GÖTEBORGS UNIVERSITET

Academic Writing and Reading – Term Paper (DAT110)

Anne Hsu Nilsson
Unit for Academic Language (ASK)
University of Gothenburg

Dates

Tuesday, December 4

10:00-11:45 in EL42

Academic Writing and Reading – Term Paper (lecture)

Tuesday, December 18

09:00-11:45 in EC

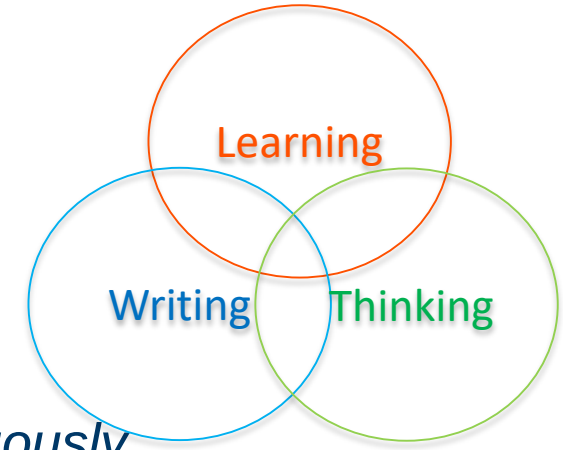
Term Paper Peer Response (workshop) – with fika!

Today's agenda

- Writing & Learning
- Academic Writing
- **Report Structure**
- **Paragraphing**
- Types of Reading
- **Referencing**
- Peer Response

*The reference system used by the presenter is APA

Writing & Learning



Learning to Write & Writing to Learn

- ***Learning outcomes:*** *clearly and unambiguously communicate* [information]…*
  **essential in engineering and research*
- ***(Term paper PDF)*** *The writing training will prove useful in your studies, your thesis paper and your future career*

"Writing is thinking. To write well is to think clearly. That's why it's so hard." — David McCullough

"Start writing, no matter what. The water does not flow until the faucet is turned on." — Louis L'Amour

Stages of Writing

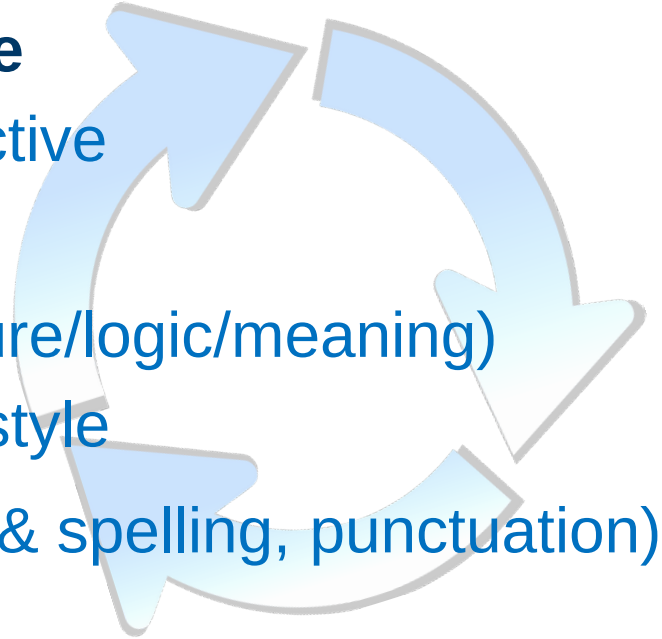
	Writer-oriented ←	→ Reader-oriented
Audience	self	others
Purpose	clarifying, organizing ideas	communication between individuals
Style of language	informal; private, personal/coded	formal; public
Structure/ Form	linear, direct: notes, diary, drafts	structured: essays, papers, theses, reports, business communication …

(Chandler & Munday, 2016a & 2016b; Erlbaum, cited in Nordquist, 2017; Jalmar, 2016)

GÖTEBORGS UNIVERSITET

Writing Process

- Drafting
- Self-reflection / **Peer response**
  blind spot vs. reader's perspective
- Revision
  - global, content-level (structure/logic/meaning)
  - local, sentence/word-level, style
- Proofreading (minor grammar & spelling, punctuation)
- Final version



cf. Revising, Editing and Proofreading
http://ecp.engineering.utoronto.ca/online-handbook/the-writing-process/revising-editing-and-proofreading/

Academic Writing

- What are some desired features?

long sentences
logical
concise
honest
personal
objective
subjective
critical
complex sentence structure
consistent
informal
many synonyms
clear
difficult words
precise
analytical
vague
research-based
coherent
cohesive
formal
factual

"Have something to say, and say it as clearly as you can. That is the only secret of style." — Matthew Arnold

Informal vs. Formal Styles – Examples

We made awesome progress in bringing up awareness of lots of really dreadful security issues!!

