Presentation techniques & scientific writing

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OUC

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Overview (Sunday, 25th September - Thursday, 29th September 2016)

1. Introduction in presenting science

2. Rules on how to write

3. Guidelines on how to edit

4. Peer-review process

5. Rules and recommendations, summary and final examn

The Rules of the Game

Lectures & Tutorial:
Sunday 25th to 29th September 2016

(Laoshan Campus, R. 3205, Tuesday: R. 3506)

Lectures: 1:30-4:30 p.m.

Tutorial: 6:00-9:00 p.m.
Group work, discussion in the tutorial, working on papers and oral presentations

Examn:
Wednesday 28th September 2016: oral/written

II. Rules: How to write the paper

II. How to write the paper

15. Defining paper objectives

16. Structuring the manuscript

17. Manuscript title

18. Keywords

19. The Introduction

20. The methods section

21. The results section

22. The discussion section

23. The conclusion

24. The acknowledgements

25. The references section

26. The appendix

27. Figures, tables & graphs

28. The abstract

Why defining objectives?

- without reader is lost

- paper will not be read or leaves bad impression

- helps reader to understand the paper

- assumption "reader will pick up the implicit intentions and objectives of a paper" is wrong

- most important & **first thing to do!**

- explicitely state the research question(s) that the paper is going to answer

Why papers are rejected?

- not original/nothing new

- serious flaws in research design/methods

- out of scope/not relevant for journal

- do not communicate/message unclear

- other technical/procedural reasons

Guideline: Objectives

1. Start a new paragraph

2. Start with an explicit statement:
    -           "the objectives of this paper are …"
    -           "This paper aims at …"

3. Use bullets or structure objectives, e.g.:
            "This paper has the following objectives:

    a,   analyse the reasons for housing decline in X

    b,   analyse the public's awareness of this process

    c,   suggest measures to change housing decline"

Guideline: Objectives

4. Objectives should have a clear focus

    -           rather narrow than broad

    -           better answer 1 question well than 3 superfically

Guideline: Objectives

5. Answer the following questions:

- What questions does your paper answer?

- What is the knowledge gay your paper fills?

- One or more questions?

- What is the overall objective?

- What are sub-objectives?

  Write objectives in one separate paragraph

Working title

Once the objectives are clear, define a working title for the paper that reflects the paper objectives

Exercise12:

Use the writing guidelines to formulate objectives for your paper.

16. Structuring the manuscript

Purpose of structure

- helpful for writing

- reflects & supports the paper objectives

- informs reader about the content of each section

- helps to understand the manuscript flow

- supports selective reading

- paper ≠ novel

- you look for information, not for entertainment

Purpose of structure

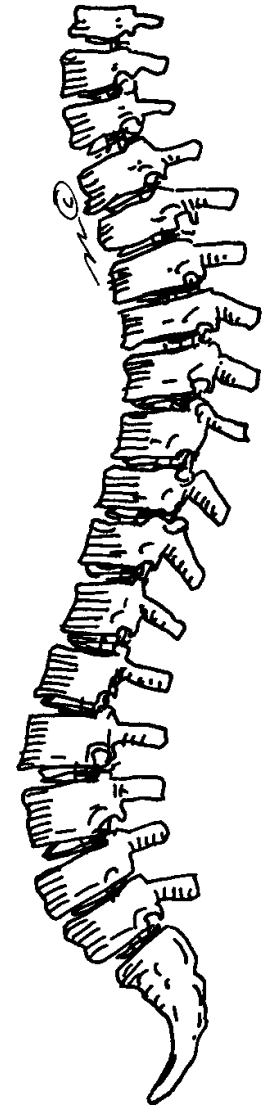The structure is the backbone of your manuscript

Introduction

Methods

Results

Discussion

Conclusion

How to structure?

- logic, clarity

- many different formats

- different for paper types

- different conventions in academic communities

- but general rules available

Structural elements

Title	Discussion
Headings + paragraphs	Conclusion
Keywords	Acknowledgements
Abstract	References
Introduction	Appendix
Methods	Figures
Results	Tables

Overall structure

INDEX	←	All papers
Main section	←	**Different per paper type!**
REF	←	All papers
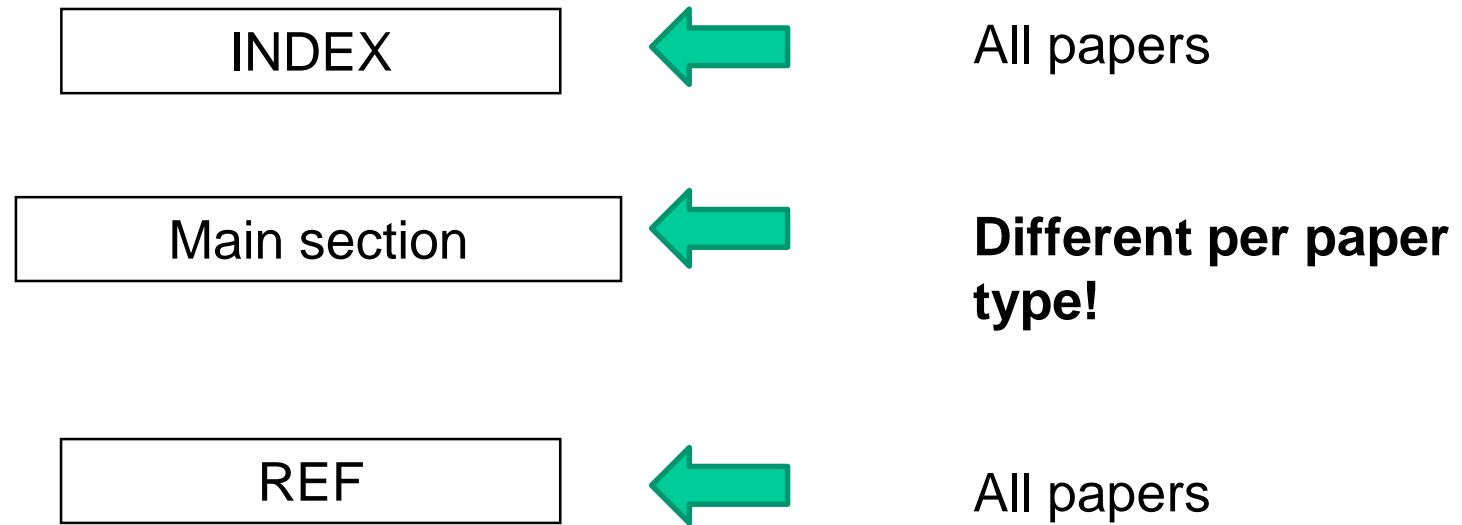
INDEX section

