Scientific Writing in English
－英语科研论文写作－

MODULE 1
-Writing your First Draft
Editing your first draft-

Lecture 4: Friday 25.09.2015
(1.30-3.10pm/7-8.40pm)

Summary last Lectures

Before writing a manuscript:

* Forget everything your English teacher told you about *BEAUTIFUL* writing
* Start **reading** published papers with focus in **GRAMMAR**
* Start **writing** in English, 5 min a day

While Writing a manuscript:

* Write your results + discussion first
* Edit for clarity and precision AFTER, not while writing first draft
* Multitask at your peril!

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	Timeline
Module 1: The Master Plan **How to plan, write, and edit your first manuscript**	September
Module 2: The Magic Toolbox The Art of Academic Writing	October/ November
Module 3: The Land of Chinglish The 20+ most common mistakes and how to avoid them	November
Module 4: The Writer as Thinker The Analytical Frame of Mind – An Introduction	December
Module 5: The Scientist with Integrity The Art of avoiding Scientific Fraud	December

MODULE 1

PART 1: The Bigger Picture

PART 2: Getting Started

Part 3: Writing your first draft

Part 4: Editing your first draft

PART 3: Writing the First Draft

Before you start writing:

* Writing is part of your scientific inquiry
* Working on your writing is working on your thoughts
* Good writing alone is not sufficient – only meaningful results can be turned into meaningful writing (at least in the Experimental Sciences)
* Find yourself a quiet spot
* Be clear what journal to submit your work to
* Have a copy of the instructions to the author ready

PART 3: Writing the First Draft

1. Have you completed your research (experiments etc.)?
2. Are all main figures prepared?
3. Have you updated your literature review?
4. Have you collected all materials and methods?

-> Now its all about communication!

Communication ... the imparting or exchanging of information or news

PART 3: Writing the First Draft

5. Banned in academic writing:

* vague, atmospheric language,
* obscure terms,
* expressions of emotional feelings,
* hear-say, rumors and alike
* idiomatic expressions
* informal language

To achieve:

Precision
Logic
Accuracy
Flow

of your ideas!

PART 3: Writing the First Draft

6. what to use: Pen & paper, or keyboard & screen?

* really a question of how to minimize the myriads of distractions around you
* p&p have no boot-up time, no spell-checking, no wechat, no QQ option!
* p&p allows you to go to places where no wifi can ever reach you, and no shortage of power affect your creative flows

PART 3: WRITING THE FIRST DRAFT

6. Order of Publishing versus Writing

* usually, a paper PUBLISHED in this sequence:

Title & Abstract
Introduction
Methods
Results and Discussion

? Social science articles? depending on research area?

PART 3: WRITING THE FIRST DRAFT

6. Order of Publishing versus Writing

* (I.C. Bruce): WRITING better in RaDMI sequence

Results and Discussion
Methods
Introduction
(Title+ Abstract)

CHAPTER 2: WRITING THE FIRST DRAFT

6. Order of Publishing versus Writing

* I suggest using the MRaDIAT sequence:

Methods
(Literature Review)
(Figures and Legends)
Results and Discussion
Introduction
Abstract
Title

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

1. Methods: while doing experiments

(Literature review: beginning of your studies)

(Figures and Legends: upon completion of your experiments)

2. Results and Discussion: on the basis of your figures and tables

3.Introduction

4. Abstract

5. Title

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Methods: How did you do your experiments/research?

* best prepared while doing your experiments

* convert your lab protocols into proper sentences

* write down ALL details about instruments used

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Methods: How did you do your experiments/research?

* prepare tables with details of all the materials and reagents used

* in my opinion, there should be a shared file within the same lab that contains all methods written up in both protocol and manuscript form

-> add all changes according to your own procedures

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Figures and Legends

* upon completion of your experiments

* basis of your results+discussion draft -> logic!

* prepare a template for your figures while analyzing experimental data

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Figures and Legends

* prepare in such way that your main message is highlighted

* remember: ppt figures different format to paper figures
-> consult instruction to authors!

* short introduction into figure preparation later (upon request)

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Results & Discussion – What did you find, and what does it mean?

* written on the basis of your figures and tables

* ensure figures in a logical order (not always the same as order of experiments)

* separated in most journals (unfortunately)

* first draft together (sensibly)

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Results & Discussion – What did you find, and what does it mean?

* start with Fig. 1:

1. what is the main message? draft Figure title (conclusion or description style)

2. describe what the reader is looking at
- histogram, plot, recording...

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

3. draw attention to the important facts shown in the figure
- increase or decrease? absent of present? positive or negative?

4. start writing down all ideas popping up in your brain NOW!!!

- A increased because.../B is absent due to.../C is brighter than D...

-> repeat for each figure
-> treat each figure as a mini-unit

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Introduction – Why did you do your study?

* the 'white lie' phenomenon

Why did you do this project?

a) because my supervisor told me so
b) because none of the other projects worked out
c) because I want to win the Lasker price

-> your readers NOT interested in this, are they?!

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Introduction – Why did you do your study?

* what is the current state of knowledge in your field?
-> literature review
-> idea: to use instead of proposal

* what previous studies are your experiments based on?

