

1 NUS Libraries Online Tutorials

Types of documents

- Thesis & Dissertations, conference proceedings, journal & news articles, patents
- Review articles (good for summarizing recent developments/if u're new to the topic), bibliographies, books

Search in multiple platform to avoid info from falling through the crack

NUS Guides:

- **Subject guides:** guide avail to NUS community for specific subject areas [\[Link\]](#)
- **Other guides:** APA Citation Style, Zotero, patents, how to find free online content! [\[Link\]](#)

1.1 Search strategies

Challenges in searching:

- may miss important literature
- how to find the right keywords?
- not specific enough
- irrelevant papers
- publications not recent

How to search?:

1. Identify the keywords
2. Add search operators
 - OR: eg COVID19 OR coronavirus
 - *: wildcard eg COVID* → COVID19/COVID-19/COVID virus* → viruses/virus (singular/plural)
 - AND
 - " " search for EXACT phrases
3. Refine the search statement
 - look at the search results and articles
 - are there new useful keywords/synonyms?
 - are there any irrelevant articles? → remove those noise keywords

1.2 Where to search?

FindMore

- Books and E-resources ⇒ View more
- Sort by relevance/date/author
- **Refine your search**
 - Content type (journal article etc.)
 - Publication date (1,3,5 years etc.)
- View abstract/summary to not waste time reading article
- Colourful doughnut: usage of article
- **Cites/Cited by:** show a list of references which have been referred to by the particular publication
- **Advanced search:** search by discipline etc.
- **Save search:** allows users to save search

Web of Science

- Peer reviewed journals!
- NUS Libraries Portal → Databases → Web of Science
- Filter by:
 - Publication years
 - Document type (**[IMPT]** NO REVIEW ARTICLES)
 - Sort: by **number of citations, relevance**

- Read abstract
- **Citations**
 - Cited by
 - Cited papers
- Find it! @ NUS Library
- Analyze results
 - Discover insights on areas as well as authors
- History

Factiva

- International news database produced by Dow Jones
- Access from NUS Libraries Portal

1.3 A.R.T Evaluation Criteria

- Authoritative
 - Who is the author(s)?
 - What are the author(s) credentials or organization affiliations?
 - Has the author(s) published widely? Is the author an established expert in the field?
 - Is the information from original and reliable authentic sources? (Does the URL reveal anything about the source?)
 - Is there contact information, such as email address?
- Relevance
 - Is the information relevant to your research topic?
 - Who are the intended audience of the information?
 - Is the information at the appropriate level (i.e. not too elementary or overly advanced for your needs)?
- Timely
 - Is the information updated?
 - When was the information published?
 - Is the information up to date for the topic?
 - When was the information last updated or revised?

2 Week 2

2.1 Tutorial 2.1

Current problems with scientific communication

- Current media and its audience value speed and ease of digestion of information over quality and reliability
 - Lack of transparency, people don't know what's happening as media leave out limitations and caveats, as well as scientific methodology due to journalistic constraints
- Exaggerating/inflating information to generate more clicks, can be misused or exploited by media/authority
- Lack of respect from the general public towards the scientific community
 - The uncertain nature of science → contradictory headlines/claims, people don't know what's happening
- Difference in views (Lack of scientific literacy) between the layman and the scientist (e.g. links between vac-

cination and autism, does man contribute to global warming)

- Difference in view regarding contribution of science towards society → affects public policy and scientific progress
- The public are generally intimidated by scientific jargons and abstract concepts
- Lack of scientific publications that aim to popularize science to the masses (at least in SG)

Aims of scientific communication

- Educate public on current scientific developments and its relevance to society
 - Obligation to be transparent regarding science work as science uses large amounts of resources
- Spark meaningful debates and discussion
- Increase interest in science and allow people to make more informed decisions as well as political decisions
- Fusion of public and scientific values (general public have more scientific values such as accuracy and reproducibility etc.)

Why is scientific communication useful for scientists?

- Allow scientists to discuss different ideas
 - especially scientists from different domains as even an expert in one area might be an amateur in other areas
- Realize the relevance and societal impact in their work
 - Clarify the aim of their work through writing
- A reflection of their knowledge and how much they have learnt from their studies
- Wider social perspective
 - Thinking from general public perspective
 - Deal with different perspectives and learn how to explain abstract concepts to the layman

Color and Clarity: purpose of scientific communication!

Some strategies (Talia Gershon)

- different audience? get a sense of audience's prior knowledge by asking questions
- everyday object (noise cancelling headphones)
- how does this affect them (significance) on personal level
- Storytelling (make this relatable to them [hook])

2.2 Tutorial 2.2

How are papers organized?

- Title (important **keywords**) → abstract (summary)
- Introduction (what was the problem? what was the reason for the research? what have previous studies done? what are the hypotheses?)
- Methods (how readers can replicate the research [procedures/methodology, observations/data])
- Results (how does it *contribute* to the body of sci knowledge?)
- Discussion/conclusions
- Acknowledgements → references

Start by asking **IMRAD**

- **Intro:** what was the question? why is it Important
- **Methods:** how did the research try to answer it / solve the problem?
- **Results:** what did they find?
- **And Discussion:** what do the results mean? How does this contribute to the body of scientific knowledge

How to read a scientific paper?

