RESEARCH PAPER WRITING SKILLS

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General Art of Writing vs. Scientific Writing

General Art of Writing

- Emphasis on creativity, expression, and subjective interpretation.
- Often found in literature, poetry, fiction, and personal narratives.
- Focuses on evoking emotions, telling stories, and captivating the reader.
- Language is often poetic, imaginative, and aesthetically pleasing.
- Allows for artistic license and bending of grammar rules.

Scientific Writing

- Primarily objective and factual, intended for academic and research purposes.
- Commonly used in scientific papers, journals, and technical documents.
- Emphasizes clarity, accuracy, and precision of information.
- Follows a specific structure, including introduction, methodology, results, and discussion.
- Utilizes formal language and specialized terminology.

"Style and beauty are not incompatible with scientific writing."
— **Stephen Heard** (Ecologist, University of New Brunswick)

Types of Scientific Writing

Research Articles or Research Papers

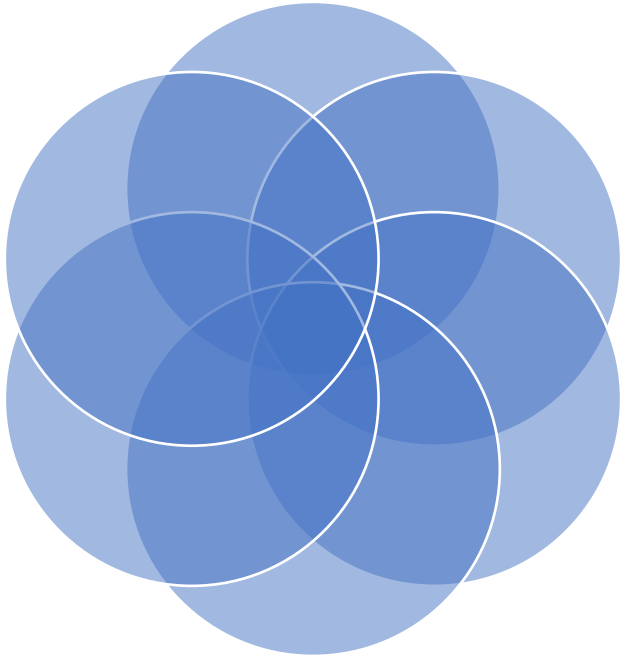
Review Articles

Research Reports

Research Projects for Funding

Patents

Dissertation of Thesis

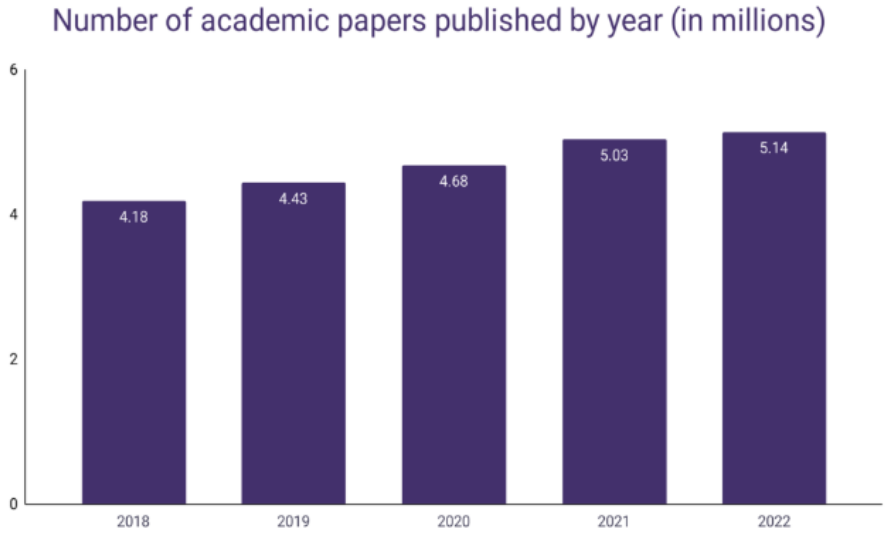


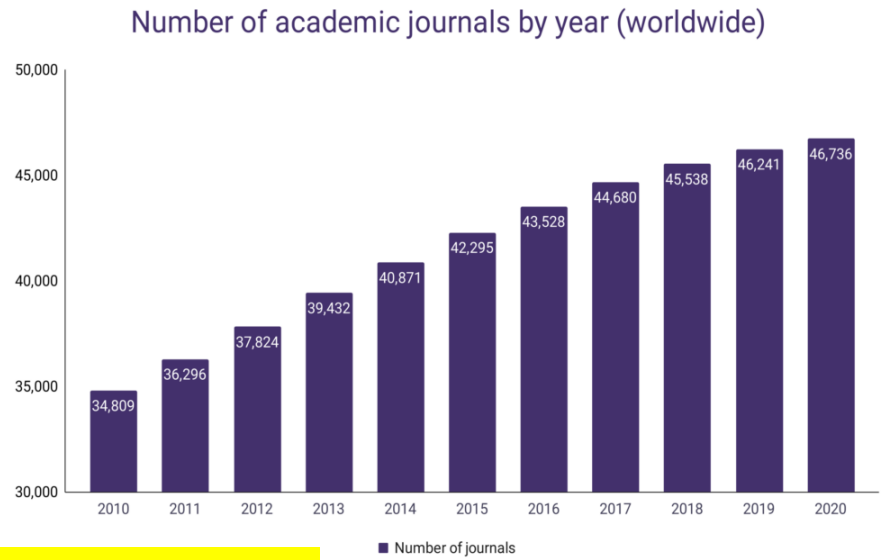
Various Types of Research Works

▪ Empirical Research	▪ This involves conducting experiments or gathering data through observation or surveys to test hypotheses and answer research questions.
▪ Analytical Research	▪ This type focuses on analyzing existing information and data to gain insights, identify patterns, or evaluate theories.
▪ Review Articles	▪ These are comprehensive summaries of existing research literature on a particular topic, providing an overview of current knowledge, trends, and gaps.
▪ Case Studies	▪ Case studies involve in-depth examinations of specific individuals, groups, events, or phenomena to explore or illustrate a particular issue or situation.
▪ Descriptive Research	▪ This type aims to describe characteristics, conditions, or behaviors within a specific population or context, often using surveys or observations.
▪ Experimental research	▪ This involves manipulating variables and carefully controlling conditions to determine cause-and-effect relationships between variables.
▪ Qualitative Research	▪ Qualitative studies focus on understanding phenomena through non-numerical data, such as interviews, observations, or textual analysis.
▪ Quantitative Research	▪ This type involves collecting and analyzing numerical data to quantify relationships, patterns, or trends.
▪ Theoretical Research	▪ This type aims to develop or refine theories and conceptual frameworks by exploring new ideas or proposing alternative explanations.
▪ Applied Research	▪ Applied research seeks to solve real-world problems or address specific issues by using existing knowledge in practical settings.

Research Papers and Journals: Statistics

- Since 2022, **China has been the country with the most academic articles published in a year**, and the first country to publish over 1 million documents during a year.
- These two countries, along with **India and the United Kingdom, accounted for over 52% of all academic papers** over the past year.
- Top 10 producers of academic papers account for over **87% of all published articles** over the past year.
- As of 2020, there are **46,736 academic journals** publishing papers worldwide, 1.07% more compared to 2019.
- **75.04% of all academic journals are published in the English language**. There were 35,070 English-language journals published in 2020.
- Over **5,856 academic journals are published annually in the United Kingdom**, as of 2020.
- The **UK is the world's largest producer of academic journals**, accounting for over 12.53% of the global production.
- Google Scholar has largest global bibliometric database.





Courtesy: https://wordsrated.com/number-of-academic-papers-published-per-year (Accessed on 27 July, 2023)

Research Metrics: Impact Factor

- Impact factor (IF) is a measure of the number of times an average paper in a journal is cited, during a year.
- The impact factor was devised by Eugene Garfield, the founder of the Institute for Scientific Information (ISI) in Philadelphia.
- Impact factors began to be calculated yearly starting from 1975 for journals listed in the Journal Citation Reports (JCR).