includes:

-            title

-            abstract

-            keywords

-            author information

- used for indexing the manuscript

REF section

Includes:

- acknowledgements

- author statement

- references/bibliography

- appendix

Manuscript structure

Research paper

Review paper

INDEX	INDEX

IMRAD	ILRAD

REF	REF

IMRAD

I	= Introduction
M	= Methods
R	= Results
A	= And
D	= Discussion (+ Conclusion

IMRAD – research paper

- most papers follow this format

- other structures are possible, but IMRAD is helpful for beginners

ILRAD

I	= Introduction
L	= Literature
R	= Review
A	= And
D	= Discussion (+ Conclusion

ILRAD – review paper

- Structure is most important for review papers

- No fix format

- Literature review on paper subject is main part of paper (subdivided in sub sections)

Structure & acad. domains

Structure	Academic domain
IMRAD	• natural sciences • engineering • medicine • social sciences (quantivative + qualitative) • less applicable in humanities
ILRAD	• natural sciences • engineering • medicine • social sciences (quantivative + qualitative) • applicable in humanities

Structure & paper type

Structure	Paper type
IMRAD	• Research paper • Method paper • Short communication • Research note
ILRAD	• Review paper • Conceptual paper • Theory paper

Other structures

Paper structure is less defined for:

- paper in humanities

- papers in interpretative social sciences

- discussion papers

➡ more freedom, structure varies a lot from subject, discipline and research topic

➡ structure must be altered to accommodate the particular data and finding

Qualitative papers

Proposed structure for qualitative social sciences:

- Introduction

- Methodology

- Profile of sample

- Theoretical framework

- Results

- Discussion/Implications

Humanities papers

Key differences to IMRAD and social sciences structures:

- discussion occurs continuously, not just at the end of the paper

- piece of evidence is presented, interpreted, and documented how this supports the overall argument

- this process is repeated until the argument is convincing

Humanities papers

Proposed structure:

- Introduction (incl. review of scholarly debate + statement of author's argument)

- Main body:

  - Analysis 1 (What was discovered, found concluded)

  - Analysis 2 (What was discovered, found concluded)

  - Analysis 3 (What was discovered, found concluded)

- Summary of findings (how everything relates)

- Conclusion

Headings

- provide clear identifier for manuscript sections

- don't be creative but informative

- are kind of skeleton

- good selection of headings, clearly structured, is enough for reader to screen a paper

Table of contents

- usually not published

- only included in very long papers (> 50 pp.)

- helpful tool for the writing process

- provides overview on skeleton

Guidelines: Structure

- define clear & logic structure at the beginning

- identify elements needed for your paper type

- define appropriate headings

- compile a table of content

Exercise14:

Restructure or suggest sections for your own manuscript.

17. Manuscript title

Why is the title important?

- most frequently read part of a paper

- most readers encounter a manuscript by reading the title

- for each person reading the entire paper 500-1,000 read only the title

- whether a paper is read depends on wether the title gives enough information to attract the readers' attention

Purpose

- to describe adequately the content of a manuscript with the fewest possible words

- to index the published paper

Exercise15:

Identify good and less helpful titles from the following list. Explain your judgement.

- "Give me five minutes", Ergonomics in Design 15 (1), 32.

- "Efficiency analysis of university departments: An empirical study", Omega 36 (4), 653-664.

- "Optimizing counter-terror operations: Should one fight fire with "fire" or "water"?" Computers and Operations Research, 35 (6), 1874-1885.

- "Change in soil properties and the soil microbial community following land spread of olive mill wastewater affects olive trees key physiological parameters and the abundance of arbuscular mycorrhizal fungi", Soil Biology and Biochemistry, 40, (1), 152-161.

- "ISO 14001 certification in brazil: motivations and benefits", journal of Cleaner Production, 16, (1), 87-94.

- "Heat tolerance in plants: An overview", Environmental and Experimental Botny, 61, (3), 199-223.

Title - include

- main keywords that reflect the content of the manuscript

- e.g. if the paper is on blackbirds, this should be clearly seen from the title

- title is the label, not a full grammatical sentence

- needs to be understandable when read in isolation

Title - avoid

- fancy/wordy description

- too general title (such as "Birds in Scandinavia")
- abbreviations in the title (only very common ones allowed)

- too long and complicated titles

- "waste words" (such as "a", "an", "the")

Giudelines: Title

Title should be:

- short

- informative

- include subject of your study (= main keyword)

- should tell what the paper is about

- if appropriate, specify paper type, e.g. review, discussion, method…

Exercise16:

Formulate a preliminary title for your own manuscript.

18. Keywords

What are keywords?

