How to Write and Publish a High Quality Scientific Research Paper Step by Step

Dr.Praveen B. Hulloli

Librarian & HOD, Library and Information Centre, KLS Gogte College of Commerce
Belagavi, Karnataka-India

Abstract—Publishing high quality research is a universally widespread issue among researchers and scientists. The actual writing of a research paper may not consume a lot of time, however the process of ensuring that the research paper gets published in high regard scientific journals is a tedious one and there are set rules that must be adhered to. The submissions made to the editors are of poor quality that is not accurate, structured and technically performed to be accepted frequently. The given situation demonstrates the paramount significance of the researchers to study how to draft a research paper sequentially and combine an in-depth understanding of the disciplinary requirements and the possibility to utilize the relevant technical equipment. The paper outlines a stepwise plan of developing these core competencies and enables the authors to reorganize their works into technical high quality, editorially sound articles that are sophisticated and valuable towards the scientific conversation across the world.

Index Terms—Academic Writing, Paper Writing, Scientific Paper, Method, High-Quality, Research.

I. INTRODUCTION

A research paper has the main parts, which are the abstract, introduction, methods, results, discussion, and conclusions. All parts of the manuscript are relevant and play a certain part in the description of the research story as per (Willis, 2023). The ability to write a quality scientific research paper is one of the fundamental capabilities of the researcher without which he/she will not be able to share new knowledge and work in the world scientific field. Not only is it capturing your findings but also it is to be able to present your work in a manner that is clear, precise and rigorous so that your colleagues can understand your work, critique it, and build on your work. This guide will also take you through step-by-step procedure of bringing the raw data and new ideas to a peer-research quality and peer-review read publication.

Figure-1: Writing a successful research paper

Source:https://pubrica.com/academy/uncategorized/tips-for-how-to-write-a-scientific-research-paper/. We will discuss how to organize the main parts of the paper Introduction, Methods, Results, and Discussion as well as learn how to visualize data, use references correctly, and follow the ethical and moral standards. When you pay attention to these things, you will greatly improve the integration and validity of your scientific work.

II. WHY DO RESEARCH?

The primary goals of research are to advance knowledge in a field of study, provide evidence for theories, and inform action. Why do research important point like: Doing research broadens your knowledge, You can get the most recent facts through research, Doing research increases your reputation, You can reduce your scope by conducting research, Research exposes you to novel concepts, Learn to make better decisions by conducting research, Curiosity is stimulated by research, Solving problems is aided by research.
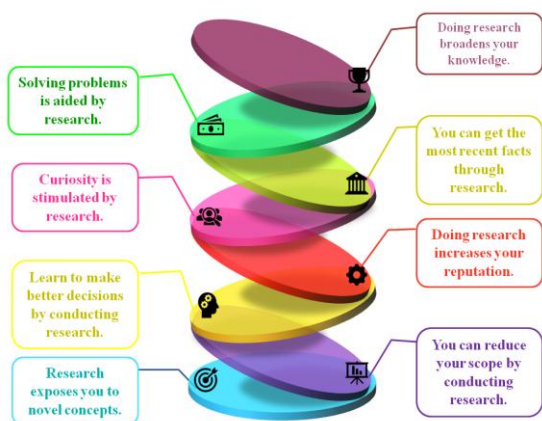
Figure-2: Why Do Research

Research is undertaken in order to develop knowledge, give solutions, inform, and move the knowledge in a given field. It is an organized method of discovering evidence, rebuffing lies and promoting facts, resulting in innovativeness, economic advancement, and increased awareness of social challenges. Research also instills such desirable skills as critical thinking and analysis making one ready to go into academia or professional life.

III. HOW TO WRITE THE TITLE

A title must be easy to understand, explain, and attractive to attain the attention of the appropriate audience and make proper sense of the purpose of the content. The most appropriate titles include the relevant keywords in order to make them searchable. Source:https://www.freepik.com/premium-photo/focused-young-businessman-sitting-desk-office-writing-notepad_65531300.htm

Figure-3: Write the title

Be precise and informative: Be accurate and informative: The title must indicate the general overview of the central concept, aim or conclusion of the work. Do not retire out of print without supporting it or pollute the reader, Keep it Concise: Aim to use the fewest possible words to provide the content adequately, lesser than 10-14 words and avoid cliched expressions. Use Keywords: insert Keywords which are relevant and specific to what your target audience would be searching as a result of them researching on your topic. One should also ensure that the keywords should appear at the earliest in the title as much as possible to ensure that the search engines make use of that. Connect to the Reader: The title should not be complex, yet follow up the reader. Energetic use of verbs, figures or bit of interest in order to make it appealing. Avoid Jargon and Abbreviations: It is advisable that no jargon, abbreviation or formulae are used though one is writing about the highly specialized community where most of the technical names are likely to be used, unless one is writing to the highly specialized audience. Consider Your Audience and Tone: Switch the style to the platform and the audience. The title of an academic research paper will be more professional in comparison to a blog post which may be more imaginative or may have questions.

