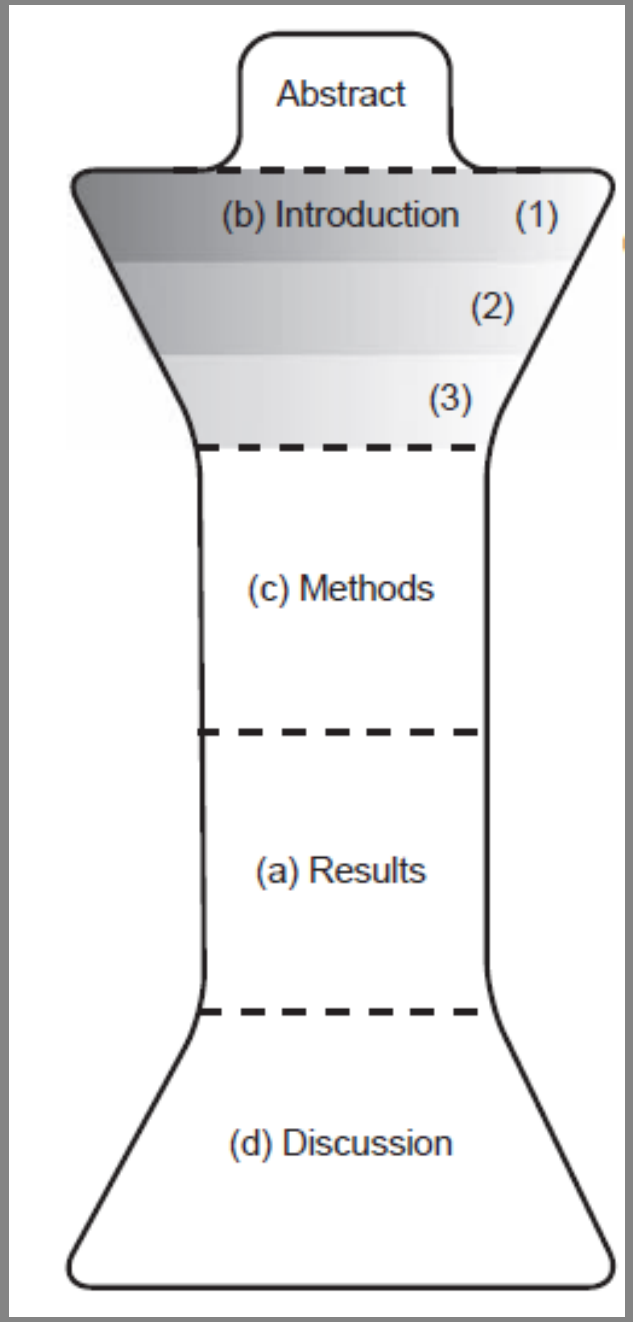
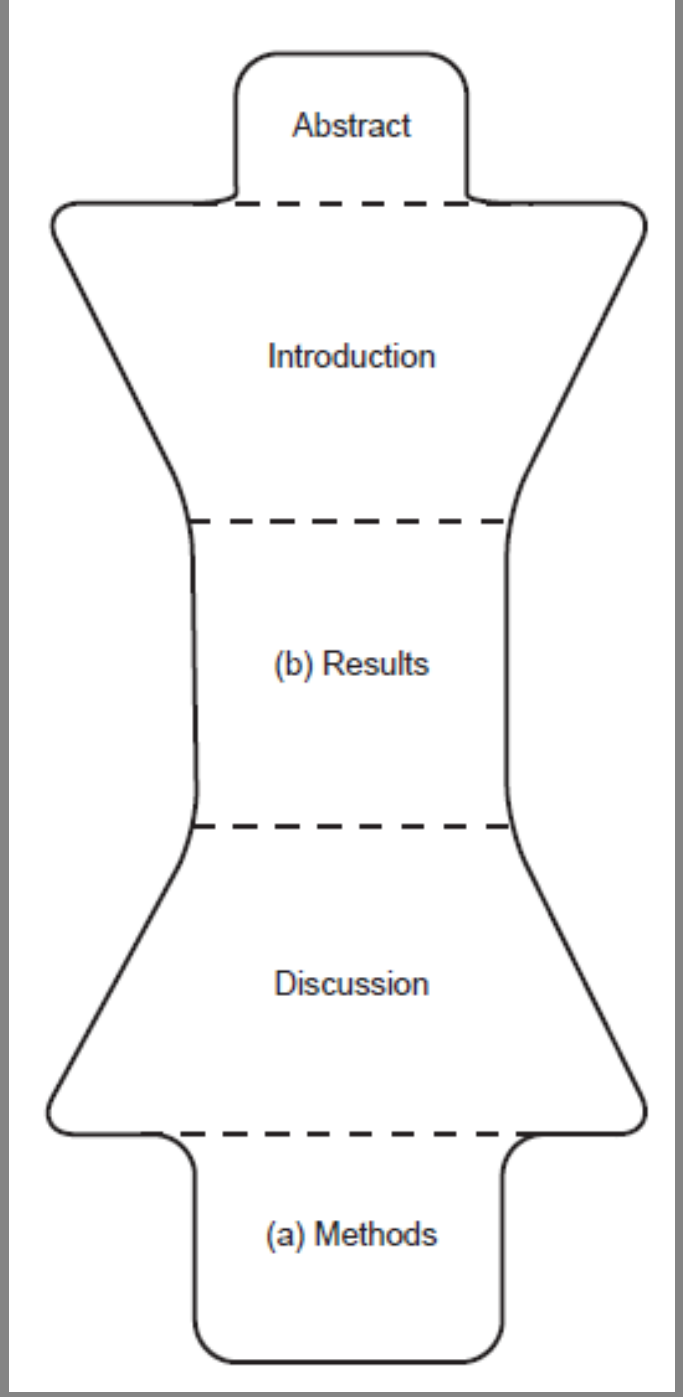