Total number of times its articles were cited during the two previous years

÷

Total number of citable articles in the journal during those two years

=

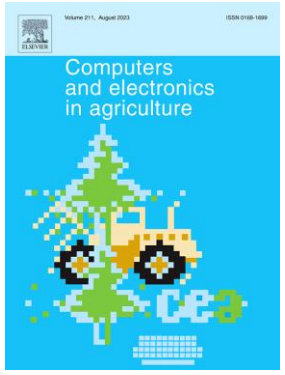
Impact Factor of the journal for that particular year

CA-A Cancer Journal for Clinicians: **254.7**

Nature: **64.8**

Science: **56.9**

IEEE Transactions on Pattern Analysis and Machine Intelligence: **23.6**

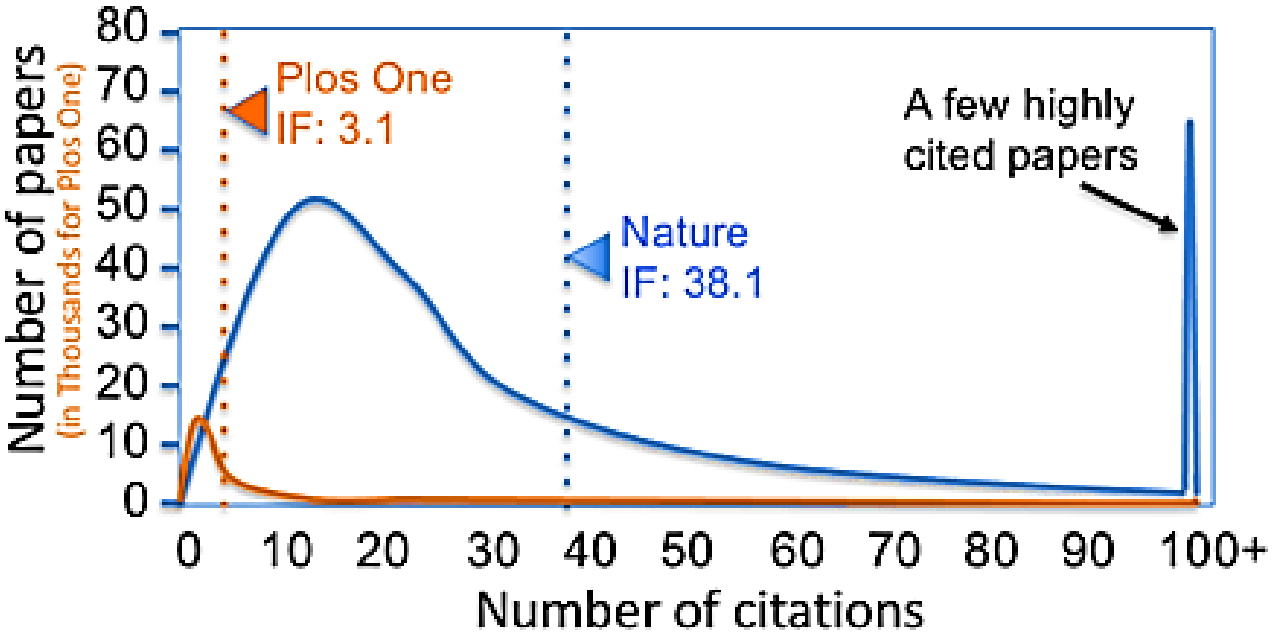


Computers and Electronics in Agriculture: **8.3**

Important Research Metrics: Impact Factor

Other aspect of Impact Factor:

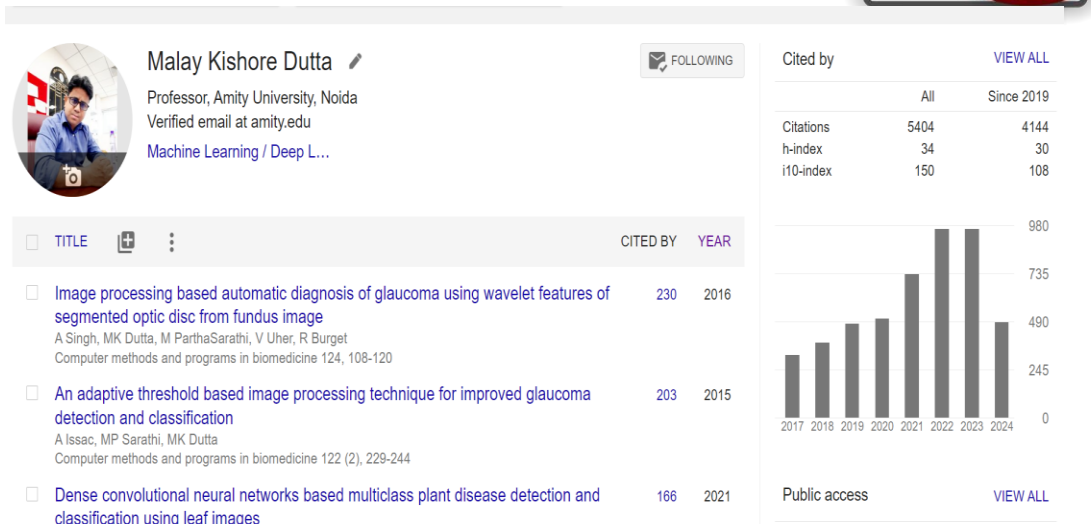
- Journal impact factors are influenced heavily by a small number of highly cited papers. Most papers published in 2013–14 received many fewer citations than indicated by the impact factor.
- Two journals (Nature [blue] and PLOS ONE [orange]) are shown to represent a highly cited and less cited journal, respectively. The high citation impact of Nature is derived from relatively few highly cited papers.



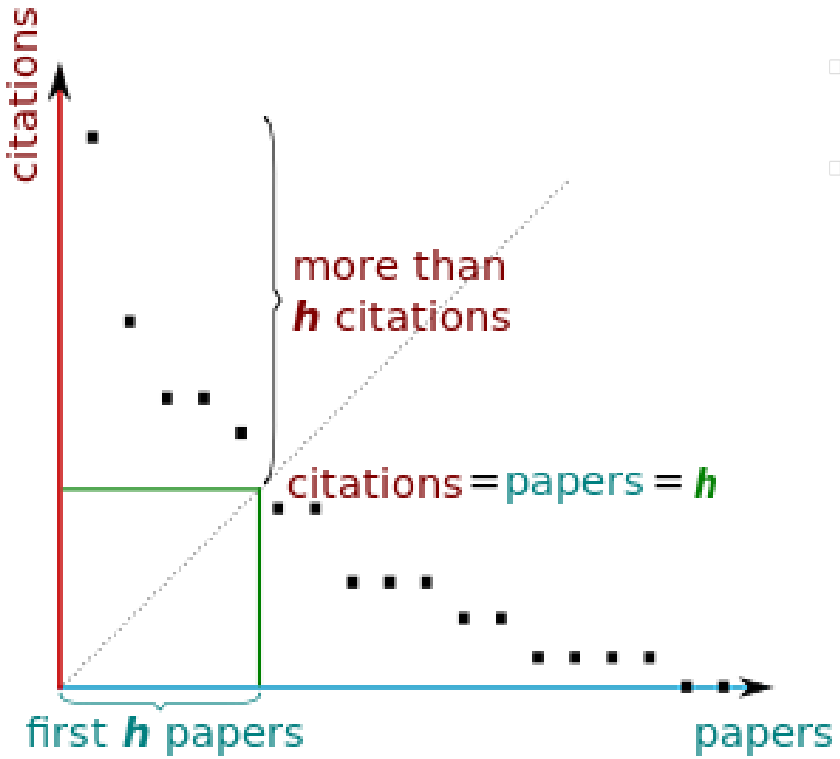
Courtesy: Wikipedia (https://en.wikipedia.org/wiki/Impact_factor)

Important Research Metrics: h-index

- The h-index is defined as the maximum value of **h** such that the given author/journal has published at least h papers that have each been cited at least **h** times.
- The index is designed to improve upon simpler measures such as the total number of citations or publications.



h-index from a plot of numbers of citations for an author's numbered papers (arranged in decreasing order)



Courtesy: Wikipedia (https://en.wikipedia.org/wiki/H-index)

f(A)=10, *f*(B)=8, *f*(C)=5, *f*(D)=4, *f*(E)=3

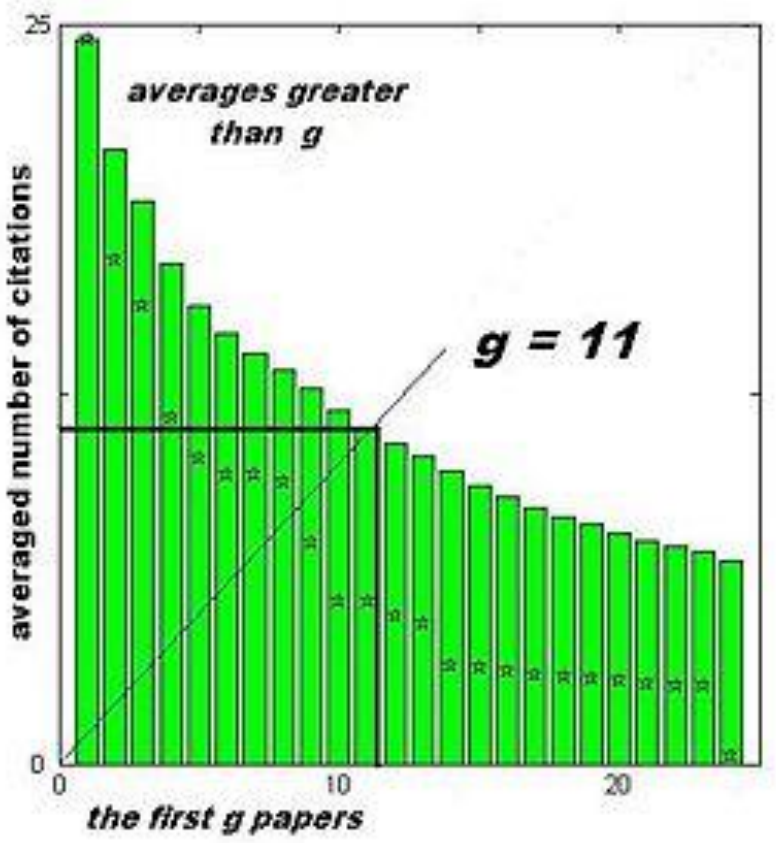
***h*-index=4**

f(A)=25, *f*(B)=8, *f*(C)=5, *f*(D)=3, *f*(E)=3

***h*-index=3**

Important Research Metrics: g-index

- The g-index is an author-level metric suggested in 2006 by Leo Egghe.
- The index is calculated based on the distribution of citations received by a given researcher's publications, such that given a set of articles ranked in decreasing order of the number of citations that they received, the g-index is the unique largest number such that the top g articles received together at least g2 citations.
- Hence, a g-index of 10 indicates that the top 10 publications of an author have been cited at least 100 times (10^2), a g-index of 20 indicates that the top 20 publications of an author have been cited 400 times (20^2).