IV. WHO TO WRITE THE TOPIC REVIEW OF LITERATURE?

In order to write a literature review, you have to select a topic first and then search extensive literature resources. Then again critically review the literature and arrange the sources on themes or any other logical division (such as chronological or methodological) and generate a thesis or purpose statement to your reading. Lastly, compose the review having an introduction, main body which synthesizes the sources and finally a conclusion summarizing your findings and gaps that can be filled up in future research.

V. HOW TO WRITE THE METHODS AND METHODOLOGY

The big picture approach and reason of your research is known as methodology, whereas techniques and procedures that are applied to collect and analyze data are referred to as methods. In order to write them, first

tell us about your general approach (e.g. qualitative, quantitative, or mixed) and why you think it fits your research question. Then, explain what data collection techniques (such as surveys or interviews) and data analysis techniques (such as statistical tests or thematic analysis) you will utilize. According to (Bouchrika) "The confusion between "methodology" and "methods" in research is a common occurrence, especially with the terms sometimes being used interchangeably". Describe your basic methodological framework (e.g., quantitative, qualitative, mixed-methods, experimental, ethnographic) and begin by restating your research topic or thesis.

Figure-4: write the methods and methodology

According to (Goddard & Melville, 2001) "The main aim of research is not merely to gather information. Instead, it goes beyond that. The true goal of research is to seek answers to previously unanswered questions to contribute to the body of knowledge in a discipline". However, you must provide proof of the authenticity or veracity of your newly generated knowledge in order for your peers-and the entire world-to accept it (Cited page-1).

The Methods: Methods are the particular, practical instruments and processes that you employ in order to truly gather and examine the information. It is what was done in a step-by-step manner; the detailed description here would ensure that your study can be repeated by another researcher. Purpose: The goal is to provide enough useful information so that your research can be transparent and repeatable.

Components: Data Collection: Explain how exactly data was collected. Tools/Instruments: List the particular tools such as surveys, interview questionnaires, or lab equipment. Sampling: How did you sample, what was the target population, sample size and inclusion/ exclusion criteria. Procedure: Describe the method of data collection (e.g., we have conducted semi-structured interviews with 15 respondents... or we reweighed weights after one week...). Data Analysis: Explain how you have processed and analyzed the data. In the case of quantitative research, this may include defining statistical tests or programs involved. In the case of qualitative research, this may include content, thematic or discourse analysis techniques.

VI. HOW TO WRITE THE DATA ANALYSIS AND RESULTS

Data Analysis: This section of the research paper is very important as all researchers and investigators should check the correct data and calculations, and that academic research papers should outline the standard structural components of the Data Analysis Parts which includes introduction to methods, use of software and presentation of results. Start with a description of the methods of analysis employed (e.g. ANOVA, thematic analysis, regression). Indicate clearly the software to be used (e.g., SPSS, R, NVivo, Tableau) and the version. This provides transparency and reproducibility. (Lovei, 2021) "The results must be new, possibly significant, compellingly represented, and the claims well-supported by evidence, this is the part where the new information appears, and one has to be very careful in about how to present this new knowledge" (Cited page-67).

Figure-5: Write the Data Analysis and Results

Learn something about the overall procedure of writing a section on data analysis, especially in how to transition between processed data and narrative description and interpretation. Know and distinguish

the various kinds of available data analysis software such as statistical packages, qualitative analysis software and data visualization software. Identify optimal methods of unambiguously incorporating the use of software and accounts of particular analytical steps into the written narrative. Locate scholarly standards on the necessary amount of detail used when reporting statistical tests and model output obtained using analysis software. Gather examples of quality, succinct data analysis summaries published research to be used as a guide on how to structure a paper with a strict word limit. Interpret some of the frequent mistakes or points of criticism where researchers have not completely explained the relationship between the software operations and their analysis findings. Write about important facts rather than unimportant ones. Mention the ineffectiveness of a variable, but don't go into too much detail. Not all data need a table.