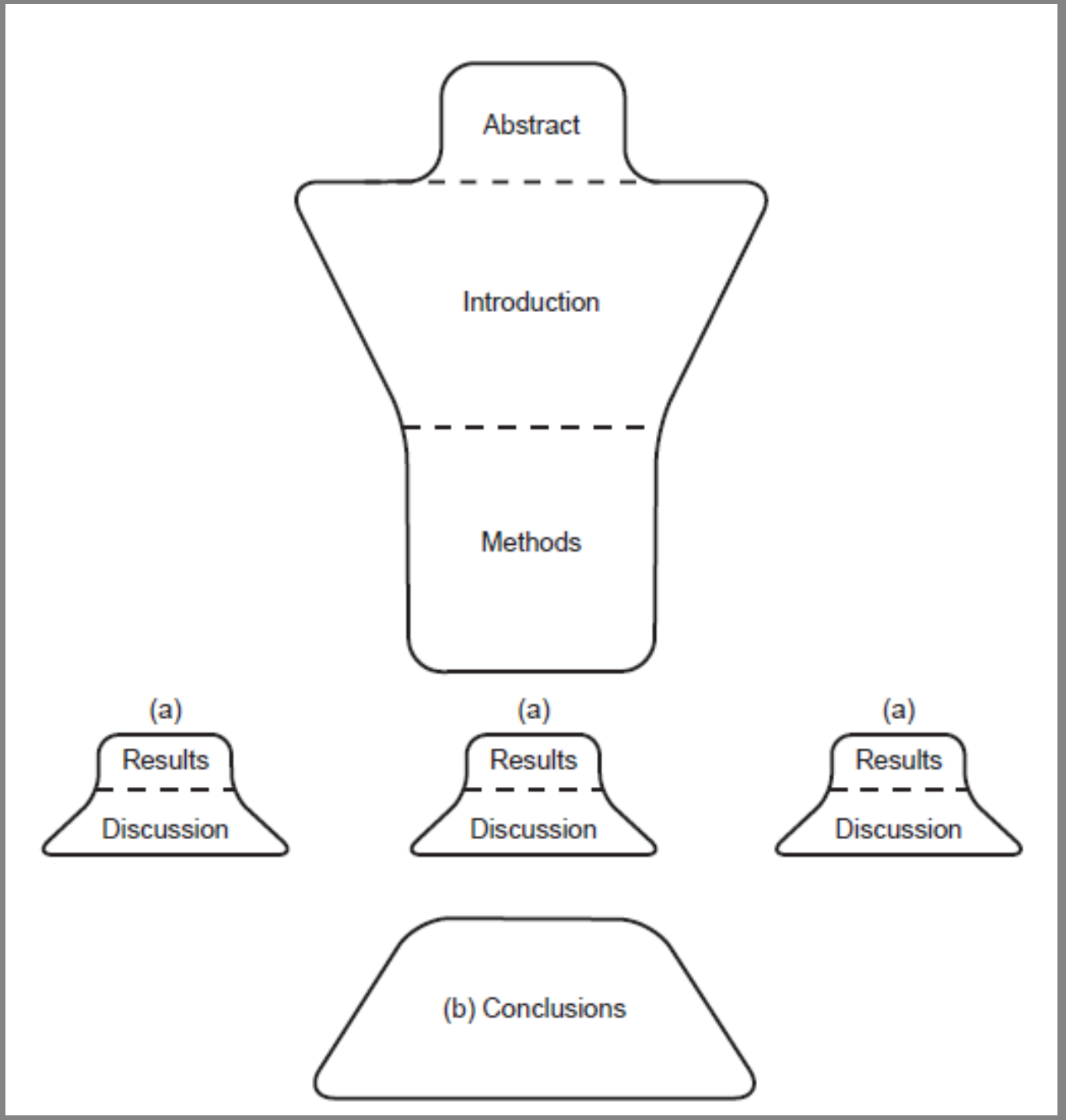
The (A)IMRAD structure