An example of a *g*-index

An example of two authors who both published 10 papers, both authors have a *h*-index of 6. However, Author 1 has a g-index of 10 while Author 2 has a *g*-index of 7.

	Author 1	Author 2
Paper 1	30	10
Paper 2	17	9
Paper 3	15	9
Paper 4	13	9
Paper 5	8	8
Paper 6	6	6
Paper 7	5	5
Paper 8	4	4
Paper 9	3	2
Paper 10	1	1
Total cites	102	63
Average cites	10,2	6,3

Courtesy: Wikipedia (https://en.wikipedia.org/wiki/G-index)

Why to Learn Research Paper Writing Skills?

- Most of the works remain unincited or never cited, specially in the domain of the humanities.
- Most of the readers glance through the content list only.
- Very few open the journal to review through the titles
- Most readers read only the title and the abstract of a research paper and very few will go on to read the full paper.
- Generally,, the Publication Time of the most of journals is long.
- If the work is novel but the paper is not understandable, it may get rejected from different venues or take multiple revisions to get acceptance.

Courtesy: Milind S. Tullu (2019), “Writing the title and abstract for a research paper”

Importance of Publishing in High Impact Factor Journals

Visibility and Reach

Publishing in high impact factor journals increases the visibility of your work, ensuring it reaches a wider audience within the scientific community.

Research Validation

High impact factor journals are typically associated with rigorous peer-review processes, indicating that research has been critically evaluated and validated by experts.

Reputation and Credibility

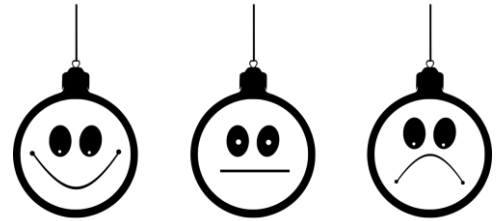
Publishing in renowned journals enhances your professional reputation and establishes credibility, signaling that your research is of high quality and significance.

Career Advancement

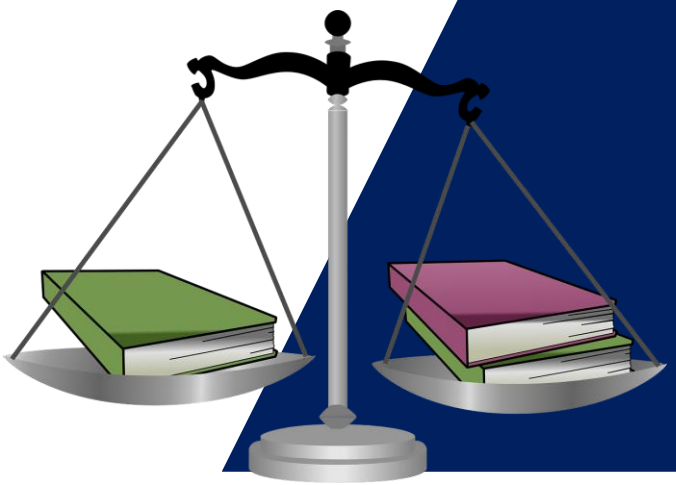
High impact factor publications carry weight in academic promotion and tenure decisions, leading to better career prospects and opportunities for collaborations.

Scientific Impact

Publishing in influential journals allows your research to contribute to the advancement of the field, influencing future studies and shaping scientific knowledge.

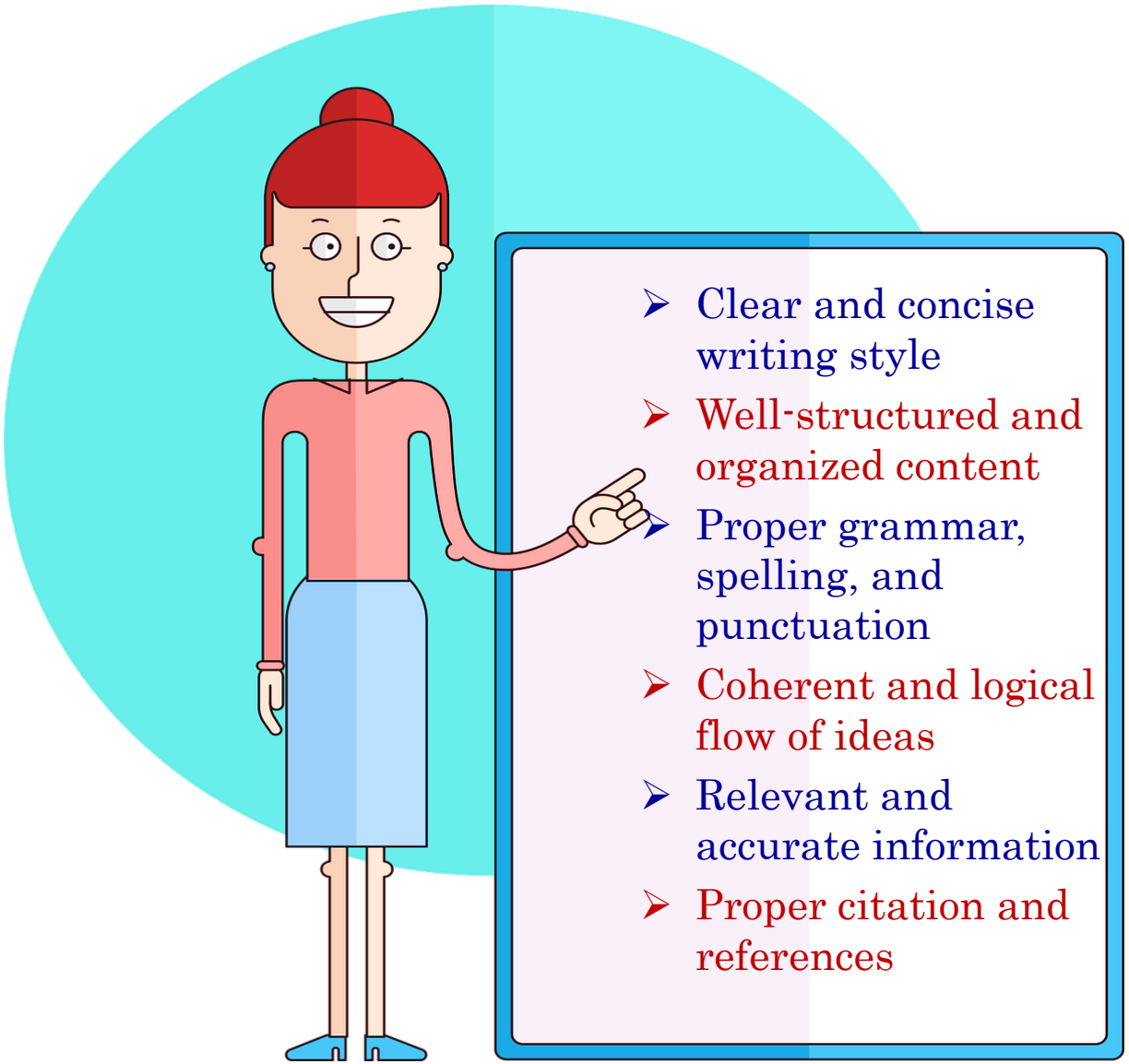


Criteria to Judge Quality And Validity of a Research



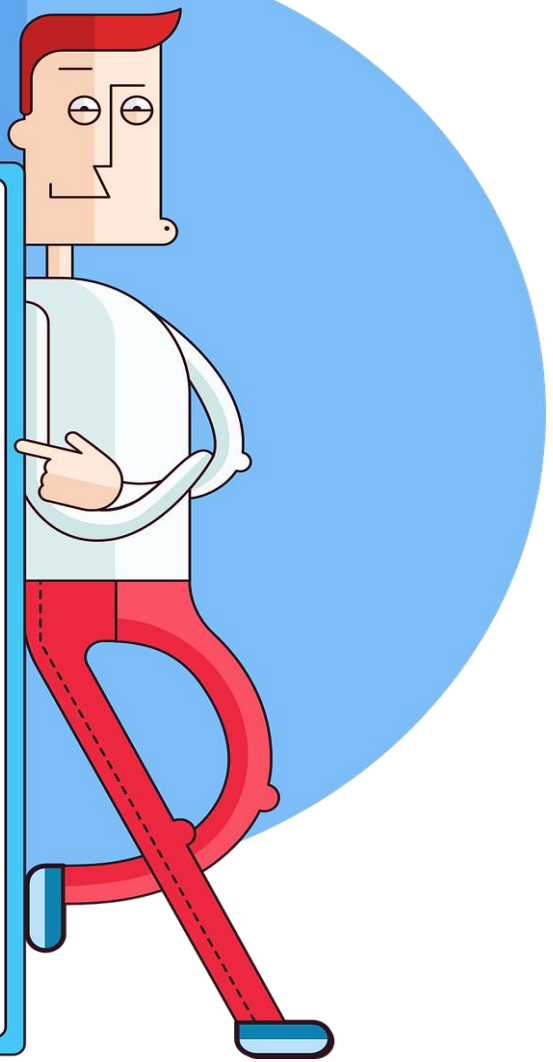
Originality	Assess how innovative and novel the research is. Does it bring new insights or ideas to the field?
Methodology	Consider whether it is appropriate for the research question, whether data collection methods are reliable, and whether the analysis is valid.
Validity	Examine the internal and external validity of the study. Ensure that the conclusions drawn are supported by the evidence presented.
Contribution to the Field	Assess the impact of the research on the existing body of knowledge. Does the paper build upon previous research or challenge existing theories?
Clarity and Coherence	Evaluate the overall quality of writing, organization, and presentation. Look for clear and concise language, logical flow, proper referencing, and adherence to structural guidelines for research papers.