Results: Determine the adversarial contrasts between Results section (objective presentation of data) and the two other sections, the Discussion/Analysis section and the interpretation of the meaning and implications of that data. Learn how to use the most effective methods to keep the academic language objective and evidence-based, particularly when writing about unexpected or insignificant findings and avoiding over-generalization. Identify the traps and shortcomings to writing the Data Analysis section, which include presenting new data, duplicating findings, or looking for unnecessary speculation. Organize the obtained material into a concrete plan of what it is necessary to do to write a strong data analysis section and set the goal to write about 250 words.

VII. HOW TO WRITE THE DISCUSSION

It is in the Discussion part that you discuss and interpret the meaning of your findings. It must not be just a mere restatement of the results.

Begin with Interpretation: Concisely summarize your main findings, and then explain what your results mean in reference to your study question and hypotheses. Were the findings in line with your expectations or otherwise verify. Relate to Literature: Compare your results with the available literature that you consulted. Discuss how your work contradicts, verifies or develops the work of others. Talk about Significance and Implications: Talk about the theoretical or practical ramifications of your work.

Why do your results matter? Write what are the new insights they bring. Briefly State Limitations: Summarize any limitations or weaknesses of your study design, and how these limitations or weaknesses could have influenced the results. Future Research: Sum up by giving particular directions in which your study would be followed in the future depending on the limitations and new questions that are posed by your study.

VIII. HOW TO WRITE CITE AND REFERENCES

One of the most essential and challenging issues of writing a research paper is referred to as citation. Writing scientifically reference is very important you can use free or commercial citation tools and reference management software and made to easy write your reference and cite. It possesses a range of fundamental provisions that help your work in maintaining integrity, credibility and academic value. Evidence and Authority: By citing examples, you are able to show that your arguments and claims are not based on opinion, but are backed by an authoritative evidence of previously established research, facts, and experts within the field. This makes your paper more compelling. According to (Vijai, Natarajan, & Elayaraja, 2019) "The correct citation of references is an honor to original ideas of previous authors and to avoid plagiarism" (Cited page-586).

Figure-6: Citation Tools and Reference Management Software

Contextualization: It is putting your own work into context, you contextualize your own research, by putting your research in a larger scholarly argument (the literature review) and demonstrating how your

research adds to, challenges or expands the known body of knowledge. Reward Credit Where It Due: Citation plays the most important moral part of giving credit to the original creators of the ideas, theories, data, or words. This is one of the main signs of decency among the academic fraternity. Preventing Plagiarism: Plagiarism is the theft of another individual work without giving proper credit which is a grave academic offense. The right citation is the automatic and mandatory defense against the accidental or intentional plagiarizing. Reader Checking: References provide guidance to both readers and peer reviewers. They will be able to quickly find and confirm the initial sources that you referred to identify how accurate your interpretation is. Leading Future Researchers: A detailed list of references (the bibliography or works cited list) will provide a roadmap to researchers who want to knowledge the subject of your topic. They may rely on your sources to expand their knowledge or set up gaps on which new research can be conducted. Exerting Expertise: Correct, consistent, and accurate referencing (e.g., to APA, MLA, Chicago, etc.) demonstrates that one is a skilled and professional scholar that knows and follows the conventions that are set in the field they are writing within.

IX. HOW TO PUBLISHING THE RESEARCH PAPER

To achieve success in publishing your completed research paper, it is important to ensure you select the journals carefully and submit them. This is an important step that requires an analysis of possible places of publication in order to find the optimal place to publish.

Figure-7: Research Paper Publishing Steps

Source: https://www.ardaconference.com/blog/how-to-publish-research-paper-in-journal/ The initial parameter that should be examined is the scope and specialization of the journal. It should correspond perfectly with the subject issue in your research paper. Another thing to examine is the history of publication of the journal- how many years the journal is old, this shows that it is not a new experimental journal but is reliable and well reputed. In order to measure the impact and quality of the journal, consider such important bibliometric measures as Journal Impact Factor (JIF): This measure is used to indicate the average number of references being cited to the papers published in that journal within a specific two-year period implying its visibility and relevance. Before send your research paper to publisher, most important you think and check few online website like: https://thinkchecksubmit.org/,https://retractionwatch.com.

Indexing: Check the indexing (e.g., Web of Science, Scopus, PubMed etc…). Being featured in the reputable databases, in its turn, will make your published work much more visible and reputable. H-index and G-index are author-level measures although they are usually cited in journals based on the articles published. The h-index is used to quantify the productivity/citation impact (an h-index). A variant of the g-index is the g-index that puts more emphasis on highly-cited papers. When the index is higher than it is a sign of a more influential journal.