→ We made significant progress in increasing awareness of numerous (very) serious security breaches.

"Substitute 'd***' every time you're inclined to write 'very;' your editor will delete it and the writing will be just as it should be." — Mark Twain

Exercise

- LaTex is something that is used a lot for making scientific stuff like reports, studies, etc.

  LaTex is a system that is often used for creating scientific documents such as reports and studies. (adapted from Per's "Quick Start Guide for LaTex")

- Expert Systems can help people in finding out what is wrong.

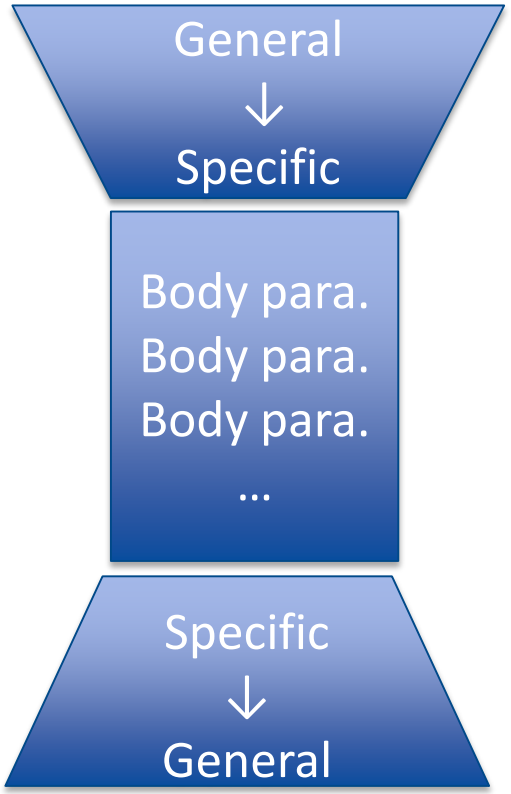
  Expert Systems can help/assist the user in identifying the problems.

  Expert Systems can help/assist the user in the diagnosis of problems. (Swales & Feak, 1994, p.16)

- Researchers have come up with a new way of taking care of the issue.

Report (essay) structure

- **Abstract** (optional)
  - Brief summary of main points and should be finalized last
- **Introduction** (1+ paragraphs)
  - Previews
- **Main body** (several paragraphs)
  - Term paper: technical descriptions + results
    - Sections (subtopics)
    - Figures and tables
- **Conclusion** (1+ paragraphs)
  - Reviews, summarizes, generalizes
- **References**



Low Power and Power Management for CMOS—An EDA Perspective by J Kawa (2008) [longer article]

Term paper examples

Hardware Acceleration and Emulation	Design and Verification Languages
I. Introduction II. Use Minds for Hardware Accelerator and Emulator Devices III. Processor-Based Acceleration and Emulation IV. FPGA-Based Acceleration and Emulation V. GPGPUs and Logic Simulation A. Synchronous algorithms B. Discrete event driven algorithm **VI. Conclusion** **References**	**Abstract** VHDL Verilog SystemC ASystemC Key elements of a Testbench e SystemVerilog Bluespec SystemVerilog Open Verification Methodology (OVM) Comparison with respect to adaptation **Conclusion** **References**

Introduction (Trent University, n.d.)

What is the topic?
Why is it important?