Attributes of the Good Manuscript

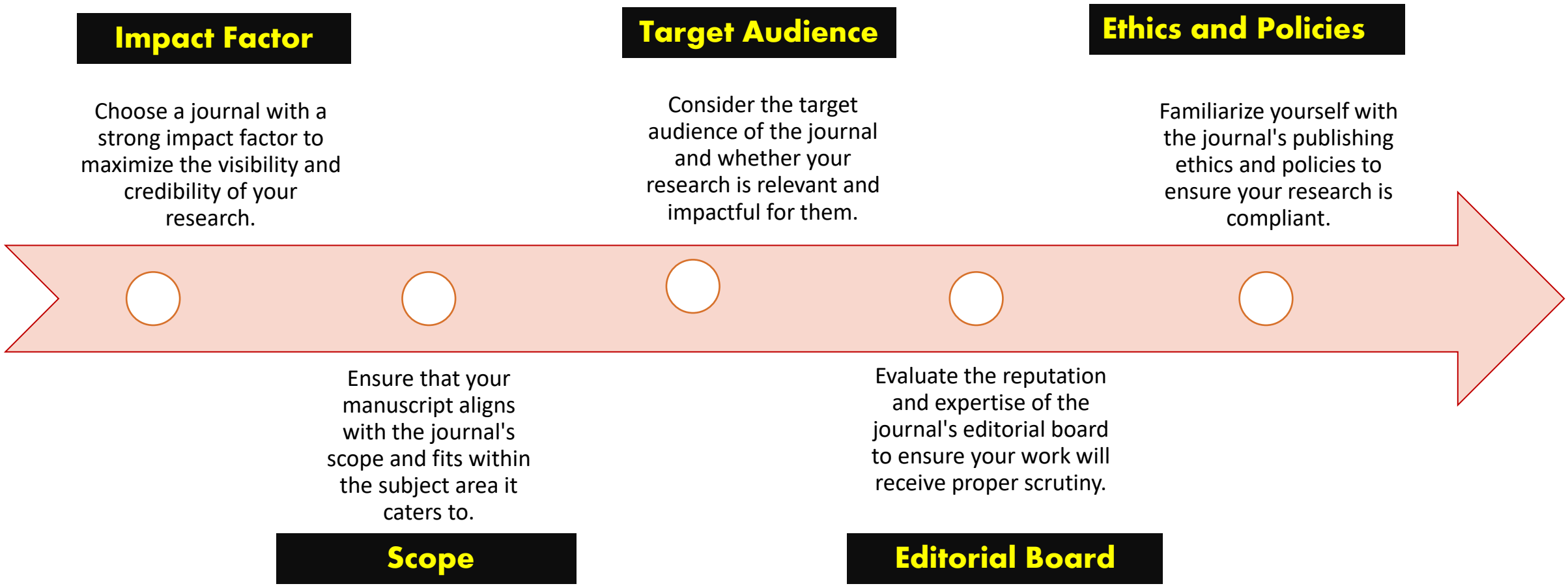


- Clear and concise writing style
- Well-structured and organized content
- Proper grammar, spelling, and punctuation
- Coherent and logical flow of ideas
- Relevant and accurate information
- Proper citation and references

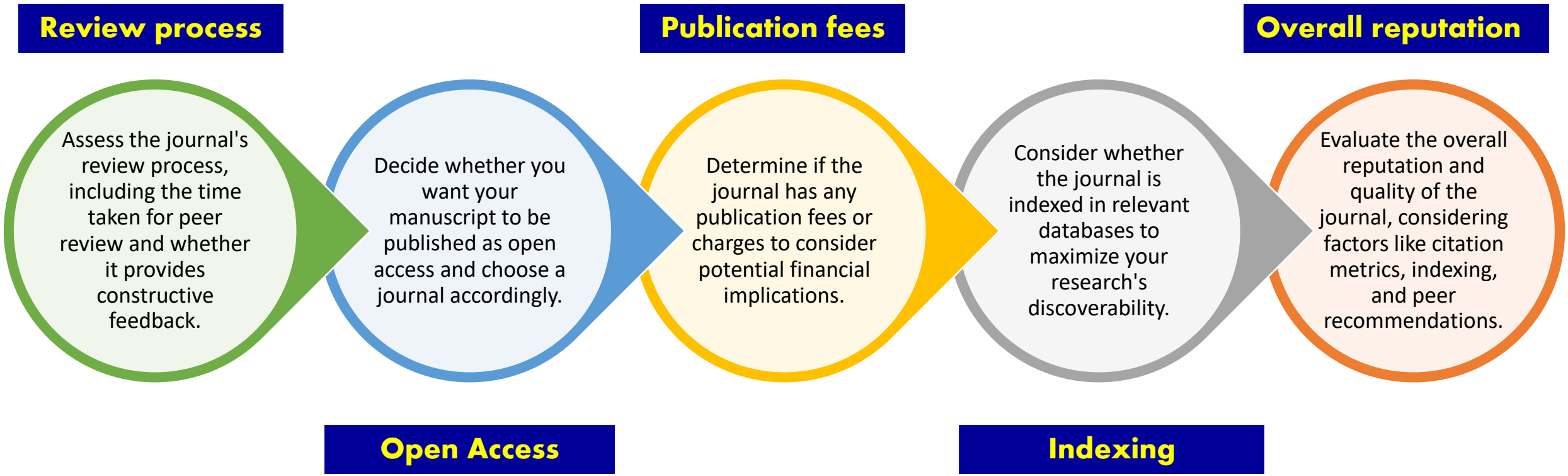
- Engaging and compelling introduction and conclusion
- Well-supported arguments or findings
- Appropriate length for the target audience
- Adherence to submission guidelines or formatting requirements



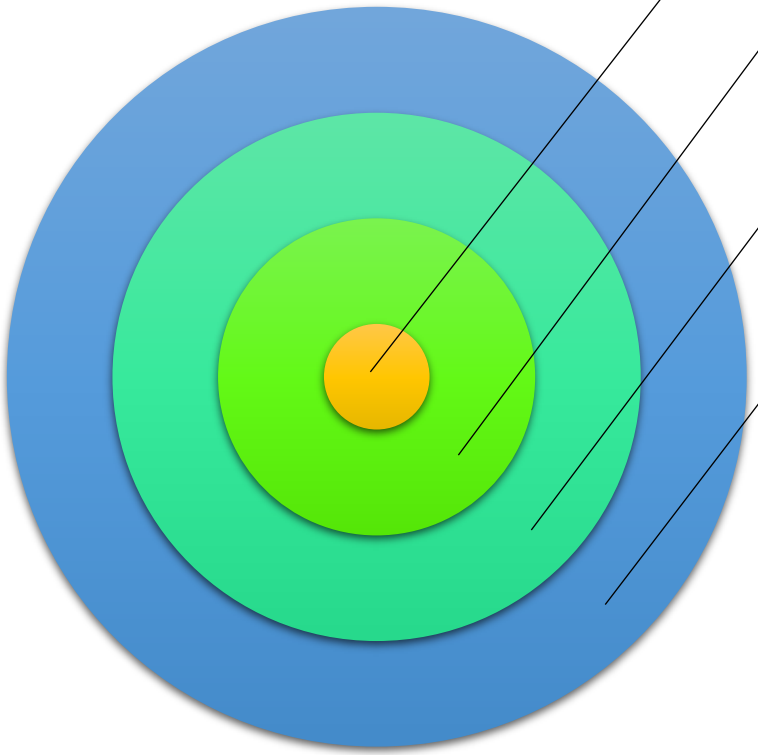
Considerations for Manuscript Submission to a Journal



Considerations for Manuscript Submission to a Journal



Four Major Questions of Manuscript Writing



What is the research question or objective of the study? → Introduction

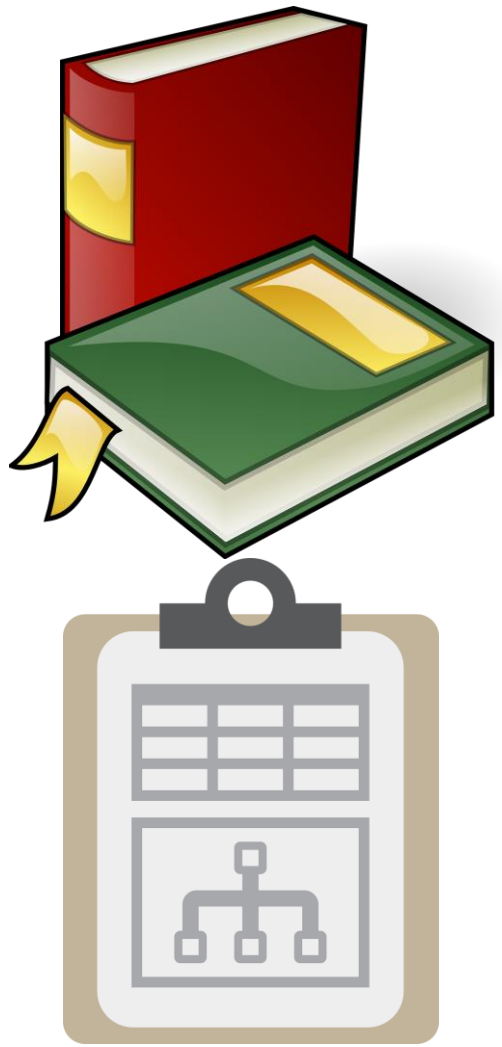
How was the study conducted, including the methods and materials used? → Methodology

What were the main findings or results obtained from the study? → Experimental Results

What are the implications or conclusions drawn from the findings? → Conclusion

Various parts and Structure of the Research Paper

1. Title page or cover page
2. Abstract
3. Introduction
4. Literature review
5. Materials and Methodology
6. Experimental Results
7. Discussion
8. Conclusion
9. Reference page or bibliography



Title of the Manuscript/Paper

- The title **summarizes the main idea or ideas of your study.**
- A good title contains the fewest possible words needed to adequately describe the content and/or purpose of your research paper.
- Importance of Choosing a Good Title The title is the part of a paper that is read the most, and it is usually read first

Examples of Different Titles:

Good Title

"The Impact of Social Media on Adolescent Mental Health: A Quantitative Analysis"

Bad Title

"Social Media and Teens"

Impact of Article Titles on Citations

Attracting Attention

An engaging and concise title can capture the interest of potential readers, increasing the likelihood of them clicking on the article and potentially citing it later.