The first important thing you should do after publication of your research paper is to satisfy depositories and requirements. Make sure that you give the necessary depository copies or send the digital file to the relevant digital repository. Notably, forward copies to your sources of funds as in many cases this is a contractual requirement. Then use your publication as a networking tool. Share them with your co-workers, group leaders, supervisors, and other people in your field to establish cooperation and appreciation also reflect on other people or organizations that may be interested in the information that you have published and you to publicize your published paper to a broader audience.

X. CONCLUSION

The challenge of writing a high-quality research paper is a pervasive and global issue confronting numerous

researchers and scientists. While the physical act of drafting a manuscript may not consume excessive time, securing publication in a reputable scientific journal demands a significantly greater amount of focused effort and technical skill. The primary hurdle lies not just in documenting findings, but in structuring the work, presenting the data rigorously, and articulating the scientific narrative in a manner that meets the exacting standards of journal editors and peer reviewers. This critical gap between conducting good science and successfully communicating it underscores the necessity for structured, step-by-step training in research paper writing. Mastering this process is essential for global scientific contribution. It requires a comprehensive understanding of journal submission guidelines, ethical considerations, and the strategic application of technical tools for everything from literature management to statistical analysis and graphical representation. Ultimately, viewing the preparation of a manuscript as a distinct, specialized process-rather than a mere afterthought-is crucial for translating impactful research into globally recognized and published knowledge, thereby maximizing its influence on the scientific community.

REFERENCES

[1] D. D. Willis, "How toWrite the Methods Section of a ResearchManuscript," Respiratory Care, vol. 68, no. 12, pp. 1763-1770, 2023.

[2] I. Bouchrika, "How to Write Research Methodology for 2026: Overview, Tips, and Techniques," Online web site.

[3] W. Goddard and S. Melville, Research Methodology: An Introduction, Lansdowne, 2001.

[4] G. L. Lovei, Writing and Publishing Scientific Papers, United Kingdom: Open Book Publishers, 2021.

[5] C. Vijai, K. Natarajan and M. Elayaraja, "Citation Tools and Reference Management Software for Academic Writing," GIS Business, vol. 14, no. 6, pp. 586-596, 2019.

[6] P. B. Hulloli and M. P. Hulloli, "Smart Digital Tools for Researchers," in Health Science Library Association, on Biomedical and Clinical research support system, Mangalore, 2009.

[7] A.-H. Muhamad, "How to Write and Publish a Scientific Paper?," Journal of Clinical Case Studies, Reviews & Reports, vol. 4, no. 11, pp. 1-3, 2023.

[8] R. B. Taylor, Medical writing: a guide for clinicians,educators, and researchers., New York: Springer.

[9] C. T. Bishop, How to Edit a Scientific Journal, Baltimore: Williams and Wilkins, 1984.

Authors Information:

Dr.Praveen B. Hulloli is a distinguished academic and Librarian & HOD with 25 years of rich experience in various interdisciplinary fields. He holds an M.Lib & Info.Sci, M.Sc (Information Technology), M.A (Psychology), and M.A (Sociology) from Mysore and Dharwad University Karnataka and earned his Ph.D. from Rani Channamma University Belagavi, Karnataka, India. His extensive expertise spans multiple domains. In Library Science his interests encompass Scientometrics, Bibliometrics, Webmetrics, Informatics, Librametrics, Library Data Analytics, Citation Analysis, Digital Library, and User Study. Within Psychology he focuses on Organizational Psychology and Principles of Psychoanalysis. While his work in Sociology covers Rural Sociology, Urban Sociology, and Social Demography. Furthermore, his knowledge in Information Technology includes DBMS, Computer Networks, Multimedia Applications, Digital Libraries, Web Design, C++, and SQL Server. Dr.Praveen Hulloli contributions have been recognized through numerous accolades. He received the prestigious "Outstanding Librarian Award" across India for the year 2019 from Ulektz world Social Learning Platform for Higher Education. He is also an esteemed editorial board member for the International Journal of Psychological and Brain Sciences in the USA. A prolific researcher, he has published more than 30 research papers in national and international journals, and was honored with the Best Research Paper Awarded for his work titled "Research on Electric Vehicles a Scientometric study". Presently, Dr.Praveen B. Hulloli serves as the Librarian & HOD at KLS Gogte College of Commerce in Belagavi, Karnataka, India.