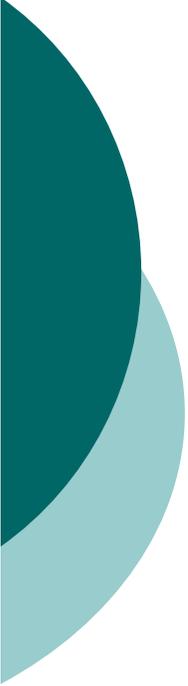# ENGLISH FOR SCIENCE AND TECHNOLOGY

Research Paper (II)

Objetives

- To identify the basic communicative functions of Research papers

- To analyse their macrostructure: primary and secondary

- To identify conventions of Introductions in Research Papers

Macrostructure

- Primary structure: sections
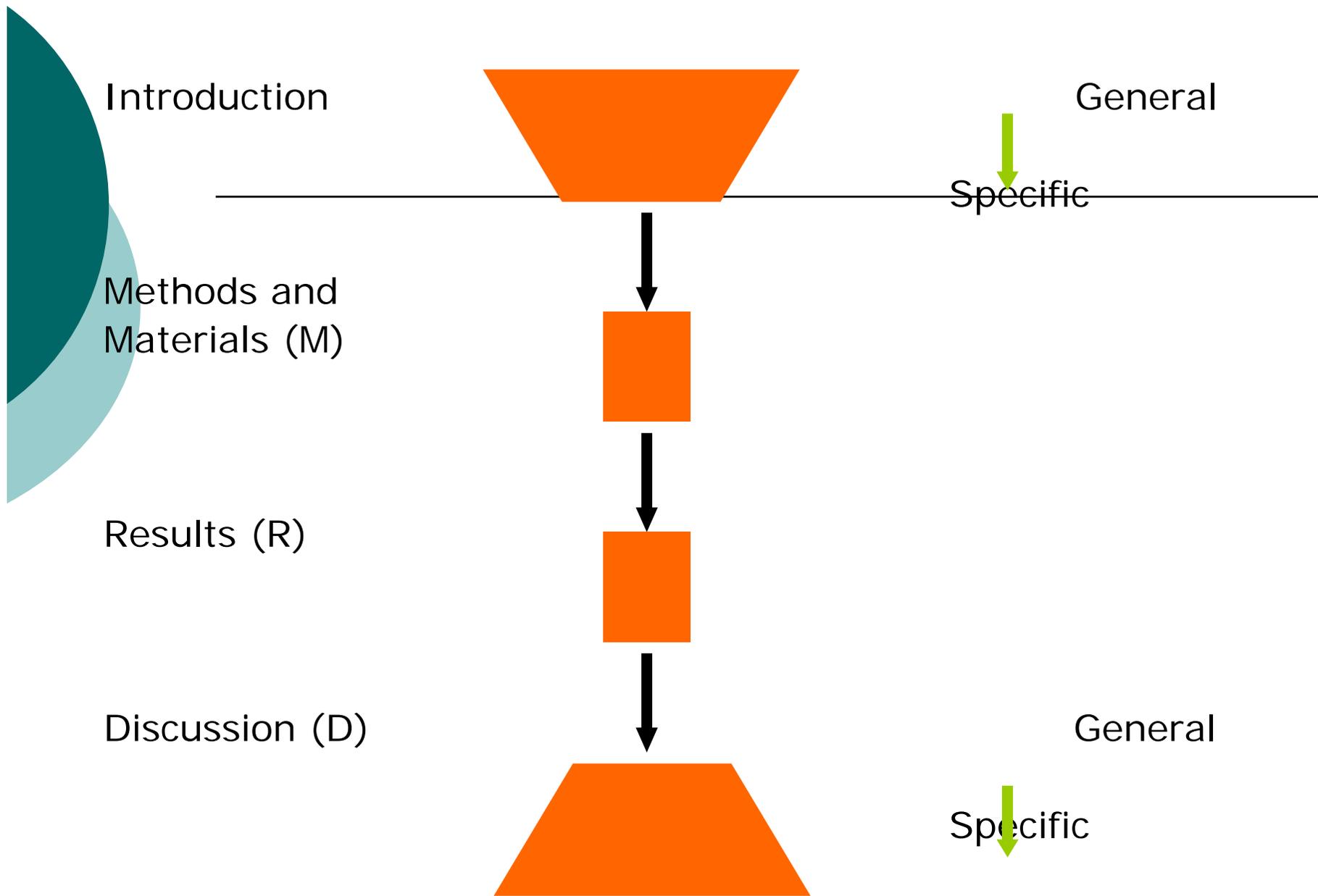
- Secondary structure: moves or sections' parts

