



REPORT WRITING OVERVIEW

SSY145

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Today's agenda and homework

- Lecture in 2 parts:
 - A. Academic and scientific genres and the writing process – 10:00-10:45
 - B. Genre analysis (focus on abstracts and introductions) – 11:00-11:45

A. Academic and scientific genres



Why talk about writing? The role of writing in science

“The communicative demands of the modern university involve far more than simply controlling linguistic error or polishing style”

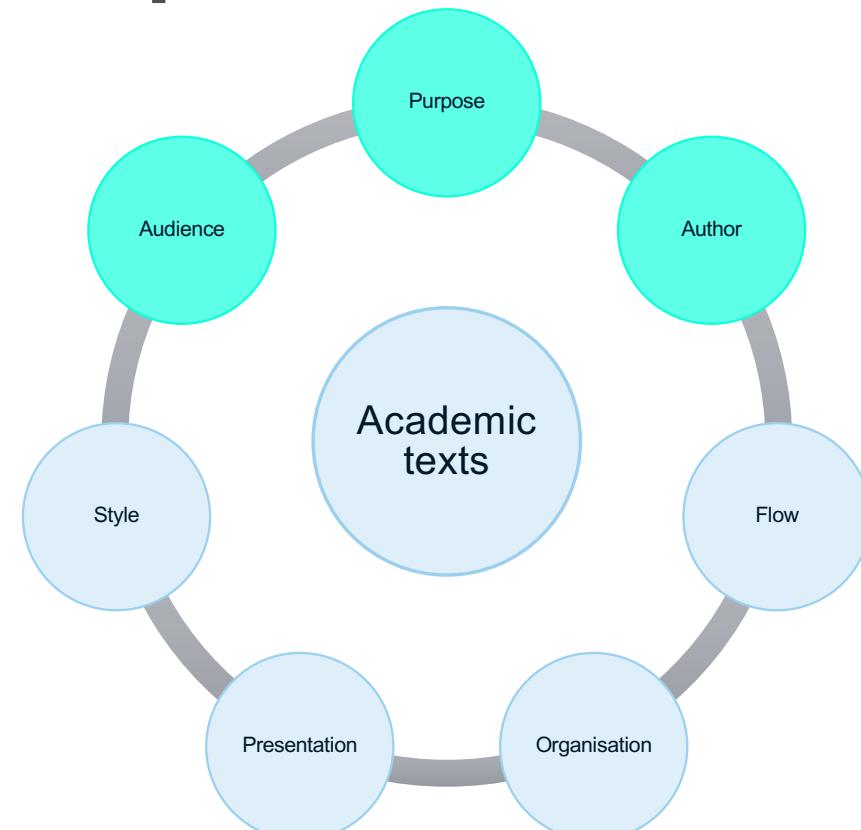
(Hyland & Shaw, 2016, p.1)

“The ability to write well is a key skill of science. ...the write-up is the only part of the work that survives or is assessed ... Unfortunately, many researchers do not write well.”

(Zobel, 2014, p.14)

Academic texts as a social practice

- There is no “general” texts
- We always write to someone, and for a specific purpose
- Audience, Purpose and Author: They determine the text



(Inspired by Swales & Feak 2012)

Academic texts as social practice: the audience

You, the reader and the text...

Writing in teams: internal readers

Supervisors: tutors and examiners

Peer-review systems



Writing well = being able to engage in these writing practices



Academic texts as a social practice: purposes

* Zobel Introduction and Ch. 2 “Getting Started”

“Science is a system for **accumulating reliable knowledge**. (...) Writing underpins the whole of the research cycle. A key aspect of writing is that the discipline of stating ideas as logical, organized text forces you to formulate and clarify your thoughts.” *

What new knowledge does your paper offer to your audience?

What type of argument you need to introduce this k'new knowledge? And what evidence (further literature?) will you need to interest your readers and write a relevant report?

“ How a potential research topic is shaped into a defined project depends on **context**. (...) At the beginning of a research program, then, you need to establish answers to two key questions. First, what is the broad **problem** to be investigated? Second, what are the **specific initial activities to undertake** and **outcomes** to pursue?”

What is your research question? Where do you start? As a group, do you have a mutual plan, goal, and desired outcome?