- single words or short phrases that characterize the content of a manuscript

- for each manuscript define 5-10 keywords

- used for indexing in databases

- readers use them to search for papers

What to avoid

- repeat keywords that appear in the title

- too general not too specific keywords

think of keywords that you would use to search your/similar papers

Guidelines: keywords

- identify 5-10 words that help to characterize your paper content

- use synonyms

- avoid duplication with title

- test your keywords in a keyword search/database

Exercise17:

Define keywords for your manuscript.

19. The introduction

Purpose

- to inform reader about subject of the paper

- to supply sufficient information on the motivation for and context of the study to understand and evaluate the results presented in the study

- if a problem is not understood, no one is interested in the solution

Purpose

- give "state of the art" – refers to key peer-reviewed literature in the field

- this includes relevant & recent papers that are published in the same journal

Include

a. **Background** – what is the problem?

b. **Motivation** – why is it important?

c. **State-of-the-art** – what has been done before?

d. **Knowledge gaps** – what is currently missing?

e. **Aims & objectives** – what is the paper doing?

f. **Definition**s – what unfamiliar terms does the paper use?

a, Background

- Give reader the context and background for your paper

- State the problem that you discuss

- Example: "Since 1950 there has been a decline in grave-mounds all over Europe."

b, Motivation

- Say why you are writing the paper

- State why the topic is important

- Example. "With this decline, significant cultural heritage has been lost. If the trend can't be reversed, by the year 2020, there will be only 3% of the original grave-mounds left".

c, State-of-the-art

What is the state-of-the-art?

- A concise overview over previously published international research that is relevant for your own paper.

- The "state-of-the-art" answers the following question:

  <u>What has been done in this field before?</u>

c, State-of-the-art

What is the state-of-the-art important?

- You demonstrate that you are aware of and built on other people's research findings

- If you don't know what others have done before – how can you contribute to the advancement of science in your field?

c, State-of-the-art

Example:

"Meyer et al. (1984) were the first to give a succinct overview, over the decline of grave-mounds. However, their study was limited to grave-mounds in Denmark. Gabler (1996), Marks (1999), and Frockner (2003) provided studies for Germany, the Netherlands and Norway respectively…"

d, Knowledge gaps

- After you have given the state-of-the-art, state the knowledge gap(s).

- This is what is still missing currently in this specific field of research.

  Example:
  "However up to now, nobody has provided an overview over the decline of grave-mounds all over Europe."

e, Objectives

- State the overall aim of your paper

- State more specific sub-objectives

- All objectives together add up to the overall aim

- Objectives can first be stated after the background, motivation, state-of-the-art, and knowledge gaps are clear

- Ideally, your objectives fill part of or all of the mentioned knowledge gaps

e, Objectives

Example:
"Therefore, it is our aim, to give a systematic overview over the decline of grave-mounds in different European countries. We do this by means of the following objectives:

- We give an overview over national projects, which have detected a decline in grave-mounds since 1950.

- We calculate the percentage of decline for each country

- We accumulate national percentages to provide a European overview.

- We present a map, in which we outline the degree of decline for different European regions."

f, Definitions

- Define main terms and concepts that you use in the paper if these are not commonly known

  Example – a paper entitled:
  "Applying functional classification theory to land use planning, using decision tables."

- Without definitions, readers will not be able to understand what paper is about!

f, Definitions

- Define familiar terms to avoid any ambiuities

- You can use definitions from other authors

  Examples:
  "We follow Blanchard (1997) in her definition of a grave-mound, as a grave-mound of earth and stores raised over a grave."

Introduction - avoid

- never forget to state your **objectives**

- never give impression that you **don't know** what has been done internationally in your subject area

- **do not hold back** important information in order to build up suspense, some readers will never read so far to discover your dramatic composition.

Guidelines: Introduction

Write down the following six headings:

1.   What is the background of the topic?

2.   Why is the topic important?

3.   What has been done already in the field?

4.   What knowledge is currently missing?

5.   What is my paper offering to fill this gap?

6.   Which terms do I need to define?

- Fill in 2-3 sentences below each heading

- Remove the headings

Exercise18:

Define the necessary elements that need to be part of the introduction of your own manuscript.
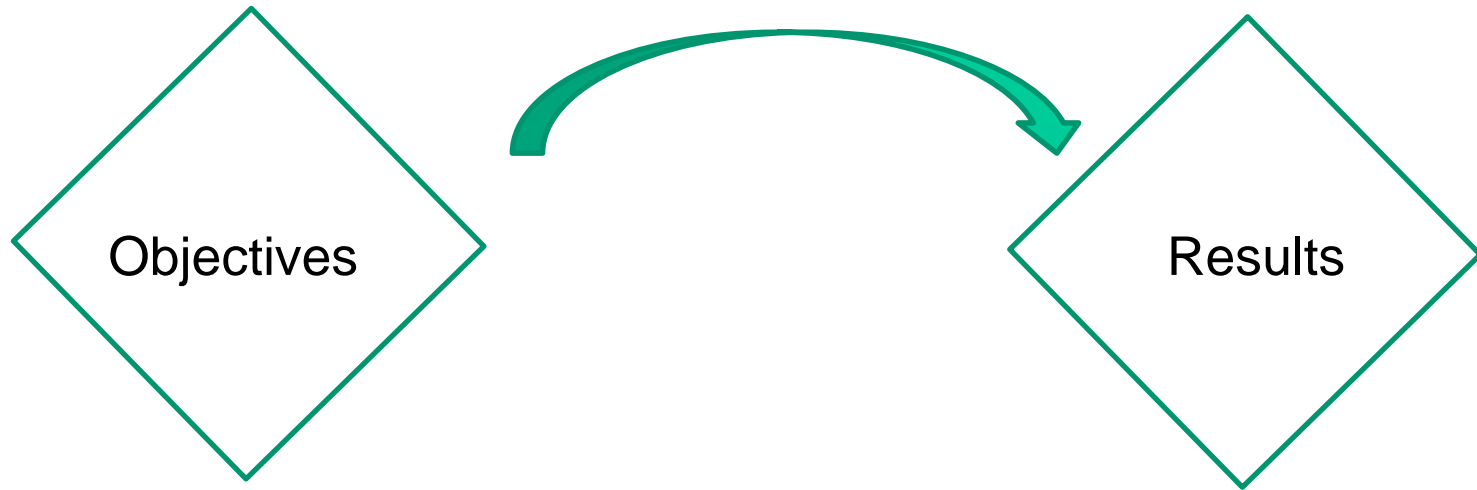Follow the guidelines and write few keywords under each of six headings.

