Workshop Penulisan Artikel Jurnal Internasional

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# Scientific Paper vs. Popular Science Paper

<table>
<thead>
<tr>
<th>Scientific Paper</th>
<th>Popular Science Paper</th>
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<tbody>
<tr>
<td><strong>New</strong> knowledge</td>
<td>Knowledge review</td>
</tr>
<tr>
<td>Enable others to repeat and/or extend experiment</td>
<td>Arouse interest</td>
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<tr>
<td>Logical and clear (IMRAD-format)</td>
<td>Teach or influence reader</td>
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<tr>
<td>Technical terms</td>
<td>Illustrations and headings as a tool to facilitate reading and understanding</td>
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Types of articles in social sciences

- Empirical studies:
  ‘Original research’, test hypotheses
- Literature reviews:
  organizing, integrating, and evaluating previously published material to clarify a problem
- Methodological articles:
  focus on methodological or data analytic approaches and introduce empirical data only as illustrations of the approach (e.g. Erickson, 2006)
- Case studies:
  reports of case materials obtained while working with an individual, a group, or an organization
Structure of a scientific paper

IMRaD
- Introduction
- Method
- Results\(^a\)
- Discussion\(^b\)
- Conclusions

\(^a\) Results and discussion
\(^b\) Discussion and conclusions
Introduction

- Clear rationale: *Why is this issue/study important?*
- Literature review (can be a different section): *what is known, what is not known*
  *How does the study relate to earlier studies?*
  *How does the study differ from and/or build on earlier studies?*
- What are the questions/objectives of the study?
Method

- The method describes how the study was conducted, including conceptual and operational variables used in the study.
- Different types of studies will rely on different methodology. Therefore, a complete description of the method enables the reader to evaluate the appropriateness of the methods.
- A good description of method allow others to replicate the study.
Results

- Early note: some journals use ‘results and discussion – conclusions and implication’; ‘results – discussions, conclusions and implications’
- Report the data in sufficient detail to justify conclusions.
- Mention all relevant results, including those that counter to expectation
Results

- Graphs and tables can speak for themselves.
- Do not repeat in words everything that the tables/graphs convey → point out key findings and offer some text that complements the findings.
- Clear graphs are essential. Do not put too much info on the graphs. The labels/legend are not too small.
- Check the resolution of figures and tables.
Discussion

- Do not restate the results
- The discussion section should answer why we obtained the observed results.
- Evaluate and interpret the implication of the results
- Draw inferences and conclusions from the results → answer the questions
Conclusions

- Clearly point to the true significance of the findings, but do not overstate them.
- Refer (back) to the main references to strengthen the conclusions.
- Acknowledge limitation of the study; address alternative explanations of the results.
- Highlight how the study contributes to the current knowledge.
- Further study.
Title

- Summarize the main idea
- It should identify the variables or theoretical issues under investigation and the relationship between them
- A good title is easily shortened to the running head within the published article
- Recommend length: no more than 12 words
Abstract

- Objective – method – results – conclusion
- The abstract should describe the problem and summarize the major points
- The abstract can be read on its own (readers understand the abstract without knowing the details of the research)
- Never refer to figures/tables in the abstract
- Most journals: about 200 words
Abstract

A good abstract is:

- **Accurate**: the abstract correctly reflects the purpose and the content of the manuscript
- **Non-evaluative**: report rather than evaluate; do not add to or comment on what is in the body of the manuscript
- **Coherent and readable**: Written in clear and concise language.
- **Concise**: Be brief and make each sentence informative.
Language (General)

- Consistency: British English vs. American English → check the targeted journal
- First person sentence? → it is debatable → check the journal
- Quotation mark → check journal
- Clear and concise
- Avoid unnecessarily long paragraphs. Break up paragraphs into smaller, useful units
# Language (Specific)

<table>
<thead>
<tr>
<th></th>
<th>Introduction</th>
<th>Methods</th>
<th>Results</th>
<th>Discussion/Conclusions</th>
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</thead>
<tbody>
<tr>
<td>Present tense</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Past tense</td>
<td>Mid</td>
<td>High</td>
<td>High</td>
<td>Mid</td>
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<tr>
<td>Passive voice</td>
<td>Low</td>
<td>High</td>
<td>Variable</td>
<td>Variable</td>
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<td>Citations</td>
<td>High</td>
<td>Low</td>
<td>Variable</td>
<td>High</td>
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<tr>
<td>Qualifications</td>
<td>Mid</td>
<td>Low</td>
<td>Mid</td>
<td>High</td>
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The introduction often includes several verb tenses.

- **Present tense:**
  - when stating a fact that is widely accepted
  - when a specific result, figure, or paper is the subject of a sentence.

- **Present perfect tense:** when referring to a previous study with results that are still relevant. This tense demonstrates that the action occurred in the past but still applies in the present.

- **Past tense:** when referring specifically to the methods used in a previous paper
Method

- The methods section should use the past tense because it is a report of what was done during the course of the study.
  e.g. “the nurse collected the blood sample of the patients”

- When one action occurred before another, the past perfect tense can be used to indicate the earlier action.
  e.g. “patients who had elected to undergo surgery completed questionnaires.”