Domain → topic/problem

Systems design → power consumption → microarchitectual level

- Background to/Context for the report
  - Definition, description, examples, cause-effect, etc.
- (Gap) however, but, little, no

  However, very little is known about X / there is limited/no data on…

  While some research has examined X, there is little research into Y …

  The nature of X remains unclear.
- Purpose/Aim of report

  This report aims to…

  The purpose/aim of this report is (was) to …
- (Preview / Structure of the report)

General
↓
Specific

Tables & Figures

- Caption (see IEEE, 2016, p. 17) – e.g., do not start with A, An, or The
- Location element + Summary statement

  Table 1 shows the common language learning software available at Swedish universities.
- Verbs (Swales & Feak, 1994, p. 83)
  - **Active voice:** demonstrates, depicts, describes, indicates, illustrates, lists, presents, reveals, shows, summarizes…
    - Fig. 1 + Verb …
  - **Passive voice:** (be) given (in), illustrated, listed, presented, seen, shown…
    - X is shown in Fig. 1.
    - As shown in Fig. 1, X …
    - … (Figs. 1 and 2).

Don't describe word for word!

Tables & Figures – Highlights&Commentary

Table 1 **shows** the common language resources available at Swedish universities. **In general**, …. **Notably**, workshops … **One the other hand,** online resources… This **could be** due to the fact that…

- Content (Swales & Feak, 1994, pp. 77-97)
  - general → specific; major → minor
  - analysis, comparisons
  - explanations, implications
- Being Cautious
  - X _____ Y. (caused, contributed to, influenced, was one of the causes of, might have been a small factor in; seems; possibly)

Paragraph

- When to start a new paragraph (stycke)?
  - To present a new idea or new point within an idea
  - To contrast information, e.g., present opposing views on a topic
  - To give the readers a break if the paragraph is too long/complex
    - How long can a paragraph be?

(1 paragraph = 1 thought unit)

Paragraph Structure

- Topic sentence (kärnmening)
  - First 1-2 sentences of the paragraph (exception: introduction)
  - Controlling idea (previews/limits content) – unity
  - Length?
- Body (Support/Development)
  - Definition
  - Explaination, details
  - Examples
  - Facts, data
  - ...
  - Citations (references)

Topic Sentence

Irrelevant sentence?

Unlike gasohol-powered cars, the fuel cell alternative is virtually pollution-free. A methanol fuel cell system works through chemical reactions that leave the air clean. A fuel processor breaks the methanol down into carbon dioxide and hydrogen; the hydrogen is then pumped to the cell itself, where it combines with oxygen to form water… The net products are carbon dioxide, water, and electricity. Hydropower is one of the earliest forms of green energy. By contrast, when gasohol is burned in an internal combustion engine, it produces the same nitrous oxides that gasoline does.

(Gurin, cited Huckin & Olsen, 1991, pp. 409-410)

Flow

This + X

Relative pronoun

Repetition of key words

Pronoun

Transition

Unlike gasohol-powered cars, the fuel cell alternative is virtually pollution-free. A methanol fuel cell system works through chemical reactions that leave the air clean. A fuel processor breaks the methanol down into carbon dioxide and hydrogen; the hydrogen is then pumped to the cell itself, where it combines with oxygen to form water… The net products are carbon dioxide, water, and electricity. By contrast, when gasohol is burned in an internal combustion engine, it produces the same nitrous oxides that gasoline does.
(Gurin, cited Huckin & Olsen, 1991, pp. 409-410)

…This process is also very costly.

Improving "Flow" (Swales & Feak, 2012)

- Repetition of key words

  gasohol, methanol, fuel cell, hydrogen

- Pronouns (**it**, its, they, their, them)
- Relative pronouns (that, which, who…)

  …chemical reactions **that** leave the air clean

- This + "summary word"

  This process …

- Old+New Information: A, B. B, C. C, D …

An alternative that is virtually pollution-free is the **fuel cell**. A methanol fuel cell system works through **chemical reactions**. In a series of chemical reactions, the methanol is broken down into carbon dioxide and **hydrogen**; the hydrogen is then combined with oxygen to form water… (Adapted from Gurin, cited Huckin & Olsen, 1991, pp. 409-410)

Paragraph Development

- Definition
- Physical description
- Classification
- Comparison & Contrast
- Process
- Problem-solution
- Cause-effect
- Subtopics

+ explanations; details; examples

+ Citations (References)

Definition + Classification (Comparison & Contrast)

Open access (**OA**) means unrestricted online access to peer-reviewed scholarly research. There are two ways to make an article openly available: 1) through author self-archiving in an OA repository, also known as 'green' OA, or 2) through publishing in an open access journal, known as 'gold' OA.