- What is the problem/background?

- Why is it important?

- What has been done already in the field?

- What knowledge is currently missing?

- What is my paper offering to fill this gap?

- Which terms do I need to define?
- ***

20. The methods section

Purpose

Objectives → **Results**

Transfer of objectives into results

Purpose

- differentiate your research paper from fiction or novel writing

- explains experimental design of your study

- potential replicability is cornerstone of any scientific method

- validity of results can otherwise not be guaranteed

→ Main criteria for good science

Purpose

Provide enough detail so that:

- a colleague can replicate your study

- the reader can judge the appropriateness of your method

- a reviewer can assess the validity of your results

Methods & peer review

- referees have a very close look on methods

- all steps in research design must be understandable and reproducible

  any lack of clarity affects reliability of results

  → Leads to rejection or request for revision

Writing methods

- set up chronologically: report one step after the other

- use sub-headings to explain different steps of research design

Writing methods

- method new: describe everything you have done concisely and in detail

- method well-established: don't explain method (refer to literature), but explain in detail how you have carried it out

Writing methods

- e.g. if you have undertaken a quantitative survey

- don't describe what quantitative survey is (refer to literature)

- but: describe in detail how you have carried out the survey!

Exercise19:

Read the following method section. Is it helpful and informative?

Methodology:

In order to evaluate the impacts on N-surplus of agricultural practices a model has been developed. It can calculate scenarios in which different agricultural production strategies and levels of production generate different outputs of N-surplus. The model makes it easy to establish the connection between different assumption on production size, efficiencies, waste handling and the resulting amount of N-surplus. In this article, the model is used for assessing the impacts of manipulating the level of production, the area of agricultural land used of production, and the efficiencies at the different steps of production. Based on 9 future scenarios, some conclusion can be made regarding the viability of different strategies as e.g. the impacts achieved by reducing the area for agricultural production. Based on this, four broader paths are discussed which may be followed by Danish agriculture in the future.

(submitted, 2007)

Methods - avoid

- mixing up results with methods

- giving vague information, be as precise as possible

- any doubt about validity of your results – if there is anything that influences results, mention it

Guidelines: Methods

- describe what you have done in such a detail as needed so that it is replicable by a colleague

- follow chronological order

- use sub-headings to describe individual steps

- be as precise and concise as possible

- provide exact numbers where possible

Exercise20:
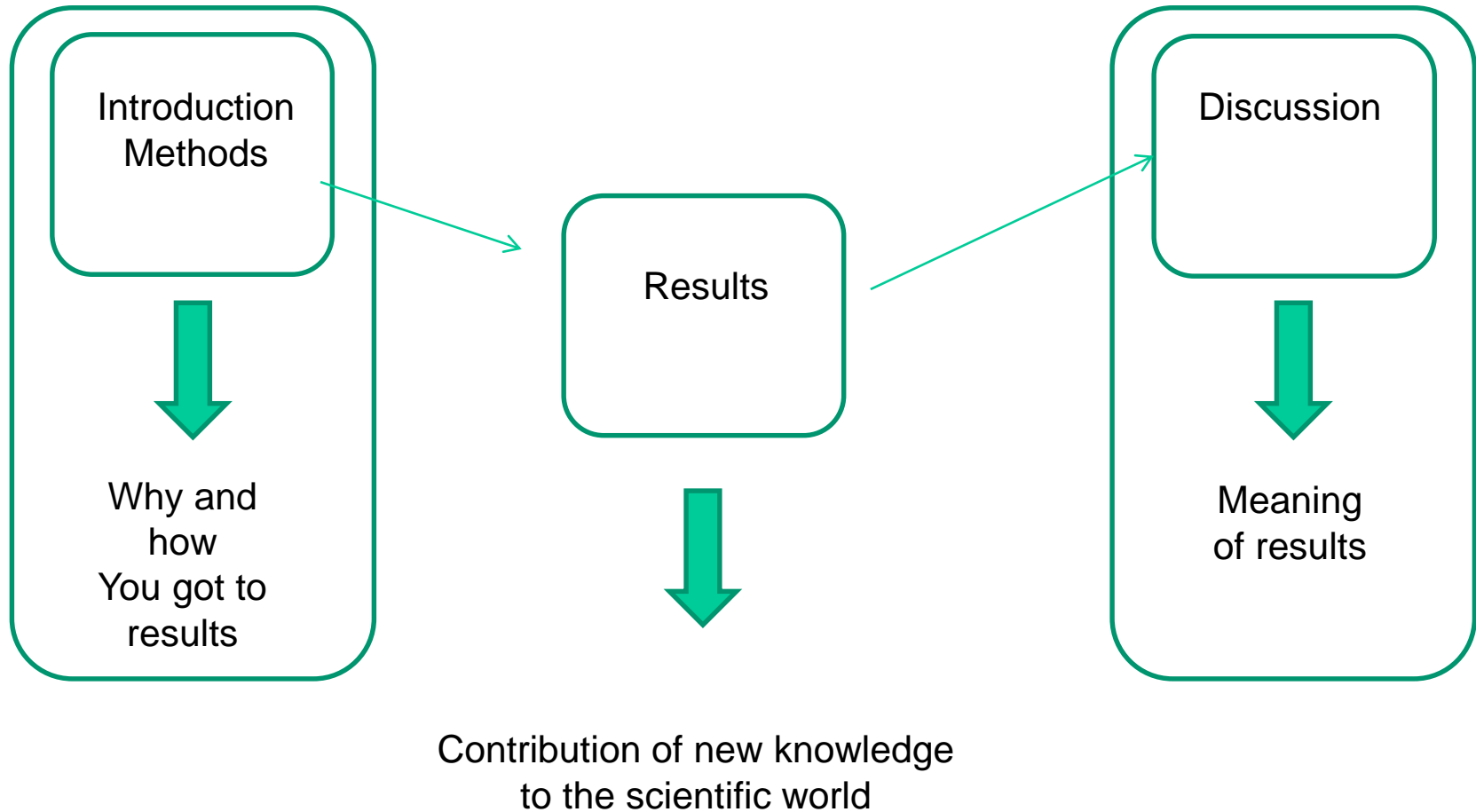
1. What were the methodological steps you have done?
Write down headings.