- AIMRaD
- HOURGLASS




Abstract
Introduction
(b) Results
Discussion
(a) Methods


Abstract
Introduction
Methods
(a)
Results
Discussion
(a)
Results
Discussion
(a)
Results
Discussion
(b) Conclusions

Referees’ criteria for evaluating manuscripts

- Initial filter – editor
- 2 peer referees or reviewers
- Blind or double blind
- Instructions for referees – check the website!
- Ticking the boxes + comments+ rating
- **Typical questions included on Referee’s Evaluation Forms for science journals**
- 1. Is the contribution new?
- 2 . Is the contribution significant?
- 3. Is it suitable for publication in the Journal?
- 4. Is the organisation acceptable?

- 5. Do the methods and the treatment of results conform to acceptable scientific standards?
- 6. Are all conclusions firmly based in the data presented?
- 7. Is the length of the paper satisfactory?
- 8. Are all illustrations required?
- 9. Are all the figures and tables necessary?
- 10. Are figure legends and table titles adequate?
- 11. Do the title and Abstract clearly indicate the content of the paper?
- 12. Are the references up to date, complete, and the journal titles correctly abbreviated?
- 13. Is the paper excellent, good, or poor?

1. Title
2. Author(s) and institution(s)
3. Abstract
4. Introduction
5. Methodology (Method)
6. Results
7. Discussion/Conclusion
8. References

The Title

- Good title:

➢is critical

➢either attracts potential readers or dissuades them from reading the article

➢should give enough information to inform the reader what the study is about

➢there should be no doubt what issue is being investigated

➢it should also indicate what type of article it is (e.g. primary research or overview)

- Good titles:

➢- clearly identify the **field** of the research,

➢- indicate the „**story**” the results tell, and

➢- **raise questions** about the research in the mind of the reader

The Title

- Example:
- **Good title**: Tsang (1996) “*Comparing the Effects of Reading and Writing on Writing Performance*.”
- **Less good title**: Zhongganggao (2001) “*Second Language Learning and the Teaching of Grammar*”

The Title

➢the title should not require unnecessary reading

➢titles should be short and succinct, clearly telling the readers what they want to know

- Long and complex example:

- De Groot & Poot (1997): *Word Translation at Three Levels of Proficiency in a Second Language: The Ubiquitous Involvement of Conceptual Memory*

The Title

3 criteria to look for in the title:

focus of the study

type of article

succintness

The Abstract

- (a) purpose of the study
- (b) source(s) from where the data are drawn (usually referred to as participants)
- (c) the method(s) used for collecting data
- (d) the general results
- (e) general interpretation of the results

Introduction

- the ***brains*** of the study
- We should find:

✓the topic being investigated

✓why it is important enough to be studied

✓the research question

✓any theory being considered

✓any hypothesis being proposed

✓constructs and special terminology should be defined

Introduction

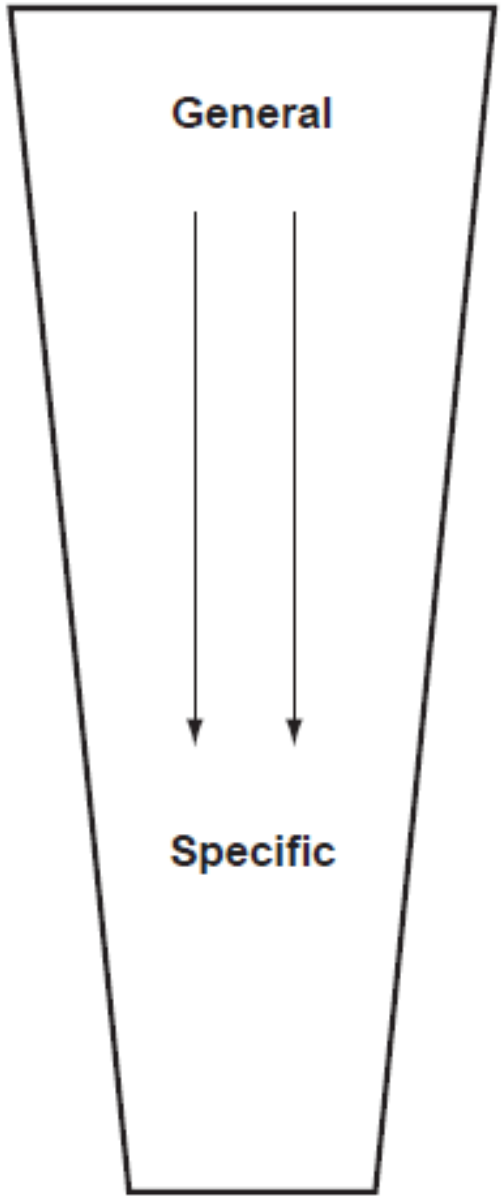
- **Literature review** - a highly orchestrated, logical argument consisting of a number of statements to provide the reasoning behind the study
- with each statement, a study is summarized and/or referenced for support of the statement
- each statement needs to be supported by findings from at least one study
- if no support is provided, the statement is no more than a hypothesis and needs to be tested
- E.g. “Women are better language learners than men”

- The support for each statement will be in the form of at least one reference to a study
- Statements without support weaken the overall argument

Introduction

- Referees are likely to look here for evidence to answer the following questions

- Is the contribution new?
- Is the contribution significant?
- Is it suitable for publication in the journal?



1. Statements about the field of research to provide the reader with a setting or context for the problem to be investigated and to claim its centrality or importance.
2. More specific statements about the aspects of the problem already studied by other researchers, laying a foundation of information already known.
3. Statements that indicate the need for more investigation, creating a gap or research niche for the present study to fill.
4. Statements giving the purpose/ objectives of the writer's study or outlining its main activity or findings.
5. Optional statement(s) that give a positive value or justification for carrying out the study.

Introduction

Stage 1: Locating your project within an existing field of scientific research

- begin with broad statements
- present tense
- present perfect tense
- broad, general statements - one sub-area of the field - the authors' own particular topic

  - **Old information – new information**

Introduction

Using references in Stages 2 and 3

- Selected literature
- - to justify
- - construct a gap or niche for your work
- Literature - all the published research articles, review articles, and books in a given field;
    - information published on websites that have been peer-reviewed or belong to organizations with appropriate scientific reputations

Introduction

- References and citations
- **1. Information prominent citation**
- Shrinking markets are also evident in other areas.* The wool industry is experiencing difficulties related to falling demand worldwide since the development of high-quality synthetic fibres (Smith 2000).
- **2. Author prominent citation style** 1
- Shrinking markets are also evident in other areas. As Smith (2000) pointed out, the wool industry is experiencing difficulties related to falling demand worldwide since the development of high-quality synthetic fibres

Introduction

- **3. Author prominent citation style 2**
- Shrinking markets are also evident in other areas. Smith (2000) **argued** that the wool industry was experiencing difficulties related to falling demand worldwide since the development of high-quality synthetic fibres. However, Jones et al. (2004**) found that** industry difficulties were more related to quality of supply than to demand issues. It is clear that considerable disagreement exists about the underlying sources of these problems.
- **4. Weak author prominent citation**
- Several authors have reported that the wool industry is experiencing difficulties related to falling demand since the development of high-quality synthetic fibres (Smith 2000; Wilson 2003; Nguyen 2005). For example, Smith (2000) highlighted . .