Approaching the writing process

- Planning your writing
(reading + outlining)
- Drafting (as a group)
- Revision (who can help you with what?)



Planning your report

A. Search for the relevant literature

- Search engines (e.g., Google scholar)
- GAI tools (e.g., Elicit, Research Rabbit, Semantic Scholar)

B. Create an outline together

- Agree on the main arguments, key points, and structure.
- Identify the tasks that need to be completed (reading, writing, more?).



READING TIPS

- First round of reading
 - Do not read straight through the article. Focus on the parts where there are summaries (i.e., abstract, introduction, discussion, conclusion, headings).
 - Go through figures and tables. These parts present findings and maybe other parts of the paper in a condensed way.
- Second round of reading
 - If the article is significant to you, read again and start delving into details
 - When reading the methods and findings sections, have specific questions in mind (e.g., which variables are being tested, what is the hypothesis?)
 - Read more than twice if necessary!

Critical reading (adapted from Swales & Feak, 2012, Zobel, 2014)

Critical question to ask when reading:

- Who is the target audience?
- What is the main purpose of the paper?
- Does the paper provide significant contribution? Is it significant to my topic?
- Is the relevant literature discussed appropriately?
- Do the methods used answer the research question?
- What conclusions are drawn? Are they appropriate?
- Are all the technical details correct and sensible?
- Are there any serious ambiguities or inconsistencies?

Which questions are
relevant while reading for
your survey paper?
And for the peer review?



Swales & Feak (2012) *Academic writing for graduate students* (pp. 191-192)
Zobel Chapter 3

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GAI-Assisted Reading

(e.g. Kahubi, Avidnote)

GAI as a Complement, Not a Substitute

- Remember, GAI augments your critical reading skills; it doesn't replace them.

Enhancing Initial Comprehension

- Utilize GAI-generated summaries for a swift grasp of key concepts, but be aware of GAI's bias in summarising content.

Breaking Language Barriers

- GAI enables access to academic content in multiple languages, promoting global academic freedom.

Clarifying Complex Concepts

- GAI can clarify complex concepts and unclear information in texts.

Exploring Opposing Views

- Task GAI to present opposing viewpoints for well-rounded research.

Building Connections

- GAI suggests related texts and ideas for your exploration, but always cross-check.

Practical Considerations

- Be mindful of GAI limitations, especially in suggesting references and making up claims. GAI tools does not go through the whole document. You cannot upload articles that are not open access.

Revise your hypothesis: some inspiration for your main argument

Which questions can you use?

Borrego, Foster, & Froyd (2014). Systematic literature reviews in engineering education and other developing interdisciplinary fields. *Journal of Engineering Education*, 103(1), 45-76.

Identifying Scope and Research Questions

As with other research methods, well-defined questions that accurately reflect the intent of the researchers suggest criteria to guide design decisions later in the process (Petticrew & Roberts, 2006). For example, later in the process, researchers will have to articulate criteria for excluding or including studies in the collection to be analyzed. If the question is phrased as “What is known about X?”, it will be difficult to determine if a particular study should be included or excluded, since virtually every study could potentially shed some light on the question. The question might be refined in several different ways:

Is X effective (under particular conditions)? *or* What factors influence effectiveness of X?

What learning outcomes are associated with X?

What factors contribute to increasing or decreasing likelihood of X?

How has X been operationalized, measured, or assessed?

What methods have been used to teach X, increase learning of X, or increase application of X?

What theoretical frameworks and perspectives have been applied to X?

What research and evaluation methods have been used to study X?