With green OA, authors publish in any journal and then self-archive a version of the article for *gratis* public use on the author's personal web site, on a server operated by the author's employer, or …

With gold OA, authors publish in Open Access journals…

(IEEE, 2016, pp. 4-5)

Sentence Patterns

- Definition
  - X means / is / is defined as / refers to / describes …
  - purpose / function / value …
  - X includes / comprises / is mainly / is generally … (general description)
- Classification
  - X is divided / classified / grouped / categorized into…
  - There are … types / levels / stages / categories…
- Comparison
  - Both X and Y are … / X and Y are similar in that…
  - X is more … than Y
- Contrast
  - X is different from Y
  - X is …, while/whereas Y is …

GÖTEBORGS UNIVERSITET

MANCHESTER 1824
The University of Manchester

Academic Phrasebank http://www.phrasebank.manchester.ac.uk/

Classifying and Listing

When we classify things, we group and name them on the basis of something that they have in common. By doing this we can understand certain qualities and features which they share as a class. Classifying is also a way of understanding differences between things. In writing, classifying is often used as a way of introducing a reader to a new topic. Along with writing definitions, the function of classification may be used in the early part of an essay, or longer piece of writing. We list things when we want to treat and present a series of items or different pieces of information systematically. The order of a list may indicate rank importance.

General classifications

X may be divided into	three main	classes. sub-groups. categories.

For previewing sections or transitioning between ideas/paragraphs

X may be classified	on the basis of according to	Y	into Xi and Xii.

NOTE: the referencing style on this webpage is Harvard, not IEEE

Process

…what we now know as the scientific method provides guidelines for the systematic acquisition of knowledge. Following this method, the researcher first observes some aspects if nature and then poses a specific question about what has been observed. In order to answer this question, pertinent data are collected. On the basis of these data, a hypothesis is proposed to explain them. Experiments based on this hypothesis are designed and conducted to test each contingency. After thorough experimentation, the researcher validates, modifies, or rejects the original hypothesis.

*(*Arnaudet & Barrett, 1990, p. 82*)*

first, second, next, then, during, after that, finally …

Problem-Solution (Swales & Feak, 1994, p. 75)

1+2=topic sentences

All people need to eat, and they eat a variety of foods—rice, vegetables, and meat. However, the problem is that sometimes people can become ill after eating spoiled or contaminated food. Each year millions of people become sick or even die. Meat can be particularly dangerous because it is difficult to determine whether it has been contaminated by simply looking at it. Fruit and vegetables at least have obvious signs of spoilage. One solution to this problem is to slow the process of spoilage…

Note: problem and solution can be in different paragraphs

Cause and Effect (+Examples)

Long topic sentence!

Families are the basic units of society and have been transformed to a great degree over the past 50 years as a result of changes in their structure (for example[,] smaller families, later marriage and childbearing, increased divorce rates and single parenthood), global trends in migration, the ageing of the population and HIV/AIDS. **These dynamic social forces** have had a manifest impact on the capacities of families to perform such social functions as the socialization of children and caregiving for its younger and older members.

(Source: Writing for the UN, 2007)

Latin Abbreviations

Abbr.	Meaning	Example (IEEE, 2016 – also see II-B, III, IV-A, etc.)
e.g.	for example	Hyphens and periods are accepted, if [they are] consistent in [the] paper, e.g., (1a), (1.1), (1-1). (p. 16)
i.e.	that is	Hyphens and periods are usually removed from equation numbers, i.e., (1a) rather than (1-a) ... (p. 31)
viz.	namely	*(not commonly used)*
etc.	and so forth	[figures] …the citation of (a), (b), etc., should always appear before the corresponding caption part. (p. 17)
cf.	compare with	(cf. [3])
et al.	and others	*(see Referencing)*

Types of Reading

	Extensive reading ←	Intensive reading →
Purpose	for pleasure (general reading skills)	for information
Understanding	general, overview	complete
Details	not so important	very important
Types	books, magazines	journal articles, contracts, legal documentation, application forms

Reading Techniques – Skimming for General Idea

- Book cover
- Table of contents
- Summary/abstract
- Headings
- Section summaries
- Conclusions
- Tables, figures and pictures
- Italicized words
- **Topic sentences** (and final sentences)

Why Use or Cite Sources?