Introduction

- **5. Citing when you cannot obtain the original reference**
- [The finding or fact you want to cite] (Smith 1962, cited in Jones 2002)

Introduction

- The important thing to watch for is that it is clear to your reader whether the idea or fact you are using in each and every sentence is your own, or has come from the work of another person
- inverted commas (‘‘ . . . ’’) are extremely rare in science writing
- **Paraphrase!**

Introduction

Indicating the gap or research niche

- it can be written in a multitude of ways
- E.g.
- However, understanding how these processes interact to regulate invasions remains a major challenge in ecology
- *however, remains a major challenge, rarely, not well understood, and presently unclear*

Introduction

Stage 4: The statement of purpose or main activity

- aim or purpose of the study to be reported
- Flexibility
- keep a list of possible wordings

Introduction

Suggested process for drafting an Introduction

- Begin with **Stage 4:** aim
- Draft **Stage 3** next: the gap or need for further work: *however* or *although*, *little information, few studies, unclear, or needs further investigation*
- **Stage 1**, the setting - your intended audience and their interests and background knowledge, and the ideas you have highlighted in your title
- Arrange the information you have collected from the literature into **Stage 2**
- **Combine the stages into a coherent Introduction**

Introduction

Editing for logical flow

- Strategy 1: Always introduce ideas
- informative titles, subheadings and introduction sections

- **A key to effective scientific and technical communication in English is to set up expectations in your reader's mind, and then meet these expectations as soon as possible.**

Introduction

- Strategy 2: Move from general information to more specific information
- Strategy 3: Put old (or given) information before new information
- Strategy 4: Make a link between sentences within the first seven to nine words
- Strategy 5: Try to include the verb and its subject in the first seven to nine words of a sentence

Methodology

- the ***skeleton*** of the study
- If it is well written, others should be able to replicate the study exactly
- The ability to replicate a study is the principal criterion used to judge the quality of this component of a research report
- It tells us:
- who was studied, what was studied, and how the information was collected and analyzed

Methodology

- **Sample**
- **Research design**

➢treatment(s) (optional)

- techniques (optional)
- materials (optional)
- **Data-collection procedures**

➢instruments (optional)

➢observational methods

- **Procedures followed**

Methodology

Sample

- describes the participants/subjects or the objects of the study
- It should also explain the rationale used for selecting the participants so that the reader may be able to assess whether the resulting data are valid for the purpose of the study

Methodology

Research design

- explains the ***overall structural design*** used in the study
- In a well-written design section, the *variables* of the study are clearly identified and defined. the term *construct* is usually replaced by the term *variable*

Methodology

Data-Collection Procedures

explains in detail how the information is collected for the purpose of a research study

Most studies involve either instruments and/or observational procedures

Methodology

Procedure

- a detailed explanation of how the complete study was executed
- it describes when and how the treatments (if any) were administered, when and how the instruments (if any) were given, and/or when and how observation methods were used
- **main criterion** for judging the quality of this subsection is whether we have enough information to replicate the study if need be

Results

- The results of any data analysis are given
- The strengths and weaknesses of a study can often be found in the choice of a data analysis procedure that affects the results

Results

„Story” – the key driver of an article

- ♦ main points of your results
- ♦ focus on your tables and figures

Aim to reach agreement on:

♦ which data should be included;

♦ what are the important points that form the story of the paper; and

♦ what is/are the take-home message or messages.

Results

Writing about results

- - highlight the main points
- - *do not* repeat in words all the results from the tables or figures
- - Results; Discussion; Results and discussion
- Functions of results section:
- ♦ to highlights the important findings;
- ♦ to locate the figure(s) or table(s) where the results can be found; and
- ♦ to comment on (but not to discuss) the results.

Results

- Highlight+location e.g.:
- *Measurements of root length density (Figure 3) revealed that the majority of roots of both cultivars were found in the upper substrate layers*.
- *The response of lucerne root growth to manganese rate and depth treatments was similar to that of shoots (Figure 2)*.
- Location:
- *Figure 17 shows the average number of visits per bird*.

Discussion

- Does the journal you are targeting allow the option of a combined Results/Discussion section, followed by a separate Conclusion?
- Does the journal permit a Conclusion where the Discussion is relatively long?
- Does the journal publish Discussion sections which include subheadings?

