Research article writing — showcasing your work

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Writing a research article is no mean feat, as it challenges the author to communicate the original ideas and research results to readers of the specific community as well as general readers. Writing a manuscript demands logically presenting an analysis of the new work done along with a quick round-up of previous literature on the topic. The conveyed information should be an answer to specific research questions as well as a means to open new avenues for further research. The language used for drafting the manuscript needs to be clear, concise, and free from excessive use of subject-specific jargon. This may look a bit difficult but can surely be achieved with a little practice and a thorough understanding of the manuscript structure. A manuscript is divided into certain sections; and in-depth guidelines for writing every section may be covered in separate write-ups. This article conveys basic guidelines on how a research paper should be structured and encourages readers to use the same, while preparing their manuscript.

Laying out the article is putting the pieces together

A good article contains a crisp and clear title, a meaningful introduction, technically appropriate materials and methods, actual results, a logically explained discussion and a subtle conclusion with promising prospects. A thorough referencing covering a logical time frame is a cherry on the cake. Following modern trends, readers follow online journals more compared to print journals. This is where strategic use of search-friendly keywords appearing in the title, table of contents and abstract is required. Drafting a manuscript is best done by following the IMRaD (Introduction, Methods, Results, and Discussion) principle. The beauty of the IMRaD structure lies in the writer's ability to swiftly move from one section to the next, with every section supporting the key message.

Title: Identity of the article

The title is the first opportunity to convey the idea of the work done to the reader. The title should not be a long one, though it must convey the precise gist of the article. It is not recommended to use words such as 'novel', 'new', 'validated', 'investigation,' and so on. It is understood that a researcher is trying to publish a paper only after investigating and validating a novel idea. Many journals clearly convey in their 'Guidelines to Authors' about not using these clichéd words. Use of abbreviations must be avoided while writing a title. The must-have items are search-friendly keywords in a title, arranged in the correct order (syntax). Keywords specific to the research topic presented help to index the article (by indexing services like PubMed) and project quickly as a search result (by search engines like Google). However, the use of general keywords like 'virus', 'synthesis', 'antiallergic' may not be of much use. It is essential to keep the keywords 'exactly the same' throughout the article and avoid using similar words as a replacement. A clear, concise, and informative title of the article gives the opportunity to create a strong first impression on the reader.

Abstract: Mastering the art of condensed writing

Most of the times, the abstract is the only portion of the research article that a reader can access and gets to read. This makes it essential to write the abstract in as explanatory manner as possible while of course, keeping it brief. In short, an abstract must cover all the main points of an article and include enough information to create interest in the reader's mind. A perfect abstract contains all the elements of a complete manuscript, though in short. The topics — background of the work, methods used, results, and conclusion — needs to be intricately woven while communicating the essence of the article.

A clearly written and easily comprehensible textual abstract is the best tool to motivate the reader to go through the complete article, even if that requires paying to access the article! Some journals have made it mandatory to provide a graphical abstract; this provides the writer to use and materialize imaginative thinking.

Introduction: Sets up the tone of the article

A meticulously written introduction needs stepwise assimilation of information. The most important goal of this part of the article is to 'convince' the editor or the reviewer. Success in convincing increases the chances of an article getting published. Generally, a total of three cohesive paragraphs are considered to be the best length of an enlightened introduction. The introduction should start with setting the context or explaining the significance of the problem, and the current status of the issue, covered in the first paragraph. The second paragraph should analyse the literature reports and indicate the information gap (or conflicts) in the chosen area before slowly putting forward the statement of the problem. The last paragraph should define the problem by setting a hypothesis for the present work supported by the scope and limitations. In short, the last paragraph defines the objective of the new work reported in the article and introduces its future scope. All the above blocks of information should be well supported by appropriate references, scattered throughout the introduction. The novelty of the work presented is well exhibited by the incorporation of relevant recent references.

Materials and Methods: Tools to show the workmanship

This part of the article may seem a mechanical enclosure, but it has a significance of its own. Here the researcher explains the logical methodologies used to carry out the research work and collect data. However, the use of established methodologies (supported by citations) should not be explained in great detail. A reader working on similar problems expects to find a new way of solving related problems through the work presented. This calls for reproducibility of the experiments or methods mentioned in the article, failing which, the credibility of the research work done invites obvious queries from the reader's side. This aspect of clear communication is very important to engage and attract the readers. The author should not hesitate to report the negative results obtained (if any). Mentioning the equipment used, specific experimental details, and the statistical tests done appropriately and concisely displays the authenticity of the work. The idea of sharing techniques is much appreciated in research-based communications.

Results and Discussions: Logically combination of experimental data and explanations

This part of the article is based on the presentation and interpretation of the results obtained, to prove or disapprove the hypothesis envisaged initially in the article. A lot of results and data are obtained during the research and field work. Only those results that are pertinent to the objective of the article should be included. Too much of data will only confuse the editor, making the article more likely to land in the 'rejected' bunch. However, the detailed data can be included as supplementary information. A self-explanatory figure or a table is worth thousand words of text. It is much appreciated to present the data obtained in short and clear tables and/or figures. However, placement of tables and figures should be appropriately done so that editor or reviewer does not spend much time in flipping pages and correlating with written text.

The logical flow of all the information such as description of the problem, steps taken to resolve the problem, the rationale behind the methods chosen, results obtained, and their interpretation makes a good 'discussion'. While discussing the results obtained, it is very necessary to build the analysis with the help of references available or common trends. The best way to build a discussion is coherent validation of new findings with the data analysis of available references. The discussion needs to be 'analytical' not 'judgmental'. Exaggerative language should be avoided while writing a discussion.

Conclusion: Marks the end with a hint to begin

The conclusion starts with a summary statement and is the concise inference of the whole article. It is not just the repetition of the discussion portion but serves to highlight the work done and explain the further scope the topic. The conclusion should fall in line with the hypothesis made while starting the article. The words chosen to write the conclusion should bring forward the unique or novel idea of the work, highlighting its objectivity and use. The conclusion should highlight the implication of the research finding supported by its positive and negative aspects and its further scope in the particular area of study. However, being overly imperative while writing may cause the reviewer's aversion.

References: Make the strong plinth

A researcher conceives a new idea probably while reading an article written on the topic of interest. The spark continues in the researcher's mind and motivates him/her to go through more articles on the topic and strategize research work. Arrangement of all the articles in an appropriate manner is the key to a well-referenced article written later by the researcher. The whole manuscript should be built on articles that are relatively new and in context. Very old articles are part of history, known well to everyone working in that particular area, so referring those won't be of much interest. Almost every journal provides specific guidelines to follow a particular style of mentioning the references at the end of the article. The author should stick to the style mentioned. So, writing references in the article may not require a lot of expertise but choosing which article to refer, surely needs the skills.

Keeping the above points in mind while writing enhances the chances of your manuscript getting accepted by a reviewer or editor in the first go. A manuscript is good enough if it is able to convey its key idea to a reader in the least focussed frame of mind (perhaps when the reader is tired or done for the day!) This article is written with a hope that its readers understand and apply the best practices of manuscript writing. Good luck!