2. Describe each step with a few sentences.
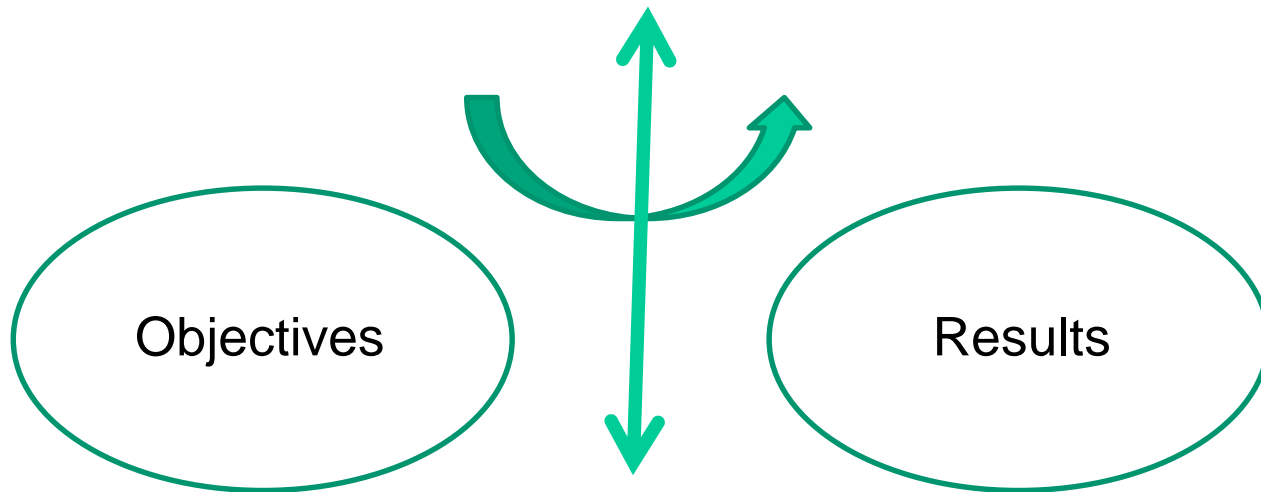See method guidelines.

21. The results section

Purpose

Writing results

Be consistent:

- Get back to your objectives

- What was promised there needs to be delivered here

Writing results

Present selected data:

- Select data that are representative rather than repetitive

- Do not give a full record of all your observations and data.

- Reduce and accumulate large amounts of data (e.g. full interview transcripts)

Writing results

Structure the results:

- Reflect about a suitable structure for the result section

- Ideally, follow your objectives, one by one

- Use headings and subheadings to make the structure explicit

Writing results

Style:

- Write sequentially

- Be short and precise

- Avoid verbosity

Writing results

Example:

A, we were totally taken aback by the fantastic results showing that 87% of inhabitants were familiar with "kerb-side recycling" in their communities."

B, "Eighty-seven percent of the respondents were familiar with "kerb-side recycling."
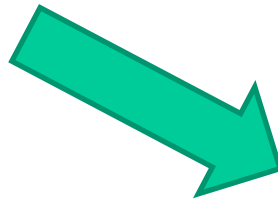
Writing results

Use figures and tables:

- to present data of any kind

- One figure/table can save a lot of text.

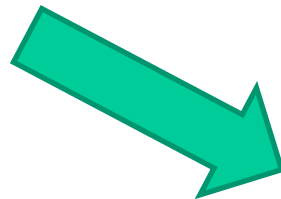- Do not repeat information in a table/figure and in the text

Results - avoid

Presenting any new methodological steps

methods
section

Discussing results

discussion
section

Guidelines: Results

1. Refer to objectives

2. Select those results from your data, which reflect the objectives

3. Structure the section, use headings and subheadings

4. Identify information that can be displayed in figures and tables

5. Fill in each heading, describe results short and precisely

6. Do not discuss results, do not present new methods

Exercise21:

Refer to your objectives. What main results do you expect according to your objectives?