Discoverability

If the title effectively represents the content and keywords of the article, it can enhance the discoverability of the research, making it more likely to be found and cited by others.

Credibility & Relevance

A well-crafted title that accurately reflects the content can signal credibility and relevance to readers, increasing the chances of being cited in related studies or papers.

Impression on Peers

The title can create an initial impression of the research. A captivating or intriguing title may pique the interest of fellow researchers, potentially leading to more citations.

Influence on indexing & databases

Title keywords play a role in indexing articles in databases. Using relevant and specific terms in the title can improve the chances of being indexed accurately and thus being more likely to show up in search results.

How to write Good Title of the Manuscript/Paper?

1

Clear and Concise

Ensure that the title accurately reflects the content of the manuscript in a succinct manner.

Examples:

"The Impact of Climate Change on Biodiversity in Tropical Rainforests“

"Examining the Effects of Global Warming on Various Forms of Life in the Lush and Dense Tropical Rainforests of the World"

2

Specific and Informative

Make the title informative by including key variables, participants, or location mentioned in the manuscript.

Examples:

"A Comparative Study of Protein Synthesis in Human and Mouse Cells“

"Investigating Cellular Processes and Gene Expression Patterns in Two Different Mammalian Species"

3

Engaging and Captivating

Craft a title that grabs the reader's attention and sparks interest in the study.

Examples:

"Unraveling the Mystery: Exploring the Hidden Potential of Dark Matter“

"Dark Matter: An Investigation into Its Nature and Properties"

How to write Good Title of the Manuscript/Paper?

4

Avoid Jargon and Abbreviations

Use simple language and avoid scientific jargon or excessive use of abbreviations to ensure broader understanding.

Examples:

"Analyzing the Impact of Music on Stress Levels in Teenagers“

"The Correlation between Auditory Stimulation and Cortisol Levels in Adolescent Population"

5

Accurate and Factual

Ensure that the title provides an accurate representation of the study's findings or purpose.

Examples:

"Evaluating the Efficacy of a Novel Drug in Treating Alzheimer's Disease“

"Promising Breakthrough in Alzheimer's Treatment: A Miracle Drug to Cure the Condition"

Abstract of the Manuscript/Paper

1

Captures attention

It is often the first section readers encounter, and it should engage them by summarizing the key aspects of the research.

Provides an overview

The abstract delivers a concise summary of the entire paper, outlining the purpose, methods, results, and conclusions.

2

3

Saves time

As a standalone section, the abstract allows readers to quickly assess whether the paper is relevant to their interests, helping them decide if they should read the full text.

Increases discoverability

Search engines utilize abstracts to index and retrieve relevant articles, making a well-written abstract crucial for visibility and citation potential.

4

5

Communicates essential information

For busy researchers or professionals seeking specific information, a well-written abstract serves as a quick reference, highlighting the key findings and main contributions of the paper.

How to write Good Abstract of the Manuscript/Paper?

1

Clear and Concise Language

Examples:

The abstract provides a succinct summary of the study's key findings, research question, and methodology.

The abstract contains convoluted language and unnecessary jargon, making it difficult to grasp the main points.

2

Accurate representation of the study

Examples:

The abstract accurately reflects the main objectives, methods, and results of the research.

The abstract misrepresents the study's findings and fails to provide an accurate overview of the research.

3

Inclusion of relevant information

Examples:

The abstract includes essential details such as the study's scope, sample size, and statistical significance.

The abstract lacks important details, such as the sample size or statistical analysis used in the study, making it incomplete.

How to write Good Abstract of the Manuscript/Paper?

4 **Proper Formatting and Length**

Examples:

The abstract adheres to the required word limit and follows the specified formatting guidelines.

The abstract exceeds the recommended word count or fails to follow the prescribed formatting style.

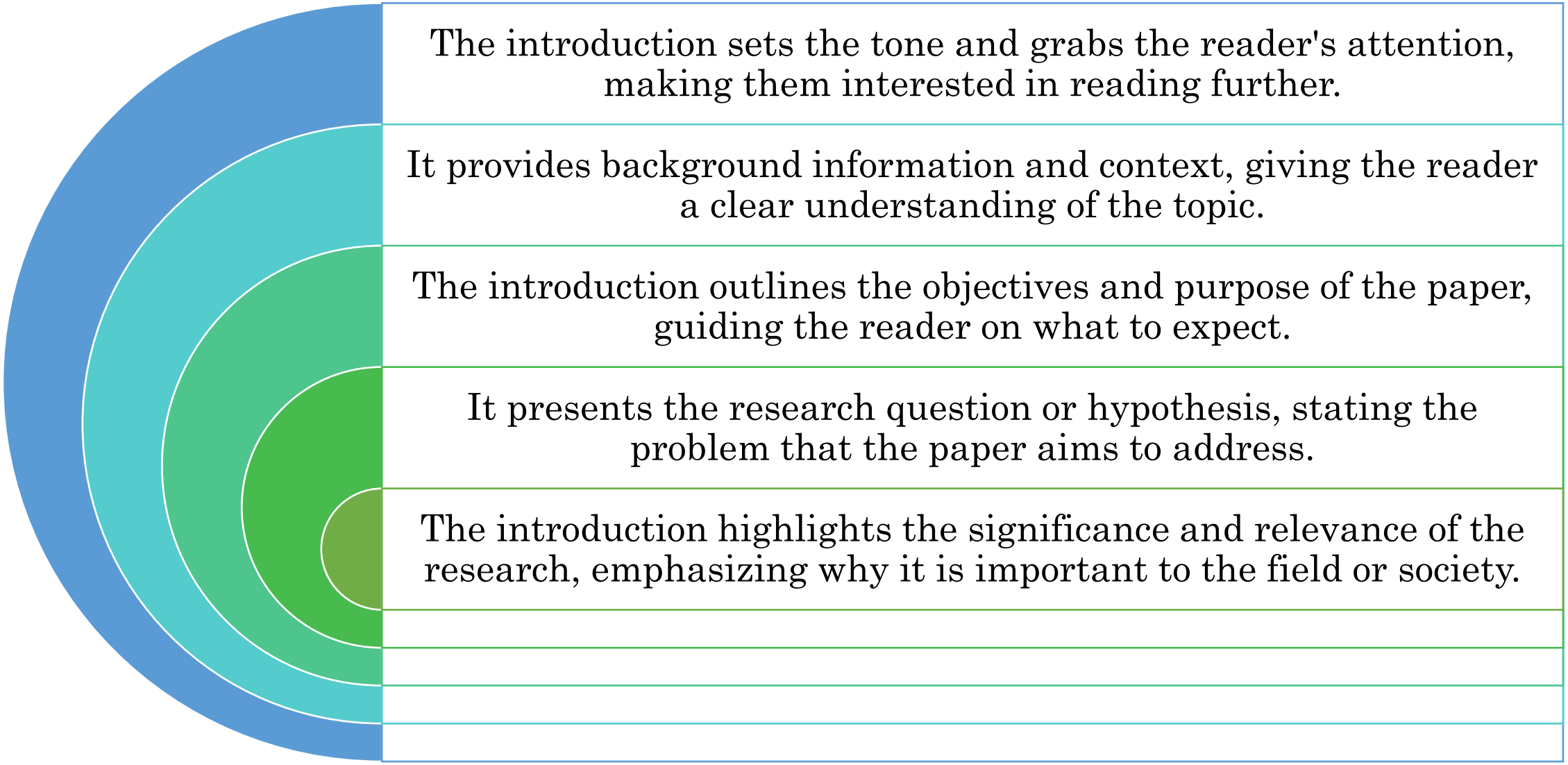
5 **Engaging and informative content**

Examples:

The abstract effectively captures the reader's attention while providing a concise overview of the study's implications and potential impact.

The abstract is dull and fails to convey the significance or potential implications of the research.

Introduction of the Manuscript/Paper



How to write Good Introduction of the Manuscript/Paper?

1 Clear and Concise Thesis Statement

A good introduction should clearly state the main topic and purpose of the manuscript without unnecessary detail or ambiguity.

Examples:

"This manuscript aims to investigate the impact of climate change on coastal communities in Southeast Asia."