Colaborative drafting

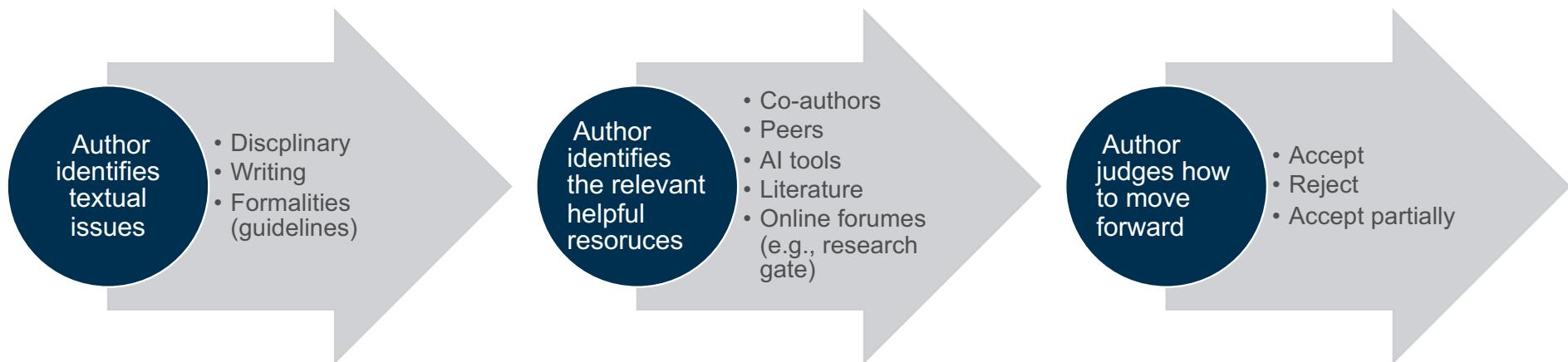
1. Talk about **strengths and weaknesses** and define roles and responsibilities accordingly using your tasks sheet.
2. Set clear **goals and deadlines** with timeline for drafting, revision, and final submission. Make small goals.
3. Write **independently, then merge**. If suitable, each member can write separate sections independently and then merge these sections into a single document, followed by a thorough editing process to ensure uniformity in tone and style. Alternatively, you can **divide the sections**, then merge and edit together for coherence.

Learning as a social practice



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Authorial decisions: the revision process



Suggested revision checklist (Who can help you with these questions?)

Revision area (disciplinary conventions)	Who can help? (Co-authors, peers GAI tools, literature...)
Terminology Check: Have I used the correct terminology throughout my paper?	
Argument Support: Are my arguments robustly supported with evidence from the literature and/or my results?	
Research Positioning: Is my research perspective clearly stated? Do I reference studies and argue from within the same field of research?	
Precision of Information: Is the information I present accurate and precise?	
Reader-awareness: Can my reader easily follow and understand my arguments? Are they likely to find them persuasive?	



Revision area (writing and formalities conventions)	Who can help? (Co-authors, peers GAI tools, literature,...)
Detail Adequacy: Have I included sufficient details to support my arguments and findings?	
Text Organization: Is the structure of my text clear, facilitating comprehension at both detailed (micro) and overall (macro) levels?	
Language and Grammar: Is the language in my text clear and concise? Have I thoroughly checked for grammatical and lexical errors?	
Assignment Guidelines Compliance: Have I followed the assignment's guidelines (such as formatting and including the relevant sections)?	

Levels of prompting and the learning outcomes

- Level 1 (immediate correction): Overwriting your text
 - E.g., “rewrite this text to fix the grammatical mistakes”
- Level 2 (educational edit): Ask for feedback and suggestions
 - E.g., “Provide feedback on the grammatical mistakes in this text and suggest edits with explanations”
- Level 3 (critical engagement): Ask a GAI tool to ask you questions about your text
 - E.g., “ask me questions related to the arguments in relation to XY in the text”
- Level 4 (interactive learning): Ask to highlight errors in the text and give examples of correct form
 - E.g., “Point out where the grammatical mistakes are and provide examples of the correct form”. You can attempt to correct yourself and ask the GAI tools whether you got it right!
- Level 5 (self-test): Ask to highlight errors in the text
 - E.g., “Point out where the grammatical mistakes are.”

Your level of prompting impacts your development as a writer and as an engineer!

Reflect on your long-term goals before you decide which level to use and for which area.

Chalmers Library resource
<https://guides.lib.chalmers.se/sokadchutvardsinformation/EN/ai>

Break!