Outline a structure for your result section. Follow the guidelines.
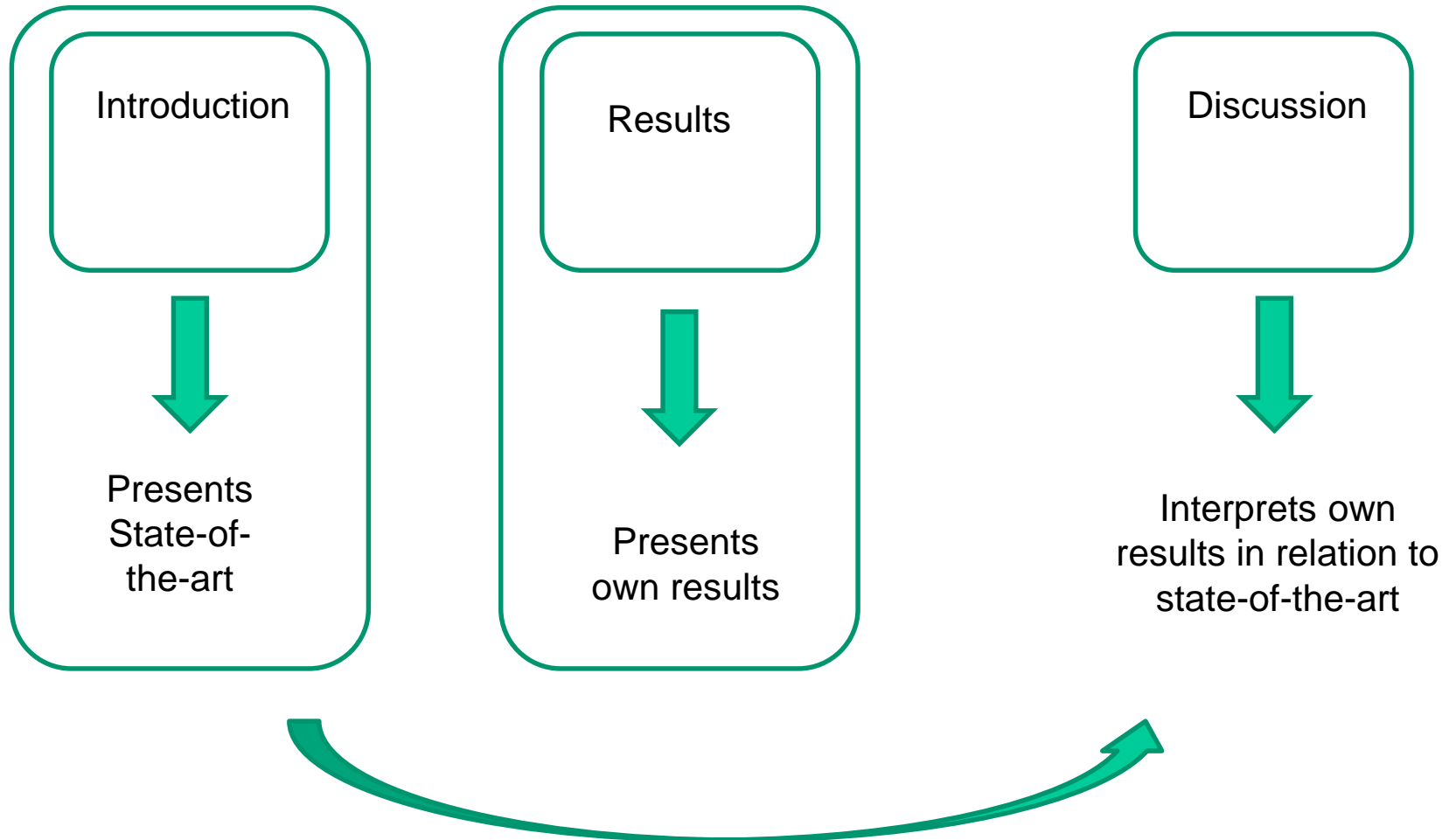
22. The discussion section

Purpose

- informs reader about the wider meaning and importance of the findings

- distance yourself from your own findings and present the bigger picture

- most important section

- but difficult to write

Purpose

Introduction	Results	Discussion
Presents State-of-the-art	Presents own results	Interprets own results in relation to state-of-the-art

Writing discussion

- More **freedom** to write, because it is an interpretation

- Needs to strike the right balance between:

  - being too anxious to state implications of findings and

  - drawing conclusions that are not substantiated by results

Writing discussion

- a good discussion section can only be written with sound knowledge of state-of-the-art

- ties back to the-state-of-the-art as given in introduction

Go through your paper and search systematically after the

following **5** aspects:

Writing discussion

1.   Principles, relationships, and generalizations that appear from the results

   Example: You included students from 30 universities, studying French and History in a survey testing their knowledge on major events in French History. Your results show that all Third-year students had significantly better knowledge of French History than First- and second-year students.
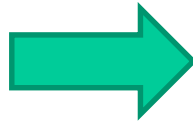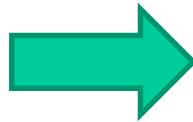
   Discuss generalizations

Writing discussion

2. An unexpected results, extreme observations or lacking correlations

   Example: In your introduction you stated the hypothesis that students studying History had better knowledge of French Revolution than students studying French. However, your results showed the opposite!
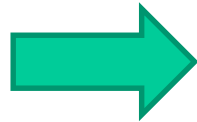
   ➡️ Discuss potential reasons!

Writing discussion

3. Critically assess your study design, your methods and any limitations in analysis or validity

    Example: You have only included undergraduate students and no post-graduate students in your study. This might have influenced your findings!

    Discuss potential limitations!
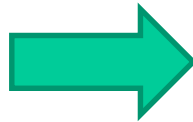
Writing discussion

4. Reflect about the relationship between your findings to previous findings in similar studies

   Example: Hussel (1999) found that History students had better knowledge of French History than French students. This is the opposite of your results. However Hussel only included PhD students!

   Discuss why your results might be different from that of other authors!