Discussion

- Discussion → Introduction
- it is not necessary to include in the Introduction all the literature that will be referred to in the Discussion

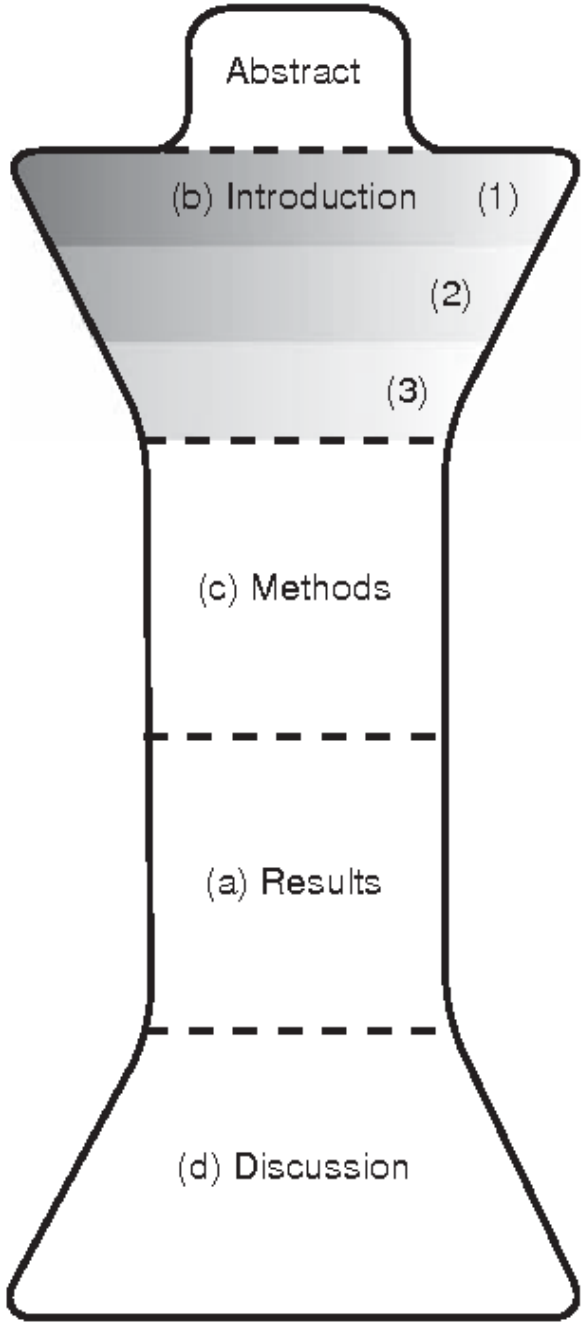
Discussion

Checklist

- 1. A reference to the main purpose or hypothesis of the study, or a summary of the main activity of the study.
- 2. A restatement or review of the most important findings, generally in order of their significance, including
- **i** whether they support the original hypothesis, or how they contribute to the main activity of the study, to answering the research questions, or to meeting the research objectives; and
- **ii** whether they agree with the findings of other researchers
- 3 Explanations for the findings, supported by references to relevant literature, and/or speculations about the findings, also supported by literature citation.

Discussion

- 4. Limitations of the study that restrict the extent to which the findings can be generalized beyond the study conditions.
- 5. Implications of the study (generalizations from the results: what the results mean in the context of the broader field).
- 6. Recommendations for future research and/or practical applications.



(a) The whole structure is governed by the Results box; everything in the article must relate to and be connected with the data and analysis presented in the Results section.

(b) (1) The Introduction begins with a broad focus. The starting point you select for your Introduction should be one that attracts the lively interest of the audience you are aiming to address: the international readers of your target journal.

(3) The Introduction ends with a focus exactly parallel to that of the Results; often this is a statement of the aim or purpose of the work presented in the paper, or its principal findings or activity.

(2) Between these two points, background information and previous work are woven together to logically connect the relevant problem with the approach taken in the work to be presented to address the problem.

(c) The Methods section, or its equivalent, establishes credibility for the Results by showing how they were obtained.

(d) The Discussion begins with the same breadth of focus as the Results – but it ends at the same breadth as the starting point of the Introduction. By the end, the paper is addressing the broader issues that you raised at the start, to show how your work is important in the 'bigger picture.'