



Interview Geek

**An online platform to test
your interview skills**

Presented By:

Amit Roy

Abdullahil Baki Arif

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Research Paper and Review Article

Research Paper and Review Article(1/3)



RESEARCH PAPER

1. What is its purpose?

- Its purpose is to conduct and report a detailed, original research study. It presents the authors' unique investigation of a specific research question.

2. What is it based on?

- It is based on original research that has been conducted by the paper's authors. This is known as primary literature.



REVIEW PAPER

- Its purpose is to critically analyse previously published literature on a specific topic.

- It is based on existing published articles; it does not report any original research. This is known as secondary literature.

Research Paper and Review Article(2/3)

3. How is it written?

- The authors formulate a research question, collect raw data and conduct an original study.
- The research paper is then written based on an analysis and interpretation of this data.

- The authors select a specific topic and then summarize existing literature on that topic.
- This is done in an attempt to present an overview of the topic's current state of understanding.

4. What does it report?

- It reports each step of the study in detail. This includes an abstract, the hypothesis, background study, methodology, results and an interpretation of the findings.
- It also includes a discussion of the possible implications of the results, of how the study contributes to existing literature and suggestions for further research.

- It identifies & reports commonalities between the results of the chosen studies. If there are discrepancies then the authors try to provide reasons for conflicting results.
- With a balanced perspective, the authors analyse available information from published work and report any problems with or gaps within the existing literature.

Research Paper and Review Article(3/3)


5. How long should it be?

- It depends on the word count specified by the journal but word limit usually ranges between 3000 to 6000 words. For some journals the word limit might even go up to 12,000.
- The word limit usually ranges between 3000 and 5000 words. In some cases, a longer or relatively short review paper might also be published, depending upon the journal.


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Why read a research paper?

Why read a Research Paper?(1/5)

- 
- Research papers are a great source of information because they are **CURRENT**.
 - Textbooks can be years out of date by the time they are published.
 - Research papers tell you what is happening **RIGHT NOW**... or at least what has happened more recently than textbooks.


Why read a Research Paper?(2/5)

- 
- Research papers are useful because they can be **REPLICATED**.
 - Popular articles and books give you general information and results, scholarly journals give you enough information that you could **do the experiment yourself**.
 - You can **verify** the research to see if you get the same results.


Why read a Research Paper?(3/5)

- Research papers also provide **ACTUAL DATA**.
- If you need to know exact results or properties for your own research...articles include actual data,uncertainties, conditions of the experiment, and much more.

Why read a Research Paper?(4/5)

- 
- Another reason: you can **EVALUATE CONCLUSIONS**.
 - Do you believe it...or not?
 - Articles provide the **author's explanation** of their results and conclusions.
 - You can see their assumptions and determine whether you believe the claim or not.

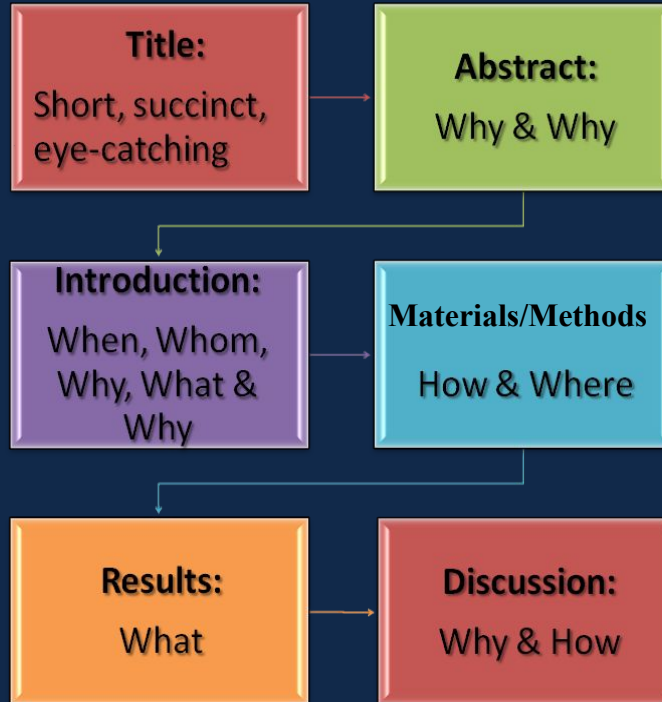
Why read a Research Paper?(5/5)

- 
- **CURRENT** - provides the most up-to-date information.
 - **REPLICABLE** - you can perform the experiment yourself.
 - **ACTUAL DATA** - you can use the raw data in your own research.
 - **SHOWS LOGIC** - you can evaluate the conclusions yourself and decide if you believe the claim...or not.

