

# 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! [\[Link\]](#)

## 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 vaccination 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

- **I**ntro: what was the question? why is it Important
- **M**ethods: how did the research try to answer it / solve the problem?
- **R**esults: what did they find?
- **A**nd **D**iscussion: 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

#### 3.2 Tutorial 3.2

### 4 Week 4

#### 4.1 Tutorial 4.1

#### 4.2 Tutorial 4.2

### 5 Week 5

#### 5.1 Tutorial 5.1

#### 5.2 Tutorial 5.2

### 6 Week 6

#### 6.1 Tutorial 6.1

#### 6.2 Tutorial 6.2