Writing discussion

5. Theoretical implications of your results and its practical application

   Example: Your results gave hard evidence that History students do not have sufficient knowledge of French History. Make suggestions to change the curriculum of history students to include more lectures of French History.
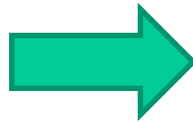
   ➡️ Make suggestions for the wider implications of your findings in theory and practice

Writing discussion

- have several points to discuss under each of the five aspects

- collect all your thoughts about potential interpretations of your study in a "material collection"

- systematize your collection

- identify strongest points and include these in the final discussion section

Discussion - avoid

- Do not reiterate your findings – make sure to discuss them

- Never restrict a discussion section to only discussing your own findings – this will lead to rejection. You must relate your findings to those of other authors

- Do not discuss any aspects that are not related to your findings

Discussion - avoid

- Never submit a manuscript without discussion section! Your results without interpretation are meaningless

306   4.   Results

307

308   text

309   text

310   text

311   text

312

313

314   5.   Conclusions

(submitted manuscript)

Guidelines: Discussion

Search your paper for the following aspects:

1.   What can be generalised from your results?

2.   What are unexpected results?

3.   What are methodological limitations?

4.   How do own results relate to other findings?

5.   What are theoretical/practical implications?

Guidelines: Discussion

- Collect several points for each aspect

- Systematize your collection (=draft discussion)

- Include strongest points in final discussion

- Use references (refer to state-of-the-art)

Exercise 22:

Look at the five aspects in the guidelines for setting up a discussion section. For each aspect, write down a few keywords that will later help you to built up your discussion section.

- What can be generalised from your results?

- What are unexpected results?

- What are methodological limitations?

- How do own results relate to other findings?

- What are theoretical/practical implications?

23. The conclusion

Purpose

- the third-most frequently read section

- presents in brief the main conclusions that can be drawn from the presented research

- includes main findings and their potential consequences

- can be combined with discussion section, but easier to use by others if separate section

Conclusion - avoid

- not a summary section where all parts of the manuscript are repeated

- avoid conclusions that are not based on evidence presented in the paper

- do not introduce new facts and avoid starting a new discussion

- avoid writing "more research is needed"

Conclusion in 2 min

- tell a colleague/friend in 2 minutes what the main message of your paper is

- what can be learned from your paper?

= your conclusion!

Guidelines: Conclusion

- Go through your results & discussion sections

- Collect the most important conclusions and their implications

- List them one by one, start with the most important (these are your draft conclusions)

Guidelines: Conclusion

- State your overall objective in one sentence again

- State your key message

- Write conclusions according to your list

- Should be understandable when read in isolation

- Give to a colleague to read and comment

Exercise 23:

Outline the most important conclusions of your study. Follow the conclusion guidelines.

24. The acknowledgements

Purpose

- to acknowledge all significant support that the author received in concluding the research and writing the paper

- can include data analysis, student support, research supervision, financial or other support

Acknowledgements

- optional section

- no influence on acceptance or rejection

- keep short

- always give credit for financial support

- ask people whether they agree to be acknowledged

Whom to acknowledge

- technicionsm assistants

- student help

- stakeholders

- access to data, information

- funding body, grant scheme

- anonymous referees

What to avoid

- acknowledging people without saying what their contribution was

- using professional, courtesy or academic titles

Example 1

"Acknowledgements

The author are grateful to the anonymous referees whose comments and suggestions significantly improved both clarity and precision of the paper."

Example 2

"Acknowledgements

This study was supported by grants from the Social Sciences Research Council of Canada (410-99-0203) and Fonds pour la formation de checheurs de l'aide a la recherche (99-ER-0506) from the province of Quebec, Canada. The author acknowledges the cooperation and help of Amer Al Roubai and the many research asstistants in data collection and analysis."

Exercise 24:

Do you want to acknowledge support of someone in your study?
Write down whom and why.

25. The references section

Why important?

- in peer-reviewed paper, readers should be able to access all publications quoted to verify the author's arguments and claims:

Supports:

- credibility

- validdty

- communication

References - avoid

- publications "in review", "submitted" or "in preparation".

- extensive use of non-English publications

- citing a publication you have not seen

- copying references from other manuscripts without having seen the original reference

- abbreviating journal names unless requested

- include references not used in the paper

Avoid "grey" literature

- unpublished material, data

- extended abstract

- conference proceedings

- theses

- reports

- working papers

- project proposals

- other secondary material

Avoid "grey" literature

Why?

= not peer-reviewed literature

= not subject to quality control

= not representing established knowledge

= often very limited accessiblitiy

Type of references

(A) References to established knowledge:

= peer-reviewed international research literature (journal papers and books)

(B) References to policy framework:

= policy documents, white papers, contract, plans, historical documents, law texts

(C) References to data sources:

= all type of data collections where data is taken from (data sets, statistical data, also URLs)

Avctive vs. Passive use

Passive use:

•   "… as previous results have shown (Miller, 2006)."

Active use:

•   "Miller (2006) has shown in her study … The results of Peterson (2007) confirm these results…"

Guidelines: references

Check **<u>before</u>** submission:

Are all references used in the text in the list of references (and vice-versa)?

are references complete & correctly formatted?

is grey literature avoided?

are most recent references included (past 5 years)

active use of references?

Guidelines: references

Check **<u>before</u>** submission:

are references accessible for international audience?

are references peer-reviewed publications?

followed the journal guidelines for referencing?

Exercise 25:

Have a look at the given list of references (or your own references). How many references are international peer-reviewed? How many are non-English, reports or grey literature?

Antoninetti, M., 1991. Un'oasi per tutti. Cooperativa Libraria Borgo Aquileia. Udine, 128 pp.