Anatomy of a Research Paper



Organization of a Research Paper



Note: Some journals will allow the Results and Discussion sections to be combined. In this case, the **What** and the **why** are presented together.



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TITLE AND AUTHORS

- Title
 - Attracts attention of the reader
 - Not very descriptive but catchy !
 - States the main Findings
- Authors
 - Ranked in descending order of contribution
 - “First Author” - A coveted Position
 - “Last Author” position - supervisor or principal investigator



ABSTRACT/SUMMARY

- Brief background of the topic
- Overall purpose of the study and the research problem(s) investigated
- Major findings or trends of analysis
- Relationship between these findings and the field
- Brief summary of interpretations and conclusions.



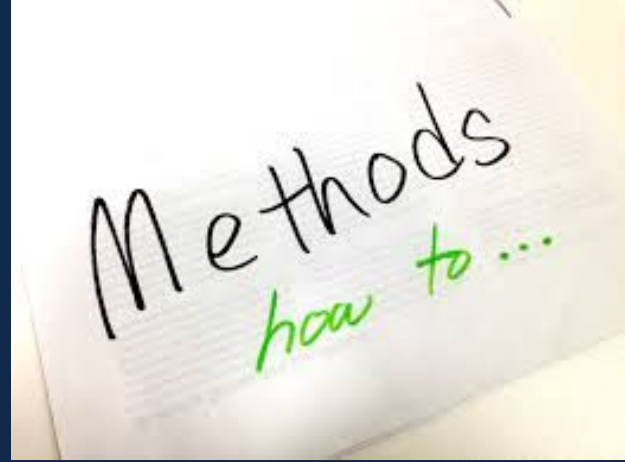
INTRODUCTION

- Presents **background information** for readers to understand the problem
- **Accepted state** of knowledge in a specialized field
- Focuses on a **particular aspect** of the field
- Includes the **hypothesis** being tested
- Conclusions (scientists don't really like surprise endings!)



MATERIALS AND METHODS

- Sometimes the last section
- Describes the **materials** used in research
- **Methods** carried out throughout the experiment
- **Figures and tables** provide details of the experiment



RESULTS

- Describes the **outcome** of the overall experiment
- Logic follows directly from introduction section
- Sometimes presented **without extensive discussion**
- Figures and tables to **visualize** the results
- Gives logical basis for **future works**

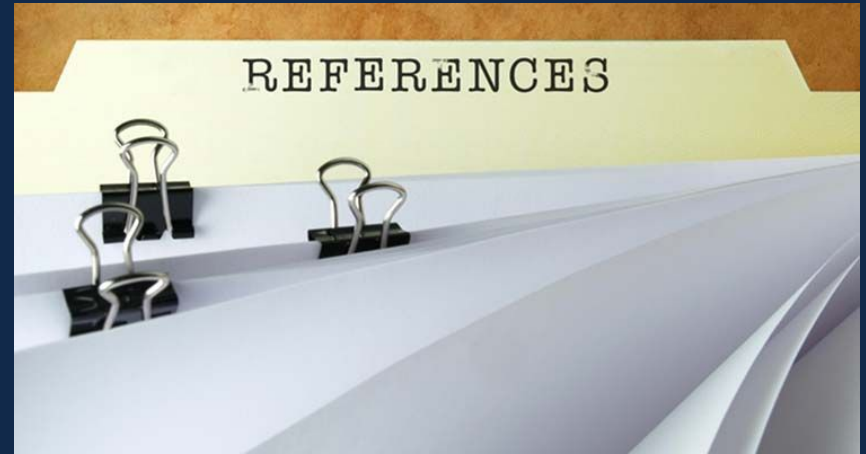


DISCUSSION

- Limitations of interpreted data are acknowledged
- Facts separated from speculations
- Findings related with other findings in the field
- Clarifies need for future research work

