibility that their work will be recognised and indexed in international scientific databases.

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**Література:**