Writing Academic Paper

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13 December 2016

Brief CV – Riri Fitri Sari

- Guru Besar bidang **Teknik Komputer**– (2009 – now)
- PhD Univ of Leeds, MSc Univ of Sheffield UK
- Ketua, **UI GreenMetric** Ranking of World Universities and UI GWUR Network Hub (2010 – now)
- Anggota Tim Task Force World Class University (WCU) Kemristekdikti.
- Reviewer Beasiswa dan Hibah LPDP Kemenkeu
- IPM (Insinyur Profesional Madya), Persatuan Insinyur Indonesia (1997-now)
- Direktur Pengembangan dan Pelayanan Informasi UI (2006 – 2014)
- Awards: IEEE R10 WIE most inspiring engineer 2012, Upakara Dayaning Bawono UNNES 2016, Indosat and Telkom Women Technologist 2012, Kazakhistan Kaznu 80th Medal of Excellence in Education 2014
- Area riset: IoT, Protocol Engineering, Vanet,
- Semester lalu membimbing 5 mahasiswa S3 (5 mahasiswa selesai S3, 3 diantaranya cumlaude),1 S2 dan 1 mahasiswa S1
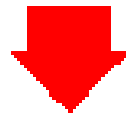
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Contents

From an idea

by way of rules

to the published paper

- ▶ Types of scientific written communication
- ▶ Scientific writing in general
- ▶ What is a scientific paper
- ▶ IMRaD format
- ▶ Paper organization
- ▶ Structure of Introductiom
- ▶ Paper writing
- ▶ Pharaprasing
- ▶ The editing process & Tools
- ▶ Proof-reading
- ▶ How to make it published
- ▶ Handling Rejection
- ▶ Reputable Journal
- ▶ Current Condition
- ▶ Conclusion

Scientific written communication

- ▶ Reports
- ▶ Theses or dissertations
- ▶ Journal articles
- ▶ Books and book chapters
- ▶ Technical manuals/users guides
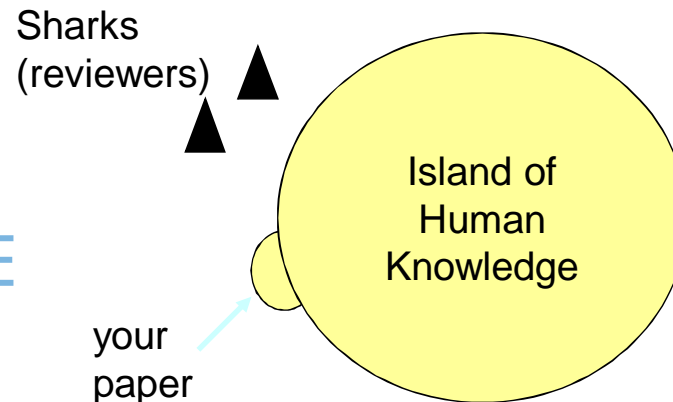- ▶ Research or grant proposals
- ▶ Slide presentations
- ▶ Posters

Scientific writing

- Subject
- Purpose
  - to exchange the scientific knowledge
  - to ask and answer specific questions
- Audience
  - scientists and those interested in the subject
  - a publisher or an editor

WHAT IS A SCIENTIFIC PAPER?

• It is an addition to human knowledge; this is a reversible statement (addition of knowledge takes place through scientific papers)

Sharks (reviewers) ▲

OCEAN OF
IGNORANCE
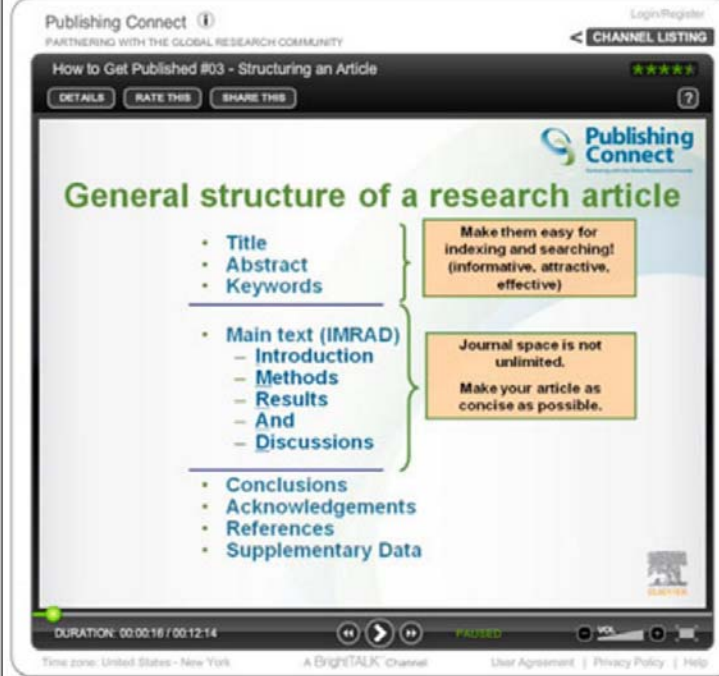
Island of Human Knowledge