"Climate change is a global issue affecting various aspects of the environment and human lives, and this research seeks to examine its effects on coastal regions in Southeast Asia and their communities."

2 Background information

Provide relevant context or background information to help readers understand the significance and scope of the research.

Examples:

"Coastal regions in Southeast Asia are home to millions of people and are highly vulnerable to sea-level rise and extreme weather events due to climate change."

"The world is facing numerous ecological challenges and societal problems caused by climate change, which has been a topic of concern for decades."

How to write Good Introduction of the Manuscript/Paper?

3 Research Gap and Motivation

Clearly explain the research gap or knowledge deficiency that the manuscript aims to address and why it is important to fill this gap.

Examples:

"Despite the abundance of studies on climate change impacts, there is limited research specifically addressing its effects on social and economic dynamics within Southeast Asian coastal communities.“

"This research aims to add to the existing body of knowledge on climate change impacts in Southeast Asia, which is already extensive and constantly growing."

4 Methodology and Approach

Briefly outline the methodology or approach used in the study to give readers an idea of the research design and methods employed.

Examples:

"In this study, a combination of qualitative interviews and quantitative surveys will be conducted to gather data on coastal community adaptation strategies and local perceptions of climate change.“

"We will use a mix of data collection techniques to investigate various aspects of climate change impacts on Southeast Asian coastal communities."

How to write Good Introduction of the Manuscript/Paper?

5

Outline of the Manuscript

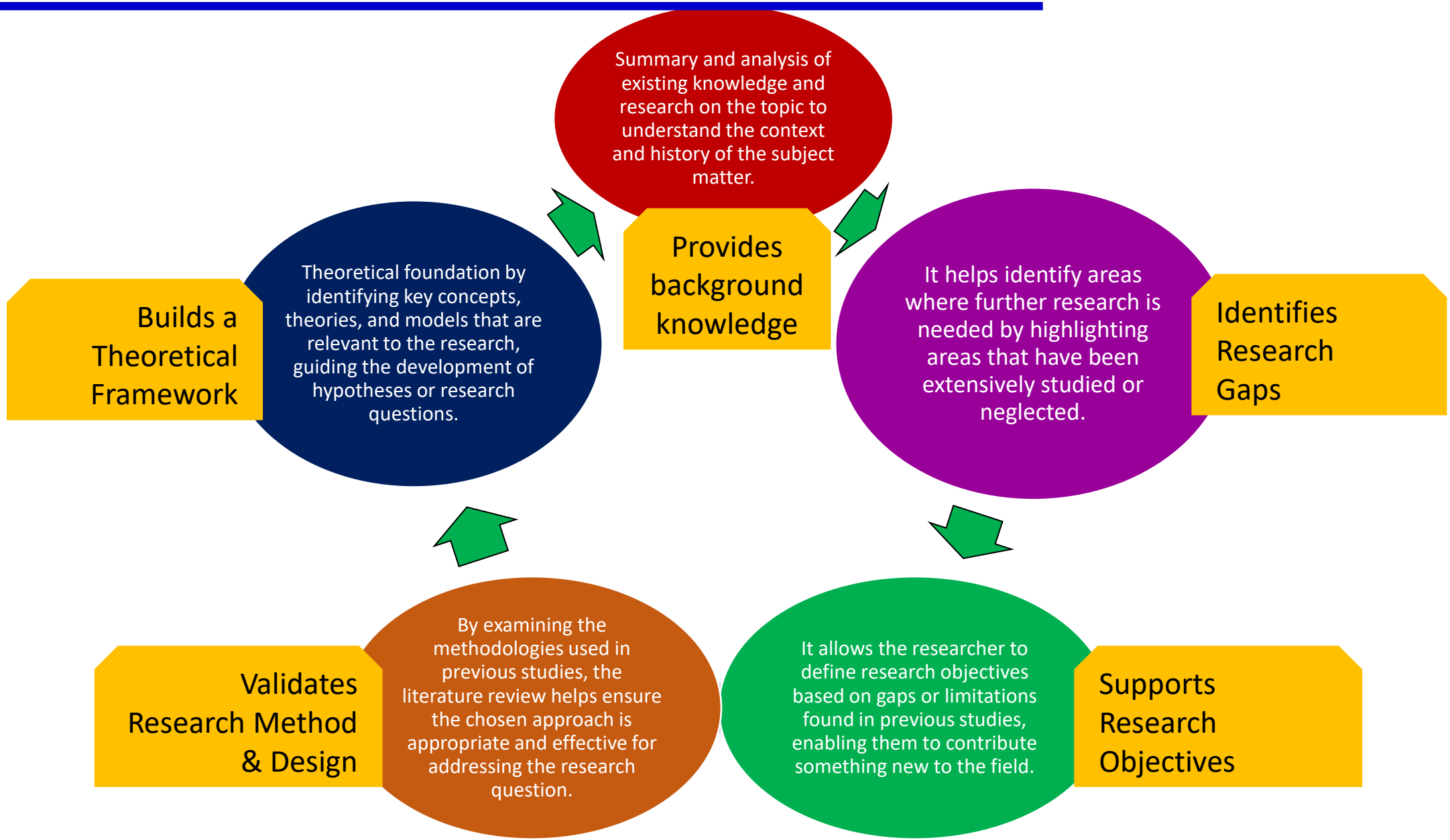
Provide a brief overview of the structure and content of the manuscript to guide readers through the main sections or chapters.

Examples:

"The manuscript begins with an introduction followed by a review of existing literature, then presents the research methodology and findings, and concludes with a discussion on the implications and recommendations for policy and future research.“

"The manuscript consists of several sections that explore different aspects of climate change impacts on Southeast Asian coastal communities."

Literature Review Section of the Manuscript/Paper



How to write Good Literature Review Section?

1 Clearly Define the Research Question and Objectives

A well-defined research question and objectives provide a focused direction for the literature review and enhance its coherence.

Examples:

"The literature review outlines the research question of the study: 'What are the effects of exercise on mental health?'"

"The manuscript lacks a clear research question, resulting in a literature review that appears unfocused and scattered."

2 Conduct a Comprehensive Search Across Relevant Databases

A thorough search ensures that relevant studies are included and helps in avoiding potential bias.

Examples:

"The literature review includes studies from multiple databases, such as PubMed, PsycINFO, and Scopus, capturing a wide range of relevant research."

"The manuscript relies solely on a single database search, limiting the scope of the literature review and potentially missing out on important studies."

How to write Good Literature Review Section?

3

Critically Evaluate and Synthesize Relevant Studies

A critical evaluation allows for the identification of key findings and helps in presenting a balanced understanding of existing literature.

Examples:

"The literature review critically evaluates the strengths and limitations of each study, comparing their methodologies and findings to synthesize a comprehensive understanding."

"The manuscript lacks critical evaluation, providing a summary of studies without analyzing their quality, relevance, or conflicting results."

4

Structure the Literature Review Logically

A well-organized structure aids in presenting key themes, trends, and debates in a clear and coherent manner.

Examples:

"The literature review follows a logical structure, grouping studies based on themes and providing subheadings for easy navigation and understanding."

"The manuscript lacks a clear structure, presenting a series of disconnected paragraphs that make it challenging to follow the flow of ideas."

How to write Good Literature Review Section?

5 **Provide Proper Citations and References**

Accurate citations and references acknowledge the contributions of previous researchers and help in avoiding plagiarism.

Examples:

"The literature review properly cites all the included studies using an appropriate referencing style (e.g., APA, MLA) and accurately cross-references them within the manuscript.“

"The manuscript lacks proper referencing and citation, making it difficult to verify the sources of information or distinguish between the author's views and those found in previous studies."

Material and Methods Section of the Manuscript/Paper

Reproducibility

- It provides a detailed description of the experimental design, materials used, and methods applied in the study, enabling other researchers to replicate the study and verify the results

Transparency

- It ensures transparency by outlining the step-by-step procedures employed during the research, leaving little room for ambiguity or misunderstanding.

Validity and reliability

- This section allows for assessing the validity and reliability of the study. It enables readers to evaluate if the chosen materials, measurements, and techniques were appropriate and if potential bias was controlled.

Ethical considerations

- This section often includes information on ethical clearances, consent protocols, and any potential risks or harm to participants, ensuring that the study adheres to ethical guidelines.

Future Research

- The material and methods section acts as a reference for future researchers interested in conducting related studies. It aids in building upon existing knowledge and may provide insights for further investigation.

How to write Good Materials and Methodology Section?

1

Clearly Articulate the Materials Used

Provide specific details on the materials, including their source and specifications, to ensure accurate replication of experiments.

Examples:

"The materials used in the study included high-purity silicon wafers (99.999% purity) sourced from XYZ Corporation."

"We used silicon wafers for our experiment."

2

Describe the methodology in a step-by-step manner

Present a systematic and organized approach to the methodology, allowing readers to understand and follow the experimental process accurately.

Examples:

"The methodology consisted of five distinct steps: sample preparation, data collection, analysis, validation, and interpretation."

"We conducted the experiment using standard techniques."

How to write Good Materials and Methodology Section?

3

Include information about instrumentation and equipment

Mention the specific instruments and equipment utilized during the research, along with their settings or configurations.

Examples:

"A Shimadzu UV-Vis spectrophotometer (model XYZ) was used to measure the absorbance of samples at a wavelength of 450 nm.“

"A spectrophotometer was used to measure absorbance."

4

Address any Potential Confounding factors or Limitations

Acknowledge any potential sources of error or limitations in the methodology that may have impacted the results.