- When one action occurred while another was ongoing, the past progressive is used
  e.g. “while patients were preparing for surgery, nurses collected baseline samples”
Results

- The results section is largely written using the past tense because the experiments described in the text were completed before the paper was written.
- In certain cases, the present tense is needed. e.g. when the subject is figure: “Figure 1 shows our fluorescence data”
Discussion & Conclusions

- Use past tense when referring to specific results or methods
- Use the present when presenting conclusions
- The discussion/conclusions may include the future tense if directions for additional research
Abstract

- The verb tense chosen for the abstract should be based on the section of the text to which each sentence corresponds.
  - *Introductory* part describing the study uses *the present tense*
    - e.g. *The present study reports/describes/...*
  - *Descriptions of the methods and results* should use *the past tense.*
    - e.g. *Data were analyzed by ...*
  - *Conclusions* use *the present tense.*
    - e.g. *Our results suggest that ...*
The title does not need to be a complete sentence, and no verb is necessary.

In cases where a complete sentence is appropriate, use the simple present tense.
Are we ready to submit?

- As a final step after completing research paper, edit, edit, edit. Identify and correct mistakes that we may have made
- Proofread: both the content and the language
- Format: e.g. APA style
- Check references: citation ← match → list
- Acknowledgment(?)
- Prepare version for blind review
Choosing the right journal ...

- [http://www.scimagojr.com](http://www.scimagojr.com)
- Right journal → fits with our material and/or strategy:
  - Aim and scope
  - Preferred research method
  - Ethics: references to articles published in the targeted journal
- Read the ‘Instruction for authors’!
- Never submit to multiple journals simultaneously
Education

- Asia Pacific Education Review. Netherlands.
- Asia Pacific Journal of Education. UK
Teknik Sipil & Bangunan

- Journal of Civil Engineering and Management. Lithuania.
- Civil Engineering and Environmental Systems. United Kingdom.
- Civil Engineering. United States.
- KSCE Journal of Civil Engineering. South Korea.
- Archives of Civil Engineering. Poland.
- International Journal of Civil Engineering. Iran.
- Asian Journal of Civil Engineering. Iran.
- Civil Engineering Practice. United States.
Teknik Arsitektur

- *Architectural Engineering and Design Management*. United Kingdom.
- *Journal of the Institution of Engineers (India): Architectural Engineering Division*. India.
Teknik Otomotif

- Qiche Gongcheng/Automotive Engineering. China.
- Automotive Engineering International. United States.
Teknik Mesin

- [Mechanical Engineering]. United States.
- [Archives of Civil and Mechanical Engineering]. Poland.
- [Advances in Mechanical Engineering]. United States.
- [Frontiers of Mechanical Engineering]. United States.
- [International Review of Mechanical Engineering]. Italy.
- [International Journal of Automotive and Mechanical Engineering]. Malaysia.
- [International Journal of Mechanical Engineering Education]. UK.
- [Mechanics and Mechanical Engineering]. Poland.
Teknik Elektro

- Computers and Electrical Engineering. United Kingdom.
- International Review of Electrical Engineering. Italy.
- Electrical Engineering. Germany.
- Turkish Journal of Electrical Engineering and Computer Sciences. Turkey.
- Journal of the Institution of Engineers (India): Electrical Engineering Division. India.
- Journal of Electrical Engineering and Technology. South Korea.
- International Journal of Electrical Engineering. Taiwan.
Teknik Informatika & Komputer

- Advances in Electrical and Computer Engineering. Romania.
- Iranian Journal of Electrical and Computer Engineering. Iran.
- Journal of Electrical and Computer Engineering. US.
PKK Boga

- **Trends in Food Science and Technology**. United Kingdom.
- **Journal of Food Engineering**. United Kingdom.
- **Journal of Food Protection**. United States.
- **Critical Reviews in Food Science and Nutrition**. United Kingdom.
- **Journal of the Science of Food and Agriculture**. United Kingdom.
- **Journal of Food Science**. United Kingdom.
- **Food Research International**. United Kingdom.
- **Food Additives and Contaminants**. United Kingdom.
- **Food Quality and Preference**. United Kingdom.
- **Journal of Food Composition and Analysis**. United States.
- **Food Control**. Netherlands.
- **Innovative Food Science and Emerging Technologies**. Netherlands.
- **International Journal of Food Science and Technology**. United Kingdom.
- **Food Technology**. United States.
PKK Busana

- International Journal of Clothing Science and Technology. United Kingdom.
- Clothing and Textiles Research Journal. US.
- World Clothing Manufacturer. United Kingdom.
- The Science of Clothing Comfort. UK.
Teknik Kimia

- Journal of Industrial and Engineering Chemistry. South Korea.
- Chemical Engineering and Processing. Netherlands.
- Chemical Engineering Research and Design. United Kingdom.
- Chemical Engineering and Technology. Germany.
- Reviews in Chemical Engineering. Germany.
- Advances in Chemical Engineering. United States.
- Chemical Engineering Education. United States.
- Asia-Pacific Journal of Chemical Engineering. United Kingdom.
Thank you.