your paper

Scientific paper is <u>not</u>:
- a technical report or term paper
    - a paper is worth writing only if it has general implications for knowledge
- a gospel
    - paper should be scholarly but you're not writing for the ages – others will come after you with newer data and better models. Think of your role as guiding their future efforts
- being occasionally wrong is forgiven,

Typical Paper Structure

- Title
- Abstract
- Introduction
- Optional: Background
- Related Work (alternatively put before conclusion)
- Example
- Approach/Framework
- Implementation
- Evaluation
  - Experiment/Case Studies/Experiences/Examples
- Discussion
- Conclusions (and Future work)

The Stanford InfoLab's patented five-point structure for Introductions

1. What is the problem?
2. Why is it interesting and important?
3. Why is it hard? (E.g., why do naive approaches fail?)
4. Why hasn't it been solved before? (Or, what's wrong with previous proposed solutions? How does mine differ?)
5. What are the key components of my approach and results? Also include any specific limitations.

Academic Writing Style

Expectation of academic writing:

➢ **uses formal language**

➢ **shows strong control over grammar**

➢ **is cohesive and flowing**

➢ **follows the correct referencing conventions**

➢ Academic style:
  - ➢ formal, but not verbose
  - ➢ polite, but not personal

➢ Areas to consider:
  1. Structure – Is it set out correctly?
  2. Writing style – Is it formal and following the correct conventions?
  3. Research – It must be based on scholarly research.
  4. Informed discussion – Objective and looks at all points of view.

The academic essay structure

Introduction (about 10% of word limit)

- Grab or motivator
- Map of main ideas
- Thesis statement or overall position of the author

Body paragraphs

(number will vary according to length of essay – about 250 – 300 words in length)

- Topic sentence – main idea + how it relates to the topic
- Prove it points
- Clincher – summarise main idea in relation to the question

Conclusion (about 10% of word limit)

- Map of main conclusions
- Clincher (final word)
- Restated thesis statement

Introduction graphic organiser

Restate the question and place in context

This essay will discuss …

In this essay…

The purpose of this essay is to …

Map of main points gleaned from research

On one hand:

1.

2.

3.

On the other hand:

1.

2.

3.

Overall position or thesis statement

On the whole/Overall/Thus it would appear/Therefore

Main Body of an Essay

- ▶ Information should be logically presented.
- ▶ Each paragraph contains a main idea/issue.
- ▶ Each idea is supported by evidence/research.
- ▶ Single sentence paragraphs or page long paragraphs are not acceptable.
- ▶ Information from other sources MUST be referenced correctly.
- ▶ When writing academically, the information paragraphs need to be in a sequential order so that the meaning is cohesive and easy for the reader to follow (Cohesive and flowing)

Paragraphs

▶ **Each paragraph deals with only one idea/issue, and**

  ▶ has a lead or topic sentence, which states the idea

  ▶ is followed by sentences to explain more about the idea

  ▶ has a final sentence that leads into the next paragraph. Consider each paragraph as a mini-essay.

Cohesion in writing

Cohesion is a 'gluing together' of ideas

▶ It is the transitional words and phrases and cohesive ties that
- ◦ link ideas in a text
- ◦ assist the transition from one sentence to the next so that the unity of the text is achieved.

▶ *Transitional words*
- ◦ signal words that help readers follow the direction of the writer's thoughts.

▶ *Cohesive ties*
- ◦ achieve unity and organization within the paragraph.
- ◦ help the reader to understand how the points raised in the

paragraph relate to each other and to the topic sentence.

When cohesion is strong, the text is more readable and the meaning is easier for the audience to interpret.