- Demonstrate your knowledge and research
- Add support to your points
- Acknowledge the contribution of others
  - Words
  - Information, ideas, theories
  - Methods, processes
  - Data, tables, figures
  - Speech, music
- Allow others to trace the sources
- Contribute to the on-going dialog in the scientific community

Exceptions:
historical events,
general knowledge, standard academic usage, field-specific common knowledge,
Eg., Newton's law of motion

Plagiarism

"[to present] the words or ideas of others without giving credit" (University of Wisconsin, n.d.)

"uncredited use (both intentional and unintentional) of somebody else's words or ideas." (Purdue OWL, 2014)

- Instances (Jahlmar, 2016)
  - Copy text word-by-word without " " or in-text reference
  - Summarize or paraphrase without in-text reference
  - Translate a text without giving a reference
  - Take sections of a text and just change a few words to synonyms, whether you are give a reference or not

→ Avoiding Plagiarism: Plagiarism (ub.gu.se)

IEEE Editorial Style

- Institute of Electrical and Electronics Engineers
- Full manual (see Ping Pong; also see Citation Reference)
- **Citing/Referencing** (IEEE, 2016, p. 34)
  - **In-text citation** – in body text (brief)
    - as footnote numbers:
      X causes Y [8].
      … as shown by Brown [4], [5]
      As mentioned earlier [2], [4]–[7], [9], …
      Smith [4] and Brown and Jones [5, p. 6] … / Wood et al. [7] …
    - as nouns
      … as demonstrated in [3, pp. 5–7]
      According to [4] and [6]–[9], …

    NOTE: Use **et al.** for 6+ authors for in-text citation
  - **Reference list** – at the end (complete)

Only mention author's name when integral to understanding (IEEE, 2016, p. 16)

Reference List

- vs. Bibliography
- In order of first appearance in text
- Categories (IEEE, 2016, pp. 34-39)
  - Periodicals, Books, Reports, Handbooks, Published Conference Proceedings, Papers Presented at Conferences, Patents, Theses (M.S.) and Dissertations (Ph.D.), Unpublished, Standards
  - *On-Line Sources:* Books, Monographs, Periodicals, Papers Presented at Conferences, Reports and Handbooks, U.S. Government Documents, Patents, Manuals/Software
  - Abbreviations

Manual provides *basic format and examples:*
[1] J. K. Author, "Name of paper," *Abbrev. Title of Periodical*, vol. *x,* no. *x,* pp. *xxx-xxx,* Abbrev. Month, year.

- NOTE: Use **et al.** for six or more authors

Examples (IEEE, 2016, pp. 34-39)

[1] B. Klaus and P. Horn, *Robot Vision.* Cambridge, MA, USA: MIT Press, 1986.

[2] J. P. Wilkinson, "Nonlinear resonant circuit devices," U.S. Patent 3 624 125, July 16, 1990.

[3] L. Stein, "Random patterns," in *Computers and You,* J. S. Brake, Ed. New York, NY, USA: Wiley, 1994, pp. 55-70.

[4] W. P. Risk, G. S. Kino, and H. J. Shaw, "Fiber-optic frequency shifter using a surface acoustic wave incident at an oblique angle," *Opt. Lett.*, vol. 11, no. 2, pp. 115–117, Feb. 1986. [Online]. Available: http://ol.osa.org/abstract.cfm?URI=ol-11-2-115

[5] S. P. Bingulac, "On the compatibility of adaptive controllers," in *Proc. 4th Annu. Allerton Conf. Circuit andSystems Theory*, New York, 1994, pp. 8–16.

…Is it a book, chapter in book, conference proceeding, patent, or online periodical?