B. Genre analysis

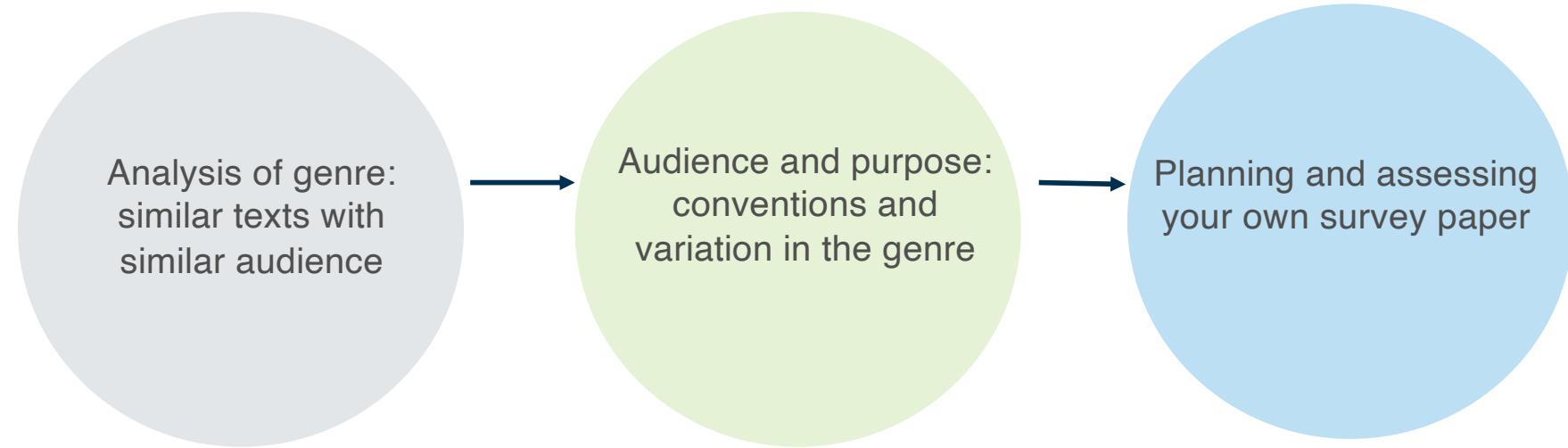
Analysis of rhetorical moves in abstracts
and introductions



Layout of survey paper

- 1. Title page (title + author information)**
- 2. Abstract**
- 3. Introduction**
- 4. Main part/s with sub-sections**
- 5. Ending (usually called Conclusion and Discussion)**
- 6. References**

From genre analysis to writing your paper



Example of Moves analysis: the employment letter

Dear Dr XXXX,

Thank you for your interest in our university. (**acknowledgment**)

I would like to congratulate you on being offered the position of Senior Lecturer at XXXX University. (**good news**)

This letter is your formal offer of employment. In order for us to begin processing your appointment, I would be grateful if you would return the enclosed documentation at your earliest convenience. (**administrative details**)

We look forward to welcoming you to XXXX University, and wish you every success in your career with us. (**welcoming close**)

Yours sincerely, XXX



Abstract: Purpose

- First thing you send to a call for a conference, paper etc. & last thing you update before final version
- **Persuasive purposes**: captures the attention of potential readers, by suggesting a contribution to a specific topic / areas of research
- **Indexing purposes**: disseminates information about your work

It is a “stand alone” text:

Not an introduction!

Should be written towards the end of your writing process



Common rhetorical moves in the abstract

- Move 1 - Background/introduction/situation
- Move 2 - **Present research/purpose/gap**
- Move 3 - **Methods/materials/subjects/procedures**
- Move 4 - **Results/findings**
- Move 5 - **Discussion/conclusion/significance**

Not always
there, and not
always in this
order!

Analayse the following abstarct for rhetorical moves

Abstract: 1) This study focuses on Distributed MIMO (D-MIMO) systems and provides a discussion about their role in next generation networks. 2) The paradigm shift to distributed networks offers great potential to address the 6G requirements, through macro diversity. As 6G scenarios and use cases continue to emerge, new challenges are likely to arise that may affect the widespread implementation of D-MIMO. 3) To address those, different deployment options have been proposed for roll-out considerations. They are composed of several sub-components that can be categorized as (i) wireless or wired fronthaul/backhaul, (ii) analog or digital signals, (iii) distributed or centralized processing, and (iv) coherent or non-coherent transmission. To facilitate standardization efforts, we provide 3GPP-aligned terminology for network nodes, multi- point transmission and reception schemes. 4) In order to enable large-scale implementation of D-MIMO systems, it is important to determine the needed amount of distribution, develop practical solutions for high-frequency bands, and ways to convey data that meet the transport requirements. 5) On this regard, we discuss key enablers and present simulation results for D-MIMO systems towards 6G. In particular, we present solutions for D-MIMO networks in dynamic scenarios related to channel estimation and layer-1 mobility considering coherent and non-coherent joint transmission, and analog fronthaul implementation using analog- radio-over-fiber that are promising for high (upper mm-Wave and (sub-)THz) carrier frequencies, as well as integrated access and backhaul, network-controlled repeaters, and reconfigurable intelligent surfaces that are possible enablers for cost-efficient network densification at both low (cm-Wave, lower mm-Wave) and high carrier frequencies.