Skeleton of an Article

IMRaD structure- Writing a draft

Introduction--- **What is the?**
Materials and methods/experimental procedures-- **What did you do?**
Results-- **What did you find?**
and
Discussion-- **What does it mean?**

Paraphrasing

▶ When you paraphrase you express the same message in different words.

- ▶ Keep the same core meaning as the original passage.

- ▶ In your voice, sounds like you.

- ▶ To avoid copying someone else words.

- ▶ To add variety to writing.

- ▶ Language test (you must understand what you mean)

- ▶ Tools:

    - ▶ Sinonym and antonym.

    - ▶ Grammar rules: structure, clauses, active/passive, conjunction.

How to Paraphrase

- Know the rules of the language.

- Identify independent clause.

- Isolate the sentence main message.

- Change as many words as you can, i.e. Noun, Verbs, Adjective, Adverbs.

- Change as many structure as possible, order (maintain chronology and relationship.

- Active to/from passive

- Change phrases to clauses, and vice versa

Ethics in Scientific Writings

1. **Falsification and Data alteration**

2. **Plagiarism:** Intentional use of another persons work with reference to your name without proper citation of the original source
   1. **www.turnitin.com** and
   2. **www.plagiarism.com**
   3. **Grammarly.com**

3. **Duplicate manuscripts**

4. **Unnecessary self citation**

5. **Redundant publication**

6. **Author conflicts of interest**

7. **Animal use concerns**

"Welcome to the co-author's party! You're number twenty-one!"

How to make it published

▶ Timely, relevant, evident base, well designed, well written, honest

▶ Highlight the importance

▶ Follow direction

▶ Make the manuscript clear, logical, easy to read.
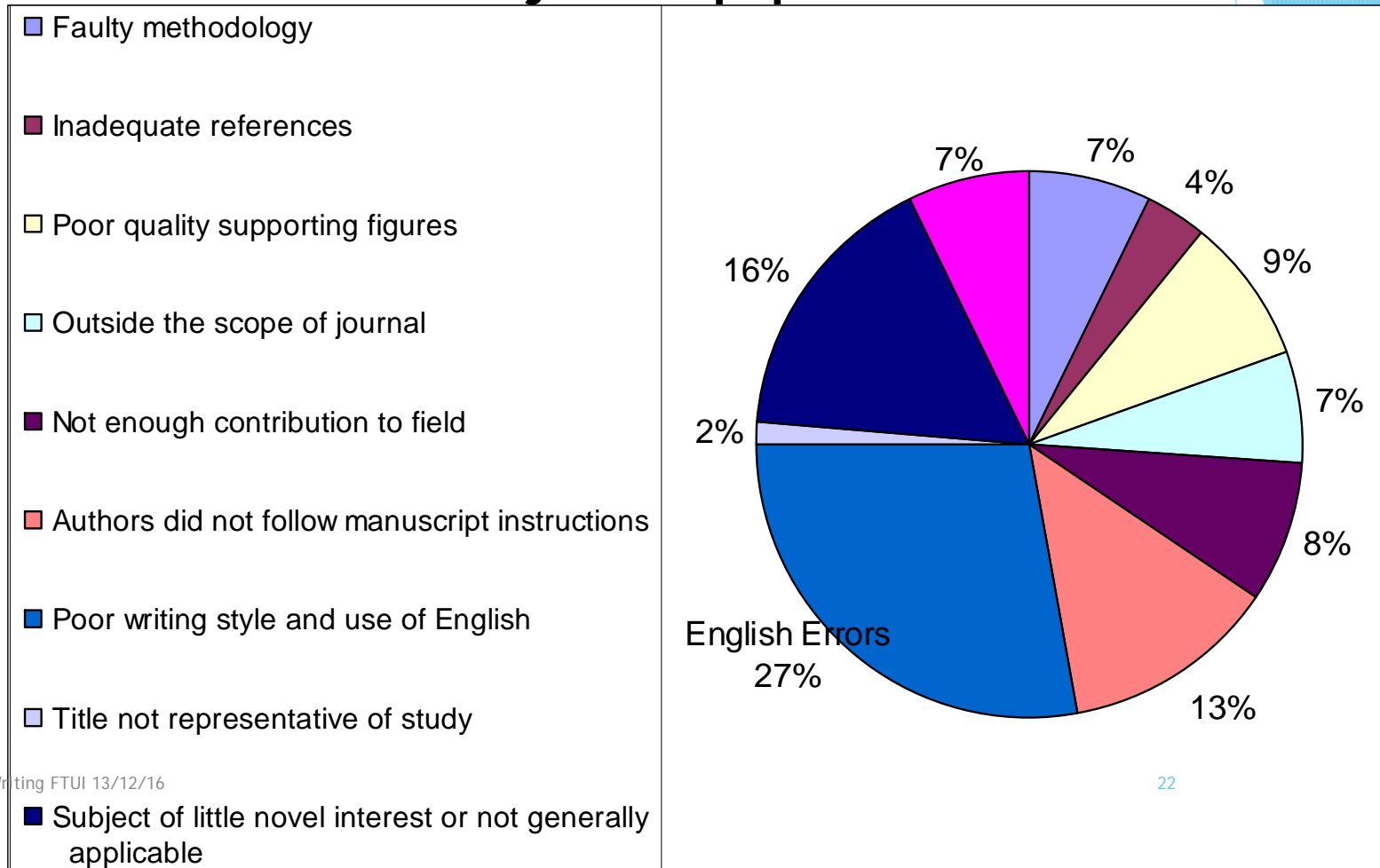
▶ Accept reviewer suggestion