Verbs for Reporting

- Examples (University of Bath, 2017)

  ... **as shown** by Brown [4]
  As previously [3] **stated** …
  The theory was first **put forward** in 1987 [1].
  For example, **see** [7].
  Several recent studies [3], [4], [15], [16] **have suggested** that…

- Some common verbs

  agree, analyzes, argue, assert, claim, conclude, confirm, describe, discuss, explain, examine, find, identify, indicate, maintain, note, observe, present, provide, propose, report, show, state, study, suggest, support …

  Cf. Reporting Verbs and Your 'Writer's' Voice

MANCHESTER 1824
The University of Manchester

Academic Phrasebank

HOME »

Referring to Sources

www.phrasebank.manchester.ac.uk/referring-to-sources/

GENERAL LANGUAGE FUNCTIONS

- Being Cautious
- Being Critical
- Classifying and Listing
- Compare and Contrast
- Defining Terms
- Describing Trends
- Describing Quantities
- Explaining Causality
- Giving Examples
- Signalling Transition
- Writing about the Past

ABOUT PHRASEBANK

An enhanced and expanded version of PHRASEBANK can now be downloaded in PDF:

One of the distinguishing features of academic writing is that it is informed by what is already known, what work has been done before, and/or what ideas and models have already been developed. Thus, in academic texts, writers frequently make reference to other studies and to the work of other authors. It is important that writers guide their readers through this literature. This section of *Academic Phrasebank* lists some of the phrases that writers may use for this purpose.A note on the literature review: It is the purpose of the literature review section of a paper or dissertation to show the reader, in a systematic way, what is already known about the research topic as a whole, and to outline the key ideas and theories that help us to understand this. As well as being systematic, the review should be evaluative and critical of the studies or ideas which are relevant to the current work. For example, you may think a particular study did not investigate some important aspect of the area you are researching, that the author(s) failed to notice a weakness in their methods, or that their conclusion is not well-supported (refer to *Being Critical*).

Site uses British English (single quotation marks); mostly uses Harvard citations

Synthesising material: bringing sources together - close

...

www.phrasebank.manchester.ac.uk/referring-to-sources/

Smith argues that ... Al-Masry (2003) sees X as ...	Similarly, Jones (2013) asserts that ... Likewise, Wang (2012) holds the view that ...

Some writers (e.g. Smith, 2002) have attempted to draw fine distinctions between ... Some authors have mainly been interested in questions concerning X and Y (Smith, 2001; Jones ... Much of the available literature on X deals with the question of ...	Others (see Jones, 2003; Brown, 2004) question the usefulness of ... Others have highlighted the relevance of ... But Smith (2008) is much more concerned with ...

Zhao (2002) notes that ... Smith (2013) found that X accounted for 30% of Y.	However, Jennings' (2010) study of Y found no link between ... Other researchers, however, who have looked at X, have found ... Jones (2010), for example, ...

Some ways of introducing quotations

Summarising the review or parts of the review

Language Tips

- Subject-verb agreement

Single noun	Plural noun + I/You
It is/was/has/uses … The approach uses …	They are/were/have/use … The approaches use … **I / You use** …

- American Eng vs British Eng (British Council, n.d.; Oxford Dictionaries, 2017)

	American English	British English
Usage	Major journals, IEEE	Preferred by Chalmers
Quotation marks	“ ” *but* “a ‘smart’ design”	‘ ’ *but* ‘a “smart” design’
-ter, -tre	center, theater	centre, theatre
-or, -our	favor, neighbor	favour, neighbour
-ze / -se; -se / -ce	organize, analyze organization; defense	organise, analyse (also with z) organisation; defence
-**gue** / -m**me** / -**ll**	dialog, program, fueled	dialogue, programme, fuelled

GÖTEBORGS UNIVERSITET

Peer Groupings (HT18) (see Ping Pong)

- Give the other group your term paper draft no later than **Monday, Dec. 17**.
  - Provide 1-3 questions to get feedback on
- Format is optional: PDF via e-mail or printed paper?
- Read the other group's draft before the workshop

	versus	
1	Hardware/software codesign (Chhapanimohan + Xu)	Memory considerations for low power systems
2	EDA for reconfigurable computing	Hardware/software codesign (Ruiz García + Speiser + Han)
3	EDA for signal and power integrity solutions	Scaling and design for manufacturability (DFM)
4	Adaptive circuits and systems	SoC voltage regulation
5	Design for test	Low-power digital circuit implementation