Examples:

"One limitation of our study was the inability to control ambient temperature and humidity, which could have influenced the reaction rates.“

"Our study has no limitations."

How to write Good Materials and Methodology Section?

5

Provide Rationale for the Chosen Methodology

Explain why a particular methodology or experimental approach was selected, highlighting its relevance and suitability for the research question.

Examples:

"The chosen methodology allowed non-invasive imaging, which was critical for studying cellular behavior in real-time without disrupting normal physiological conditions.“

"We used this methodology because it seemed suitable."

Experimental Results Section of the Manuscript/Paper

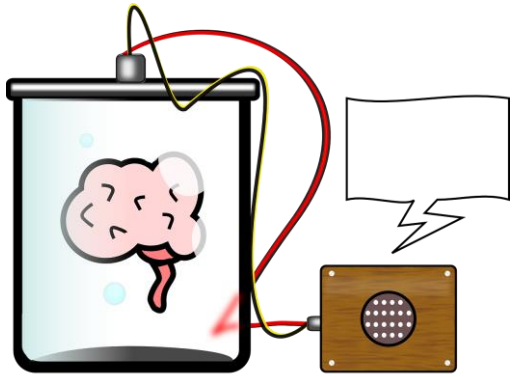
The experimental results section provides **objective evidence and validation for the claims and hypotheses** presented in the paper.

It allows other researchers to **evaluate and replicate the experiments**, ensuring the reliability and credibility of the findings.

The section highlights **the methodology and experimental setup,** providing important details for reproducibility and allowing others to build upon the research.

It showcases the **statistical analysis and results obtained**, demonstrating the significance and impact of the research.

The experimental results section helps readers assess the **strengths and limitations of the study** and offers insights for potential improvements or further investigations.



How to write Good Experimental Results Section?

1

Clearly State Research Objectives and Hypotheses

Clearly articulate the purpose and goals of the study in the experimental results section to provide context for the presented findings.

Examples:

"The primary objective of this study was to determine the effect of XYZ treatment on the growth rate of plants."

"We conducted an experiment on plant growth rate."

2

Describe the experimental design and methodology

Provide a detailed description of the experimental design, methodology, and relevant variables controlled or measured to establish reproducibility and research validity.

Examples:

"A randomized controlled trial was conducted with two groups: treatment (n=50) and control (n=50). The treatment group received XYZ intervention daily, while the control group received a placebo."

"We divided participants into two groups and gave some the treatment and others received nothing."

How to write Good Experimental Results Section?

3 Present Data in a Clear and Organized Manner

Effectively present the collected data using appropriate visual representations, such as charts, tables, or graphs, to enhance data comprehension.

Examples:

"Figure 1 displays the mean growth rate of plants in the treatment and control groups over a 4-week period, indicating a statistically significant difference between the groups."

"The growth rates of plants were different in the treatment and control groups."

4 Report Statistical Analyses and Results

Provide a clear and concise summary of statistical analyses performed, including any relevant statistical tests, p-values, effect sizes, or confidence intervals indicating the significance and magnitude of observed differences.

Examples:

"A two-sample t-test revealed a significant difference in growth rate between the treatment and control groups ($t = 2.34$, $p < 0.05$). The effect size was calculated as Cohen's $d = 0.56$."

"There was a significant difference in growth rate between the two groups."

How to write Good Experimental Results Section?

5

Interpret and Discuss Results in Relation to Research Objectives

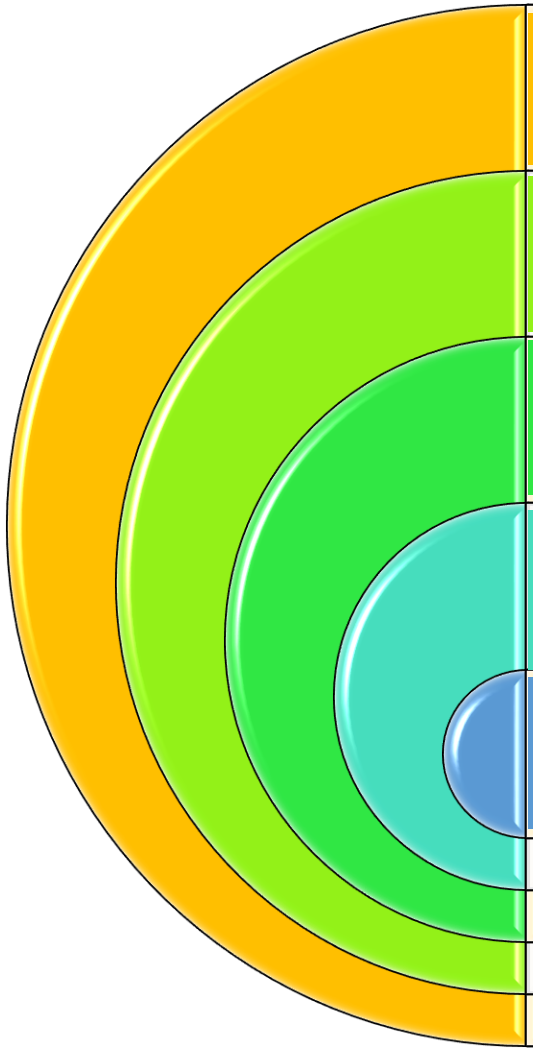
Discuss and interpret the obtained results in the context of the research objectives and relevant existing literature, addressing any inconsistency or limitations, and suggest possible explanations or further research directions.

Examples:

"Our findings suggest that XYZ treatment promotes plant growth by enhancing nutrient absorption, which aligns with previous studies reporting the role of XYZ in nutrient metabolism. However, limitations, such as the short duration of the study, warrant further investigation.“

"The results show that XYZ treatment increases plant growth."

Discussion Section of the Manuscript/Paper



Interpretation and Synthesis	Provides a detailed analysis and interpretation of the study's results, tying them back to the research objectives and supporting evidence.
Addressing Research Questions	Summarizes whether or not the research questions have been adequately addressed based on the findings, showcasing the significance of the study.
Comparison with Existing Literature	Compares and contrasts the obtained results with previous studies, highlighting similarities, differences, and contributing to the existing body of knowledge.
Limitations and Implications	Acknowledges the limitations of the study, discussing potential biases or constraints, and suggests areas for future research.
Overall Conclusions	Summarizes the main findings and their implications, offering a final assessment of the research's importance and potential impact.

How to write Good Discussion Section ?

1

Relate the Findings to Existing Literature

Discuss how the results align with or differ from previous studies, providing context and contributing to the current knowledge gap.

Examples:

Our findings support previous research by Smith et al. (2018), indicating a consistent pattern in the relationship between X and Y.

These findings are similar to other studies.

2

Clearly State the Purpose of the Discussion

Clearly articulate the main objective of the discussion section, such as summarizing and interpreting the key findings of the study.

Examples:

The purpose of the discussion is to analyze the results and draw meaningful conclusions based on the research objectives.

In this section, we will talk about what we found.

How to write Good Discussion Section ?

3 **Address Limitations and Weaknesses**

Acknowledge any potential limitations or weaknesses in the research methodology or data, and explain how they may have influenced the results

Examples:

The sample size of our study was relatively small, which may limit the generalizability of the findings.

This study may have some problems.

4 **Propose Future Directions**

Suggest possible areas for further research or improvements on the current study to address any limitations and expand upon the existing knowledge base.

Examples:

Future studies could explore the long-term effects of X on Y among different demographic groups, expanding our understanding of the phenomenon.

More research is needed.

How to write Good Discussion Section ?