▶ Be sussinct

Steps for publication

- ► Define aim of research

- ► Make a planning

- ► Monitor personal effectiveness

- ► Perform research

- ► Document your work

- ► Make your work visible

- ► Have fun

Rejection Reason

▶ Problem statement is insufficient

▶ Data is inaccurate and inconsistent

▶ Literature review is outdated or insufficient

▶ Data presented is insufficient

▶ Tables or figures are defective.

▶ Results is incomplete or inappropriate.

▶ Over interpretation of result (no data for claims)

▶ Inappropriate or suboptimal instrumentation (methods of testing/data collection)

▶ Sample is too small or biased

▶ Text difficult to follow

Reasons for major revision or rejection of Taiwanese journal papers

■ Faulty methodology

■ Inadequate references

□ Poor quality supporting figures

□ Outside the scope of journal

■ Not enough contribution to field

■ Authors did not follow manuscript instructions

■ Poor writing style and use of English

□ Title not representative of study

■ Subject of little novel interest or not generally applicable

Habit #5 (from 7 Habits of Highly Effective Researchers) Writers use the competitive, political and supportive energy of other researchers.

- **Supportive energy**: Support groups
- **Competitive energy**: Researchers compare themselves with other researchers and keep score
- **Political**: Researchers are political.
- The negative side is that half of peer reviewed articles in top rated journals are never referenced by anyone, including the author. This shows that low impact papers are often published in the best journals because the articles are reviewed by friends of the author. (Holub, Tappeiner, and Eberharter, SEJ 1991).

Better Citation
- *"Smith's model was effective in X problem, however in Y…"*
- *"The X benefit of Smith's approach are not applicable to Y…"*

Emotion on Rejected Paper

- ▶ Depression
- ▶ Anger at editor.
- ▶ Anger at system.
- ▶ Consider changing job.
- ▶ Reviewing manuscripts and deciding the reviewers had points

Steps to organizing your manuscript

1. Prepare the figures and tables.
2. Write the Methods.
3. Write up the Results.
4. Write the Discussion. Finalize the Results and Discussion before writing the introduction. …
5. Write a clear Conclusion.
6. Write a compelling introduction.
7. Write the Abstract.
8. Compose a concise and descriptive Title.
9. Select Keywords for Indexing
10. Write the Acknowledgement
11. Write up the References

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Do not waste time on dead or dying topics

► If your most recent references are ten years old, it is a dead issue.

► If the most recent references closely related to your paper are 5 years old, it is a dying issue.

► It is also difficult for the editor to find suitable referees for outdated topics.

► Your inability to find enough references indicates

  ► You have not read the literature.