- **Skim** the article without taking notes (big picture)
- **Re-read** especially *results* and *methods*
Try to interpret the data before reading explanations
- **Ask** questions
 - What problems does the study address?
 - Why is it important?
 - Is the method good?
 - Are the findings supported by evidence/other work in the field?
 - Is the study repeatable? How big is the sample size? Is this representative of the larger population?
 - What variables were held constant?
- **Write** a summary

Other useful tips

- Draw inferences (rely on background knowledge)
- look for words (unexpected, in contrast to previous work, hypothesize, suggest) and main points
- take notes in own words (summary) and develop a template

Other difficulties in reading papers

- Depends on the writing skills of the scientists involved
- Sometimes describes only the 'what' (methods, results), not the 'why'
- Paper has no clear structure
- Description of experiment is ambiguous
- Authors refer back to previous papers
- Authors firmly believe in their particular model, not open to criticisms
- Authors overstate the importance of their findings

Criteria for news article

- Trivial assumptions?
- Generalizations? or can it only be applied to specific areas under certain circumstances?
- Specific fields only? or for general public?

3 Week 3

3.1 Tutorial 3.1

Strategies (important for reflection)

- **Unexpectedness** Belief turned upside down (mind-blown), example would be genes utilising humans in Dawkins chapter
- **Possibility:** possible to be used for more application
- **Potential/Effect/Impact:** Significance
- Functional recontextualization - use function without much details (simplification)
 - Not talking about what it is but about what it does
- Storytelling (plot, character that you can relate to)

- Descriptive (5 senses that you can be fully immersed in)
- Conversational tone (actually, of course,)
- Personal pronouns (I, we, you)
 - 'I' used to indicate level of expertise to separate you and I
- Analogy/metaphors
- Deontological appeal
 - add an air of mystery/intrigue

3.2 Tutorial 3.2

Headlines/leads:

- move 1: intro key findings
- move 2: highlight/describe significance/impact concrete examples/impact ⇒ research not just for the sake of science, but can be useful for the layman
- Combat popular perceptions regarding controversial stuff

some more strategies:

- Definitions (using brackets to explain the word/term)
- Analogy (metaphor is more like something ... is ...) Don't use unfamiliar concept to explain another unfamiliar concept (e.g. winter skid tyres vs olfactory bulbs)
- Descriptions (explaining process/mechanism/concept)

Areas of evaluation for DEONTOLOGICAL APPEAL

- Unexpectedness (mindblowing stuff)
- Possibility (do the results have potential impacts in multiple domains in the future?)

4 Week 4

4.1 Tutorial 4.1

Prime numbers Sautoy

- Humanize mathematicians through narrative story
- Effect on readers: sense of betrayal through plot twists (April fool prank)
- Writing style: Narrative
- **Teleological appeal:**
 - **APPLICATION/BENEFITS FOR THE READERS**
 - but might not be the best thing?

4.2 Tutorial 4.2

Cicada shit

- Introduce the key finding
- Significance: "First mathematical treatment", "... to solve the problem of .."
- **RATIONALE FOR DOING THE RESEARCH:** nice move
 - **overcoming current limitations**
 - **Addressing research gap** (gap in the literature/missing info/explanation)
- **DIRECT QUOTE:** to ↑ credibility
 - Author
 - Credentials (job/specialty/institute/any awards/accolades)

- Conversational/more personable
- can be obtained from other news articles/past interview videos (use told)

- **BACKGROUND INTRO:** need to refer to other research/news articles for background knowledge and cite them!

▪ NON-TECHNICAL TERMS

- **EXEMPLIFICATION:** giving specific examples
 - Examples must also be understood by majority of readers
 - e.g. everyday objects

▪ COHESIVE DEVICE

- Synonyms: using different names for the same thing to reduce repetition
- Transition words: Although, However
- Demonstrative pronouns: this/that ⇒ refer to complex concepts that have been explained beforehand

▪ Coherence vs Cohesion

- coherence: ensure logical flow and understandability
- cohesion: all the little things come together to tell a whole story

▪ Hedging:

- Acknowledging limitations (there are assumptions)
- Opening avenues for future research
- alternative results

5 Week 5

5.1 Tutorial 5.1

Hungry Study

- Hunger ⇒ anyone can relate ⇒ relatable
- Move 6: introduced methods & findings
 - only included part of methodology that was relevant to understanding key finding
 - easy to understand
- Move: introduce key findings
- Tries to relate to readers because being 'hangry' is something that one has experienced before
 - What happens to u also happen to alot of ppl
- **Evaluate the findings**
 - acknowledge limitations of research and also previous research WHILE emphasising the validity/reliability of research
 - * incremental nature of science
 - Opening up future directions for research (call to action????)
- Evaluative language: could, possibly etc
 - acknowledge limitations and assumptions
 - unethical research???? etc. unsound methodology?? but a peer-reviewed research paper should not have this kind of problem
- **Conversational language**
 - More conversational transition words (in the meantime, at the same time)
 - inclusive pronouns

- Katong Flower Shop, BYOP protein??, Central Narcotics Bureau, Yeo's,

5.2 Tutorial 5.2**6 Week 6****6.1 Tutorial 6.1****6.2 Tutorial 6.2****7 Week 7****7.1 Tutorial 7.1****7.2 Tutorial 7.2****8 Week 8****8.1 Tutorial 8.1****8.2 Tutorial 8.2****9 Week 9****9.1 Tutorial 9.1****9.2 Tutorial 9.2****10 Week 10****10.1 Tutorial 10.1****10.2 Tutorial 10.2****11 Week 11****11.1 Tutorial 11.1****11.2 Tutorial 11.2****12 Week 12****12.1 Tutorial 12.1****12.2 Tutorial 12.2**