CHAPTER 2: WRITING THE FIRST DRAFT

6. MRaDIAT

Abstract – How to say it 'in a nutshell', and still get the reader excited about your results

How to summarize your findings and present them in the context of the existing knowledge framework

* most difficult part, especially because of word limit imposed

* keep to the end, because
- your draft will need to be edited first, probably many times
- the focus of your manuscript might change radically, depending on how many new/crazy ideas your supervisor has left!

SUMMARY – FIRST DRAFT

* plan ahead: literature review and figures + legends

* find a space away from all sources of distraction

* do not worry about spelling, grammar, elegance

SUMMARY – FIRST DRAFT

* write in MRaDIAT sequence:

- describe each method used to obtain results (manuscript format!)

- use your pre-written literature review to provide background knowledge

- describe each result and discuss its meaning, one result at a time

PART 4: EDITING THE FIRST DRAFT

* WRITING first draft focused on

  information, NOT language or organization

* EDITING first draft all about

  logic, clarity, order, precision
  (length: journal-dependent)

PART 4: EDITING THE FIRST DRAFT

1. Results – What did you find?

* cut+paste all statements in your first draft not DIRECTLY describing your results into a separate discussion section

* DESCRIBE only, do not INTERPRET
(although: end of each section usually has a line: 'Together, these results suggest/indicate...A,B,C'; not a real discussion, just a summary without referral to the wider literature)

* do NOT repeat information found in tables, especially long rows of numbers

PART 4: EDITING THE FIRST DRAFT

2. Discussion – What does it all mean?

* shortly summarize your main findings – do NOT repeat describing every single result, including referring to specific Figures!

* do NOT repeat introduction!

PART 4: EDITING THE FIRST DRAFT

2. Discussion – What does it all mean?

* relate results to what is known from the literature

* interpret results according to your hypothesis (introduction)

* summarize the minor findings

* explain inconsistencies: between results, and with literature

* self-criticism? can work both ways, but adds to credibility of your work

PART 4: EDITING THE FIRST DRAFT

Methods – how did you do it?

* sequence, sequence, sequence!

* common sentence: '...was performed as described earlier (Ref). In brief...'

* include all info on model system, participants, animals, conditions, modifications to standard protocols, suppliers of reagents, manufacturers

-> other scientists should be able to repeat your experiments according to your instructions!

PART 4: EDITING THE FIRST DRAFT

Methods – how did you do it?

* important: Ethics approval BEFORE start of experiments!!! (more on ethics later)

* statistics: reviewers pay much attention to this, so should YOU!

* use standard phrases commonly used in your field

* pay attention to rules for units, i.e. 50 mM solution, but 37°C

PART 4: EDITING THE FIRST DRAFT

Introduction – Why did you do it?

* literature review good starting point – document in progress!

* however: introduction NOT a review of everything since creation of the term 'Environmental Sciences'!

* focus on the background information required to understand why your study is important, and what was known before your study, and what was not known yet

PART 4: EDITING THE FIRST DRAFT

Introduction – Why did you do it?

* bone of contention: repeat of your results at the end of the introduction
  - some journals do NOT allow it!
  - some journals request it!

-> solution? Instruction for authors!

* final paragraph: 'Therefore, we set out to...'
  'Thus, the aim of this study was...'

PART 4: EDITING THE FIRST DRAFT

Introduction – Why did you do it?

* general comment:

'WE!', not 'I'!

(unless you are the sole author of the manuscript)

PART 4: EDITING THE FIRST DRAFT

Title & Abstract: My findings in a nutshell

* this is what most people will ever look at!

* challenge: to be both precise AND concise

-> solution: PRACTISE, PRACTISE, PRACTISE!!!

Title: what are the keywords? delete all else if possible

PART 4: EDITING THE FIRST DRAFT

Abstract: My findings in a nutshell

* mini paper – same structure: IMRAD

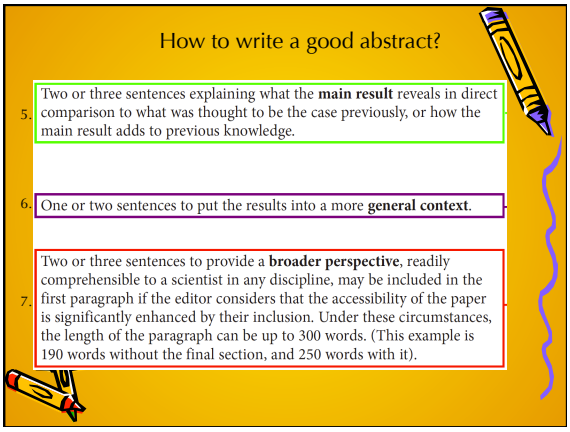
Why did you do this study?

(How did you do this study?)
What did you find?

What do the findings mean?

How to write a good abstract?
A bit more detail (Nature guidelines)

1. One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.
2. Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.
3. One sentence clearly stating the **general problem** being addressed by this particular study.
4. One sentence summarizing the main result (with the words "**here we show**" or their equivalent).


How to write a good abstract?
5. Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.
6. One or two sentences to put the results into a more **general context**.
7. Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline, may be included in the first paragraph if the editor considers that the accessibility of the paper is significantly enhanced by their inclusion. Under these circumstances, the length of the paragraph can be up to 300 words. (This example is 190 words without the final section, and 250 words with it).