GÖTEBORGS UNIVERSITET

Instructions for Peers

5W+1H

- When reading, take note of *the authors' questions/concerns*, review the *assignment requirements (assessment criteria)*, focus on *the content and structure*, and mark both *strengths and weaknesses*

  (read the text first for the main idea, and then read it again*N for details)

  - □ Is the main idea/purpose clear?
  - □ Is the issue presented in a way that interests the reader?
  - □ Is the information presented logically?
  - □ Are all the elements in the right place?
  - □ Is each paragraph unified? Are there irrelevant details?
  - □ Should more definitions, examples, clarifications, evidence or references be provided?
  - □ Is there unnecessary repetition?
  - □ What would you like to know more about?
- Underline places that are unclear and mark places where you have questions

*Do not focus primarily on grammar, but you can mark places where the language makes it difficult for you to understand the meaning

Resources

- Academic Phrasebank
- Chalmers Writing Guide
- Chalmers Writing Centre – book a session with a writing tutor to get feedback! It's free!

References (APA reference style)

Arnadaut, M. L., & Barrett, M. E. (1990). *Paragraph Development – A Guide for Students of English* (2nd ed.). New Jersey: Prentice Hall Regents.

Bean, J.C. (2011). *Engaging Ideas: the professor's guide to integrating writing, critical thinking, and active learning in the classroom* (2nd ed.). San Francisco, CA: Jossey-Bass.

Chandler, D, & Munday, R. (2016). Reader-oriented. In *A Dictionary of Media and Communication* (2nd ed.). Oxford University Press.

Chandler, D, & Munday, R. (2016). Writer-oriented. In *A Dictionary of Media and Communication* (2nd ed.). Oxford University Press.

IEEE. (2016). *IEEE Editorial Style Manual*. New Jersey: IEEE Periodicals.

Huckin, T. N., & Olsen, L. A. (1991). *Technical Writing and Professional Communication for Nonnative Speakers of English* (2nd ed.). McGraw-Hill.

Jahlmar, J. (2016). *Academic Writing and Reading* [PowerPoint slides]. Gothenburg: University of Gothenburg.

Larsson-Edfors, P. (2017). Quick Start Guide for LATEX [PDF]. Gothenburg: Chalmers University of Technology.

Nordquist, R. (2017, March 26). *Writer-Based Prose.* Retrieved November 1, 2017, from https://www.thoughtco.com/writer-based-prose-1692510

Neufeld, J.K. (1987). A Handbook for Technical Communication. New Jersey: Prentice-Hall, Inc.

Swales, J. M., & Feak, C. A. B. (1994). *Academic Writing for Graduate Students*. University of Michigan.

Swales, J. M., & Feak, C. A. B. (2012). *Academic Writing for Graduate Students* (3rd ed.). University of Michigan.

References (APA reference style)

University of Bath. (2017). *IEEE Referencing Style Sheet*. Retrieved November 23, 2017, from www.bath.ac.uk/publications/library-guides-to-citing-referencing/attachments/ieee-style-guide.pdf

University of North Carolina at Chapel Hill. (2017). *Transitions (ESL).* Retrieved November 23, 2017, from http://writingcenter.unc.edu/tips-and-tools/transitions-esl/

University of Technology Sydney. (n.d.). *Reporting Verbs*. Retrieved November 23, 2017, from https://www.uts.edu.au/current-students/support/helps/self-help-resources/grammar/reporting-verbs

University of Wisconsin. (n.d.). *Academic Misconduct Guide for Students*. Retrieved August 22, 2017, from http://uwc.edu/students/handbook-policies/academic-misconduct-guide-students

Weston, A. (2000). *A Rulebook for Arguments* (3rd ed.). Indianapolis: Hackett Publishing Company.

Writing for the United Nations. (2007). *V. Sentence and paragraph development.* Retrieved November 30, 2017, from http://dd.dgacm.org/editorialmanual/training/lessons/link_d.htm

Useful Resources:

Academic Phrasebank

Chalmers Writing Guide

Chalmers Writing Centre – book a session with a writing tutor to get feedback! It's free!

GÖTEBORGS UNIVERSITET

Thank you!

anne.hsu.nilsson@gu.se

www.ask.gu.se