5

Provide a Clear Conclusion

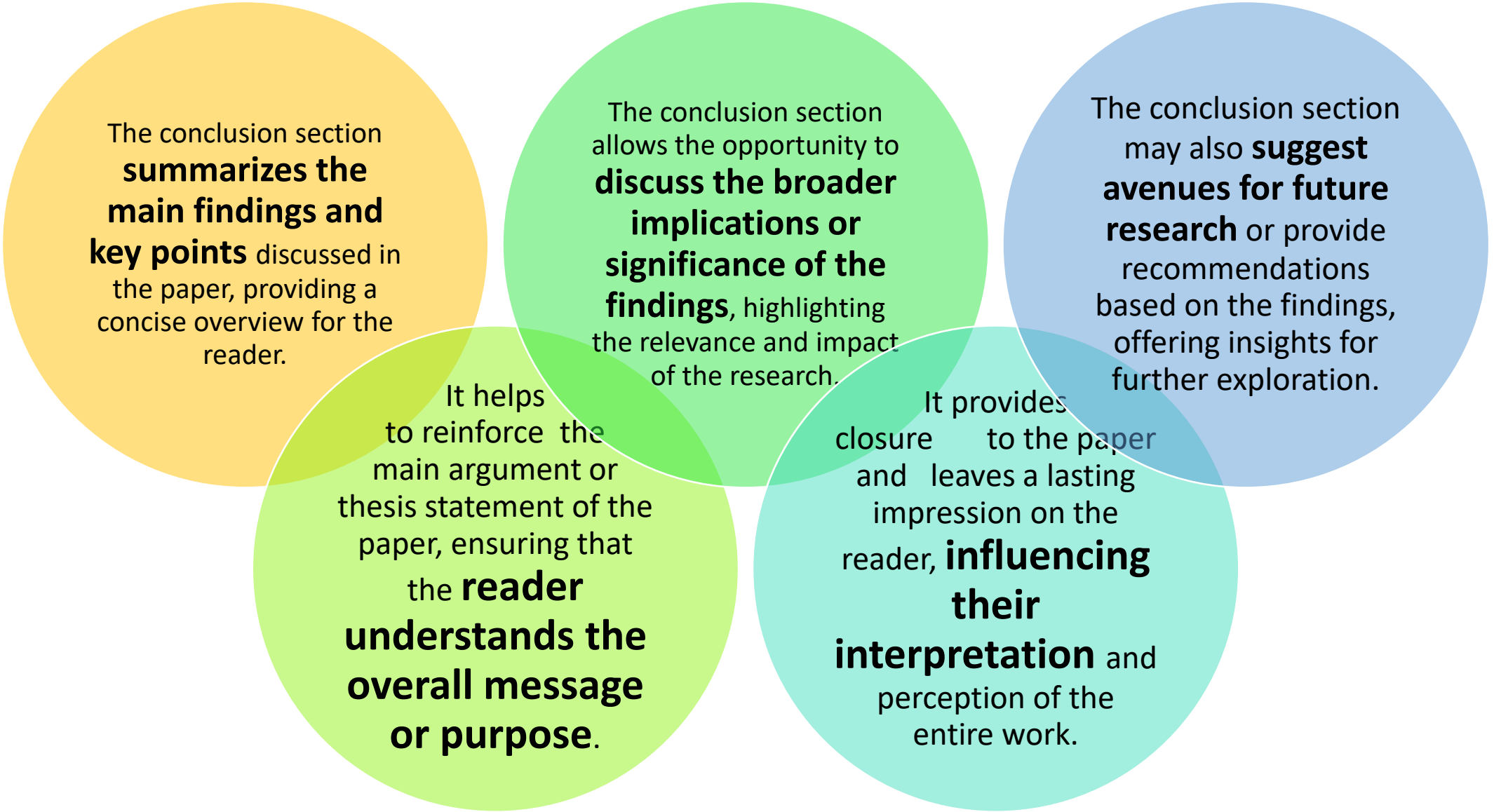
Summarize the key findings discussed and restate their significance, ensuring that the conclusion is logically derived from the information presented.

Examples:

In conclusion, our study demonstrates the importance of X in predicting Y, highlighting the need for targeted interventions in specific populations.

To conclude, we found some interesting results.

Conclusion Section of the Manuscript/Paper



How to write Good Conclusion Section?

1

Summarize Key Findings Concisely

The conclusion section should provide a succinct overview of the main findings, highlighting their significance and relevance to the research question.

Examples:

In conclusion, our study demonstrates a positive correlation between exercise and mental well-being, suggesting the potential for physical activity to improve mental health outcomes.

Our research shows that exercise is good for mental health.

2

Address Research Objectives

Revisit the stated objectives of the study and explain how they have been addressed or achieved based on the findings.

Examples:

The objectives of our study were successfully met, as we observed a statistically significant increase in plant growth rates when exposed to the experimental fertilizer.

Our study reached the objectives we had.

How to write Good Conclusion Section?

3

Discuss implications and potential applications

Explore the broader implications and practical significance of the findings, considering how they contribute to the field and potential applications.

Examples:

These findings have implications for policymakers, suggesting the need for implementing stricter regulations on carbon emissions to mitigate the effects of global warming.

Our findings have implications in various ways.

4

Address Limitations and Future Directions

Acknowledge any limitations or constraints of the study, and suggest potential avenues for future research to continue building on the current findings.

Examples:

It is worth noting that our study focused solely on a specific age group, and future research should consider expanding the sample to include a wider range of demographics for a more comprehensive analysis.

Our study had some limitations.

How to write Good Conclusion Section?

5

Reiterate Overall Significance

Emphasize the overall significance of the study and its contribution to the existing body of knowledge, reinforcing the importance of the research.

Examples:

This study contributes novel insights into the field of quantum mechanics, providing a deeper understanding of subatomic interactions and paving the way for further advancements in the realm of particle physics.

This study is significant and contributes to the existing knowledge.

Importance of Reference Section in the Manuscript

Credibility

- The reference section allows readers to evaluate the reliability and credibility of the information presented by demonstrating the use of reputable sources and scholarly work.

Replication

- Properly citing sources in the reference section enables other researchers to replicate the study and build upon the existing knowledge, fostering scientific progress

Avoiding Plagiarism

- The reference section provides transparency by acknowledging the contributions of other researchers and avoiding plagiarism, ensuring ethical research practices.

How to make Good Reference Section?

1

Accuracy and Relevance

Ensure that all references cited are accurate, reliable, and directly relevant to the research topic.

Including outdated or irrelevant references that are not directly related to the research question.

2

Consistency and Formatting

Examples:

Maintain a consistent citation style (e.g., APA, MLA) throughout the reference section, including proper formatting for different source types (e.g., books, journal articles).

Inconsistent citation styles, mixing different formatting styles within the reference section.

3

Completeness and Accessibility

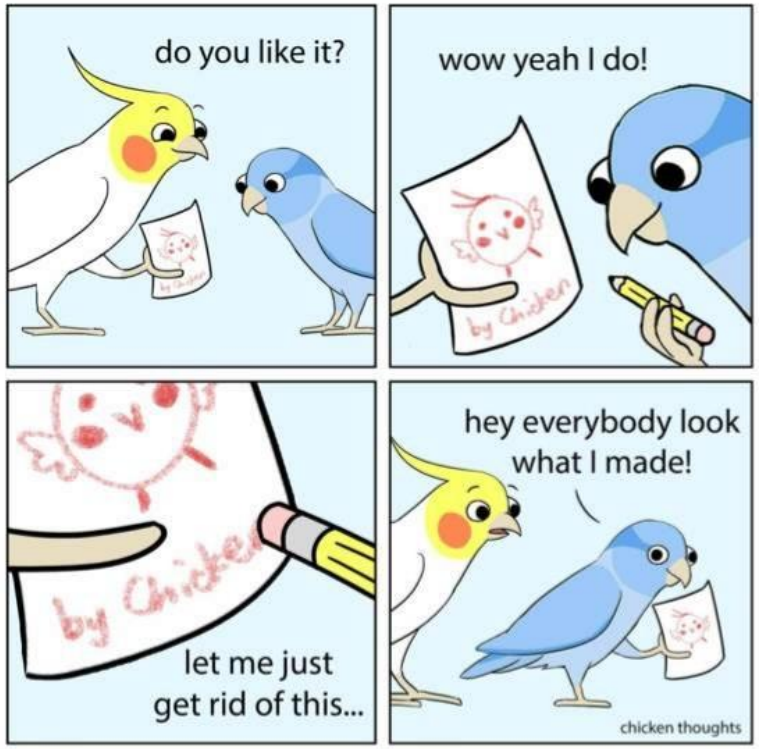
Examples:

Include all necessary information for each reference, such as author names, publication dates, titles, volume/issue numbers (if applicable), and accessible URLs or DOIs.

Missing crucial details (e.g., publication dates, author names) or failing to provide accessible URLs or DOIs for online sources.

Plagiarism

- Plagiarism means using someone else's work without giving them proper credit.
- In academic writing, plagiarizing involves using words, ideas, or information from a source without citing it correctly. In practice, this can mean a few different things.



"Originality is the key to unlocking your true potential; don't let plagiarism tarnish your creativity."

"Plagiarism steals not just words, but also the soul, passion, and effort behind them."

Plagiarism Detection Software

turnitin

grammarly

Plagiarism Checker X

iThenticate

Courtesy: https://www.memedroid.com/memes/detail/2829957/Plagiarism-for-birbs

Types of Plagiarism

1

Copy and paste plagiarism

This occurs when someone copies and pastes verbatim content from a source without giving proper attribution or citation.

2

Paraphrasing plagiarism

This happens when someone rephrases or changes the wording of a source's content without providing proper attribution, making it too similar to the original text.

3

Self-plagiarism

The act of reusing one's own previously published work without acknowledgment or citation. This can occur when submitting the same paper or parts of it to multiple sources.

4

Citation plagiarism

This occurs when someone includes incorrect or fabricated citations in their work to make it appear as though they have referenced legitimate sources.

5

Mosaic plagiarism

Also known as patchwriting, this happens when someone copies and pastes parts of a source into their work while making minor changes in the language or sentence structure without proper citation.

6

Verbatim plagiarism

This kind of plagiarism involves copying a section of text word-for-word from a source without any quotation marks, attribution, or citation.

7

Idea plagiarism

This happens when someone presents another person's original idea or concept as their own without giving proper credit. Even if the wording is changed, the core idea is still considered plagiarized if not properly attributed.

8

Image plagiarism

This occurs when someone uses images, photographs, graphics, or visual content without permission or proper attribution, infringing upon the copyright of the original creator.

Other Ethical Considerations for a Manuscript

Research Consent and Privacy

Respecting the privacy and confidentiality of participants or subjects involved in the research. Obtaining informed consent and ensuring data protection measures are in place to safeguard sensitive information.

Data Integrity and Reproducibility

Collecting, recording, analyzing, and reporting data accurately and transparently. Ensuring that research methods and findings can be replicated or verified by others. Avoiding selective reporting or cherry-picking data to support a particular hypothesis.

Ethical Considerations in Experimentation

Conducting research on human or animal subjects with utmost care and adhering to ethical guidelines and regulations. Minimizing harm or discomfort to participants, ensuring informed consent, and considering the rights and welfare of any living organisms involved.

“Research is seeing what everybody else has seen and thinking what nobody else has thought.”