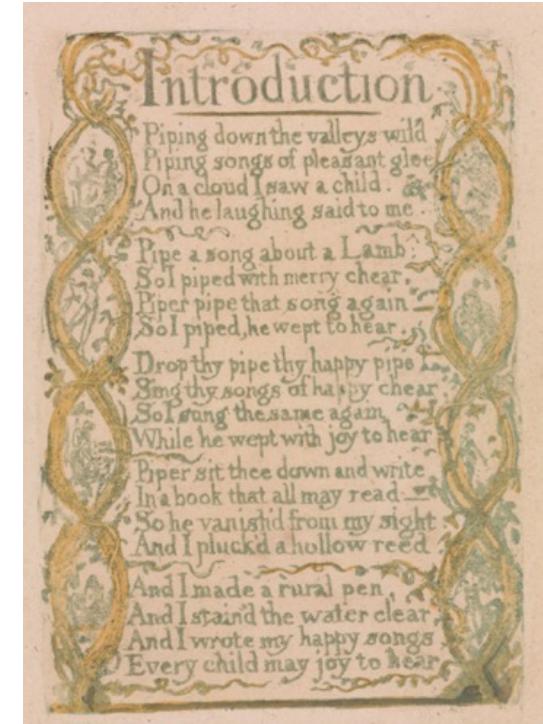
Haliloglu et al 2023). Distributed MIMO Systems For 6G. European Conference On Networks And Communications & 6G Summit (Eucon/6G Summit): Physical Layer And Fundamentals (PHY)

Introduction: setting up the argument

Purpose of the introduction:

- provide information about context
- indicate motivation for the paper: warrant
- define focus
- explain document structure

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Let's try to identify key moves in the survey paper



Introduction: setting up the argument

Task – Analyzing an introduction

1. Label in your own words the different rhetorical moves that you can see in the two introductions --> what the authors do in the text
2. Discuss these questions:
 - What is the background of the paper that the authors set in the introduction?
 - Which sentence(s) serve to convince the readers of the importance of this paper?
 - What kind of evidence do the authors provide in support of the importance of their work?
 - Can you distinguish facts and the author's claims about these facts?
 - How do the papers discuss the significance/application/contribution? Do they describe their method? How do they open and end the introduction?

Haliloglu et al (2023)

- 6G technology will need to bring significant advancements such as high radio performance in terms of both ultra-high data rate links and capacity. ...
- Distributed MIMO (D-MIMO) networks can improve these metrics by offering a high level of macro-diversity ... There are various research in the literature covering channel estimation [1]–[4], flexible RU selection/clustering [2], [5], [6] ...
- The main challenge for the widespread implementation of D-MIMO is the cost of installing many nodes in different locations that require high-speed Fronthaul (FH) connections. ...
- D-MIMO will be able to address 6G challenges at both low (cm-Wave, lower mm-Wave) and high (upper mm-Wave and (sub-)THz) carrier frequencies. It has the potential to ...
- It is likely that multi-TRP will converge to D-MIMO with each new release. 3GPP uses TRP terminology which, however, does not include radio split dimension, thus, we will use RU and DU throughout the paper.