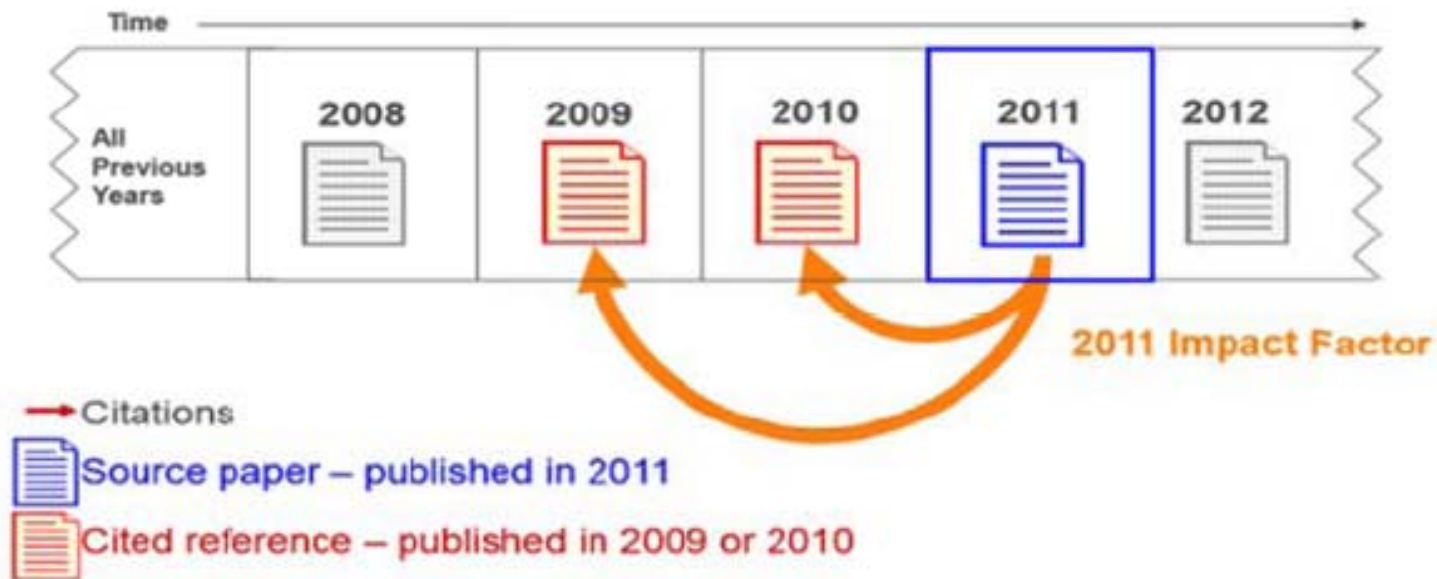 ► Others are not interested in the topic, so, it is unlikely to get published.

How to identify "Hot Topics"

▶ Look for clues to anticipate the next 'big thing'

▶ Read top journals to identify 'new problems'

▶ Read letters to the editor

▶ Look for controversies and unexplained findings

▶ Look for crossover areas with other domains

▶ Do database keyword searchs

▶ Attend conferences

Jurnal Internasional bereputasi

- Terindeks database internasional berputasi:
  - Scopus
  - Web of science

  - Memiliki Impact Factor dari ISI Web of Science (Thomson Reuters) dan Scimago Journal Rank (SJR) (nilai maksimal 40)

  - Jika terindes database internasional bereputas (Scopus dan Web of science) namun belum memiliki faktor dampak (impact factor) dari ISI web of science (Thomson Reuters) atau Scimago Journal IRank (SJR), (diberi nilai maksimal 40)

Perhitungan Impact Factor

Perkembangan Terkini

▶ Google Scholar

▶ H-Index peneliti

▶ Scopus IdPeneliti

▶ Webometric ranking of Indonesian Researcher

▶ Simlitabmas

▶ Perkembangan TIK yang sangat cepat

▶ Networking

Kesimpulan

- Mulailah membuat account dan profile di Google Scholar, ResearchGate, Academia.edu

- Penelitian dan penulisan makalah adalah pekerjaan yang bermula dari kecintaan, passion, dan keinginan untuk tuntas

- Menulis makalah adalah pekerjaan yang diiterasi terus menerus, tidak ada garis akhir, namun setiap langkah akan membawa kita makin dekat ke tujuan.

- Bentuk dan adopsilah kebiasaan-kebiasaan baru yang berkembang dikalangan peneliti, karena perubahan zaman.

- Rayakan keberhasilan, belajar dari feedback, hilangkan stress dan tetap pada perspektif yang tepat, selalu ingat tujuan, bertanya pada saat yang tepat.

- Carilah sumber belajar dan bentuklah lingkungan yang kondusif.

- Berterimakasihlah pada reviewer yang telah membagikan waktunya yang berharga bagi pengembangan kemampuan kita dan komentarnya yang konstruktif.

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