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26. The appendix

Purpose

- to present additional data that are not critical to understanding the manuscript

- can include example of a questionnaire, complex equations, calculations or a data table with detailed results that are of interest to the expert

- optional section, most papers do not need appendix

Sample

Appendix A: Table of compounds including measurements

27. Figures, graphs & tables

Purpose

- to present complex data sets in an easy understandable way

- to illustrate experimental design and results

- to help reader to grasp the author's message

What to avoid?

- present data in the text AND in a table/graph

- presenting figures, graphs and tables without referring to them in the text

When tables?

- when data actually must be presented, not because data are available

- when exact figures are needed for the reader

- not all numerical data must be put in a table:

  content of <u>simple</u> tables can easier be stated in <u>words</u>

  content of <u>complex</u> tables can easier be shown in <u>graphs</u>

Effective table design

- preferable design table that elements **read down**, not across

- no vertical lines

- reduce horizontal lines to minimum

- no frames

Table design horizontal

Car	Mercedes	Porsche	Toyota	BMW
Seats	5	2	6	5
Max. speed (km/h)	250	280	220	250
Optional equipment	Navigation system	Detachable roof	Additional Rumble-seat	Air-condition
Fuel consumption	9.3	11.2	6.8	9.2

Table design vertical

Car	Seats	Max. speed (km/h)	Optional equipment	Fuel consumption (l)
Mercedes	5	250	Navigation system	9.3
Porsche	2	280	Detechable roof	11.2
Toyota	6	220	Additional Rumble-seat	6.8
BMW	5	250	Air-condition	9.2

When graphs?

- often data can be presented either as table or graph (=line drawing)

- generally: prefer tables instead of graphs because they provide exact numbers

- however: if data show pronounced trends and make an exiting picture, use graphs

- graphs can be read quicker by the reader

When graphs?

Fuel consumption (l)	50 km/h	100 km/h	150 km/h	200 km/h
Mercedes	7.3	7.4	10.1	12.8
Porsche	7.6	8.2	11.9	17.3
Toyota	5.4	6.1	6.7	8.1
BMW	6.7	7.2	6.8	10.1

Effective graph design

- add all labels & measurement units into the grph

- avoid too small front size as graph will be reduced for print

When figures?

- any figure or photograph included in a manuscript should make a significant contribution

Effective figure design

- photographs: seldom need for whole photograph, right out to all four edges, better crop the part you need

- figures & photograph: be aware of copyright if other than own material is included

- produce figures with high contrasts

- put the focus of the figure into the middle

Black & white vs. colour

- test whether use of colours works when printed in black & white

- journals offer colours for free in online-version (PDF)

- colour use in hard copy will be charged

Captions

- every figure/graph/table requires a number and a caption (= an information title)

- should be short as possible

- but include enough information to allow the figure/graph/table to be understood in isolation

- avoid captions that exceed 1/3 of a page

28. The abstract

What is the abstract?

- Second most frequently read part of a paper

- Often read before full paper is accessed

- Often published itself – should be self-contained

Purpose

- informs the reader about the general content

- determines paper's relevance for reader

needs to raise the reader's interest

Abstract & peer review

- is used to initially inform the editor and referees in the peer-review process

- a carefully prepared abstract will attract the interest of the reviewer

- a poor abstract makes a reviewer/editor disliking/rejecting a manuscript

- usually a good abstract is followed by a good paper; a poor abstract by a poor manuscript

Exercise26:

Read the following two abstracts. Which one is the more informativ and give more details on the paper?

Ask yourself: Do I understand from the abstract, what is presented in the paper?

Abstract 1

In the context of European integration, networks are becoming increasingly important in both social and ecological sense. Since the beginning of the 1990s, societal and scientific exchanges are being restructured as the conceptual approaches towards new nature conservation strategies have been renewed. Within the framework of nature conservation, the notion of an ecological network has become increasingly important. Throughout Europe, regional and national approaches are in different phases of development, which are all based on recent landscape ecological principles. Ecological networks are interpreted in a variety of ways depending on different historical roots of nature conservation, planning and scientific traditions, different geographical and administrative levels, different land uses, and in the end the political decision-making is dependent on actors with different land use interests. This complex interaction between cultural and natural features results in quite different ways for the elaboration of ecological network and greenways.

(Jongman et al. 2004)

Abstract 2

Abstract 2:

Rural tourism enterprises have been developed in rural areas as an alternative to agriculture. The inter-relationships between tourism and agriculture have been discussed at the macrolevel in the relevant literature but not at the farm level. The objective of this paper is to investigate if and how rural tourism enterprises on working farms differ from such enterprises without agricultural activities. The analysis is based on in-person surveys of 197 operators of rural accommodations in Israel. It was found that the farm activities on a working farm are of no value to the visitors. However, on the production side, farmers seem to benefit from the existence of farm activities by using labor more efficiently. In addition, we found that a concentration of firms and attractions creates positive externalities that benefit the single firm.

(Fleischer & Tchetchik 2005)

Writing abstract

- start writing abstract, when paper is completed

- written in one paragraph

- without references

- between 200-500 words

Abstract - avoid

- present statements and conclusions that are not included in the paper

- use for future tense

- use of phrases like "the paper will show" instead say what the paper does show

Guidelines: Abstract

- write abstract as last part of the paper

- summarize each section of your paper in 1-3 sentences below the following five headings:

  - Introduction

  - Methods

  - Results

  - Discussion

  - Conclusions

- remove headings & restructure into one paragraph

Exercise 27:

Prepare an outline for the abstract of your own manuscript.

Write down 1-3 sentences that summarize each of your paper sections. Follow the writing guidelines.

- Introduction

- Methods

- Results

- Discussion

- Conclusions