First Move: Telling the reader what the main topic is, and stating its relevance (for a specific audience)



Second Move: Reviewing previous work and making an evaluation of this work to warrant your paper/study



Third Move: Pointing out a gap



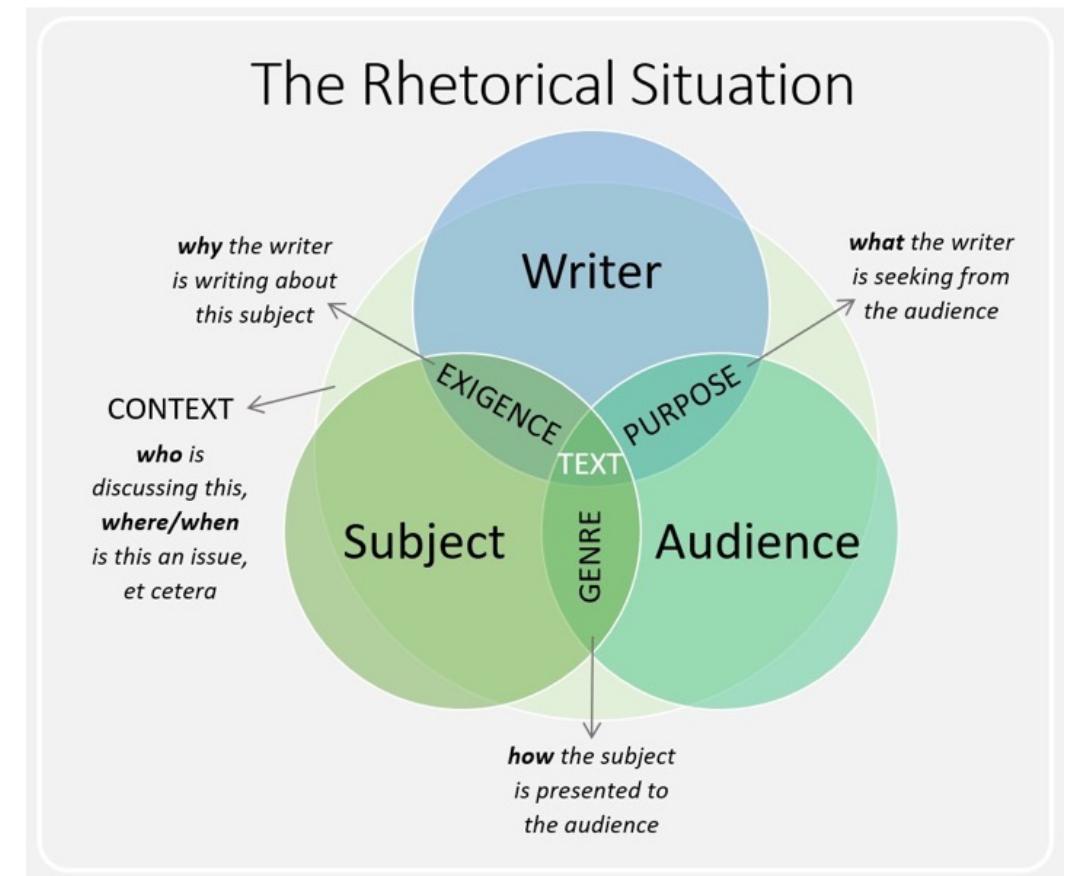
Fourth Move: Stating your aim(s)



Fifth Move: Anticipating your findings (alternatives are possible: stating significance or contribution)

Introduction: setting up the argument

Despite differences in topic, the overall structure of the rhetorical argument is very similar



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Finally, a few words on references

Why do we need references?

- Help the reader with bibliographical information: point to possible further reading
- Give credit to the original source of the information/idea
- Give your statements more credibility/authority
- Demonstrate your knowledge/ build a competent authorial persona

REFERENCES

- [1] G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in *Plastics*, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.
- [2] W.-K. Chen, *Linear Networks and Systems* (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135.
- [3] H. Poor, *An Introduction to Signal Detection and Estimation*. New York: Springer-Verlag, 1985, ch. 4.
- [4] B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.
- [5] E. H. Miller, "A note on reflector arrays (Periodical style—Accepted for publication)," *IEEE Trans. Antennas Propagat.*, to be published.
- [6] J. Wang, "Fundamentals of erbium-doped fiber amplifiers arrays (Periodical style—Submitted for publication)," *IEEE J. Quantum Electron.*, submitted for publication.
- [7] C. J. Kaufman, Rocky Mountain Research Lab., Boulder, CO, private communication, May 1995.
- [8] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interfaces (Translation Journals style)," *IEEE Transl. J. Magn.Jpn.*, vol. 2, Aug. 1987, pp. 740–741 [Dig. 9th Annu. Conf. Magnetics Japan, 1982, p. 301].
- [9] M. Young, *The Technical Writers Handbook*. Mill Valley, CA: University Science. 1989.