ACKNOWLEDGEMENTS / REFERENCES

- Useful for broadening your own literature search
- **Contributions** of other workers are recognized
- Review articles and primary research articles, books
- Reference list of papers
- Other works **cited** in text



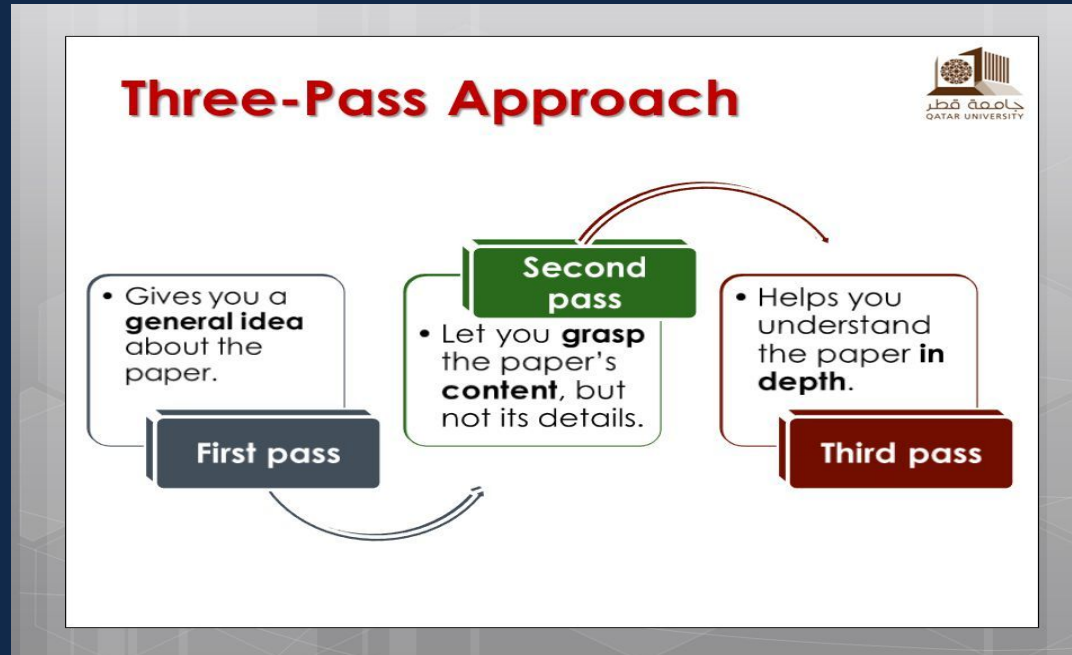
VARIATIONS

- Figures or Tables with legends
- Details in endnotes
- Results and Discussion are combined occasionally
- Highly compressed due to limited space

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Reading a research paper

The three pass approach





The First Pass (1/2)

- Get a bird's-eye view of the paper
- Carefully read the title, abstract, and introduction
- Read the section and subsection headings
- Read the conclusions



The First Pass (2/2)

Answer 5 C's:

- Category
- Context
- Correctness
- Contributions
- Clarity

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The Second Pass (1/2)

- Jot down the key points
- Ignore details as proofs
- Look figures carefully
- Mark relevant unread references

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The Second Pass (2/2)

After second pass you should be able to

- Grasp the content of the paper
- Summarize the paper
- Understand the proposed argument

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The Third Pass

- Fully understand the paper
- Virtually re-implement the paper
- Identify and challenge assumptions
- Jot down ideas for future work

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Difficulties and evaluation

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Difficulties in reading a paper

- Poorly written papers
- Scientists are poor writers
- Inefficient time and effort
- Can't see from readers' point of view



Difficulties in reading a paper

- Logical connections are often left out
- Long chain of reference
- Authors are uncritical about experiments
- Will to publish in trendy journal

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Evaluating the paper

Involves answering several questions

- What questions does it address?
- What are the main conclusion?
- What evidence support those conclusion?



Evaluating the paper

Involves answering several questions

- Do the data support conclusions?
- What is the quality of the evidence?
- Why are the conclusions important?



References

- <http://www.saghaei.ir/userfiles/how%20to%20read%20a%20scientific%20paper.pdf>
- <https://wordvice.com/journal-article-author-order/>
- <http://libguides.usc.edu/writingguide/abstract>
- <http://sdevoto.web.wesleyan.edu>



QUESTIONS?

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THANK YOU!!!