All in-text references must be given in the list of references and vice versa!

Example end reference list

Organize references by the order in which they appear in the text

REFERENCES

- [1] G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in *Plastics*, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.
- [2] W.-K. Chen, *Linear Networks and Systems* (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135.
- [3] H. Poor, *An Introduction to Signal Detection and Estimation*. New York: Springer-Verlag, 1985, ch. 4.
- [4] B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.
- [5] E. H. Miller, "A note on reflector arrays (Periodical style—Accepted for publication)," *IEEE Trans. Antennas Propagat.*, to be published.
- [6] J. Wang, "Fundamentals of erbium-doped fiber amplifiers arrays (Periodical style—Submitted for publication)," *IEEE J. Quantum Electron.*, submitted for publication.
- [7] C. J. Kaufman, Rocky Mountain Research Lab., Boulder, CO, private communication, May 1995.
- [8] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interfaces (Translation Journals style)," *IEEE Transl. J. Magn. Jpn.*, vol. 2, Aug. 1987, pp. 740–741 [Dig. 9th Annu. Conf. Magnetics Japan, 1982, p. 301].
- [9] M. Young, *The Technical Writers Handbook*. Mill Valley, CA: University Science, 1989.

Group tutorials

- Doodle link on the “Tutorial information” page on Canvas to sign up for tutorials.
- Two groups will attend each tutorial via Zoom
- Tutorial schedule

29 April
9.00 – 10.30
10:30-12:00
13:00-14:30
14:30-16:00

Tutorials

- Once I have all time selections on the Doodle, I will notify you of the tutorial schedule.
- Find the sign up on Canvas
 - Modules
 - Communication session materials
 - Tutorial information
- If I have to make any changes (i.e. due to illness, etc.), I will communicate those through Canvas.

Tutorial information

Tutorial scheduling

The sign-up Doodle for a tutorial slot is [accessible here](#).

With your group and at least one peer group, you will attend a tutorial to receive feedback on a draft of your report. The scheduling and logistics information for each tutorial will be placed in the table below after the sign-up for the tutorials has been completed:

30 April, 9:00- 10:30	Zoom link will appear here	Groups names will appear here
2 May, 9:00- 11:45	Zoom link will appear here	Groups names will appear here
4 May, 9:00- 10:30	Zoom link will appear here	Group names will appear here

Tutorial overview

Two tutorials will have two groups, while one will have 3 groups. The basic setup is that we spend 45 minutes on each text, but this is flexible and will depend on the texts we're working with. Make sure to send the latest version of your text to Kathy (strong@chalmers.se) at **latest 2 days before** your tutorial, so that I have time to read the texts. Make sure to also send your text to your peer group, within a reasonable timeframe, so they also have time to read (discuss this with each other and set deadlines that work for the members of both groups, but many groups like to swap texts at the same time that they email their text to Kathy). Bring all your materials to the tutorial, along with any questions and comments you might have.

Peer response requirements

- Stay for the entire time of the tutorial (a break will occur around the halfway point)
- Send Kathy your text **at least 2 days before** your tutorial booking slot
- Read the text of the group who shares your tutorial booking slot
- Come to the session with detailed written feedback for the group who shares your tutorial
- Come to the session ready to take about your peer group's text

The aim of the tutorials is to give you a broader perspective through peer review, both in terms of the technical content you are dealing with, and in relation to writing, e.g., what can you learn from listening to (or taking part in) a discussion of another group's text. Are their problems/solutions similar to yours? I can say from experience that peer tutorials are a **really efficient way** for you to broaden your writing awareness and skills, not to mention improve your actual text.



Next steps:

With your writing group:

- Discuss the topic and “problem” addressed in your report: what is your research question? (Can you write it down as an introduction?)
- Determine possible useful criteria and/or a system for selecting and summarizing further reading. Plan for research and reading in your group? **Note: all of you should read all the literature reviewed in your report**
- Make a timeline and a plan, and decide individual tasks and communication practices

Further writing support: Chalmers Writing Center

<http://writing.chalmers.se/wc?from=Main.HomePage>

- Online writing resources
- Student tutors



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