Macrostructure

Primary structure

IMRD pattern.
Swales (1990)

Procedure

Title
Abstract
Introduction
Methods/Materials
Results
Discussion
Acknowledgments
References

Introduction

General

Specific

Methods and
Materials (M)
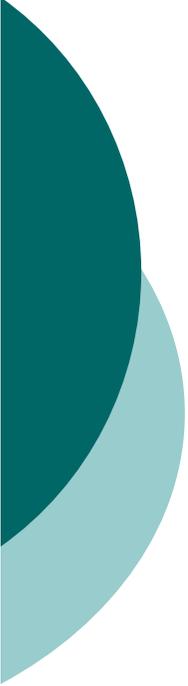
Results (R)

Discussion (D)

General

Specific

Purpose

- **Introduction**
  - State the problem
  - Attract interest in the topic
- **Methods**
  - Describe methodology, materias or subjects and procedures
- **Results**
  - Describe findings- presentation of data
- **Discussion**
  - Give account of what has been learned in

- **What was the problem?**

- **How did you study the problem?**

- **What did you find?**

- **What do these findings mean?**

Introduction

- The purpose of this paper is to….

- This paper describes and analyzes…

- My aim in this paper is to…

- In this paper we report on…

Introduction

Swales (1990)

- Establishing a research territory
- Establishing a niche
- Occupying the niche

Moves in Research Paper Introductions (Swales, 1990)

- Establishing a research territory
  - By showing that the general research area is important, central, interesting, problematic, or relevant in some way (optional)
  - By introducing and reviewing ítems of previous research in the area (obligatory)
- Establishing a niche
  - By indicating a gap in the previous research, or by extending previous knowledge in some way (obligatory)
- Occupying the niche
  - By outlining purposes or stating the nature of the present research (obligatory)
  - By listing research questions or hypothesis (in some fields)
  - By announcing principal findings (in some fields)
  - By stating the value of the present research (in some fields)
  - By indicating the structure of the RP (in some fields)

Establishing a research territory

○ A) By showing that the general research area is important, central, interesting, problematic, or relevant in some way (optional)

- Strong opening sentences
  - ○ Recently, there has been growing interest in...
  - ○ The possibility of... has generated wide interest in...
  - ○ The development of ... is a classical problem in...
  - ○ The development of ... has led to the hope that...
  - ○ Knowledge of....has a great importance for...
  - ○ The increasing interest in... has heightened the need for...
  - ○ The study of... has become an importan aspect of...
  - ○ A central issue in...is....
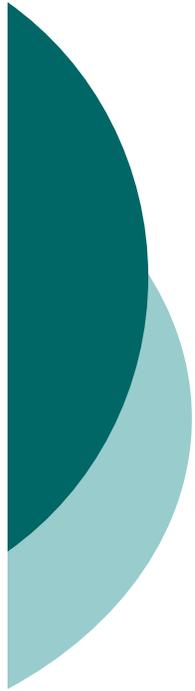 - ○ Many recent studies have focused on...

Establishing a research territory **Swales (1990)**

○ B) By introducing and reviewing ítems of previous research in the area (obligatory)

- Reviewing the literature (citing patterns)
  - ○ Jones(1997) concluded that illiteracy can be related to...
  - ○ Jones(1997) has concluded that
  - ○ Jones(1997) concludes that
  - ○ Jones (1997) investigated the causes of illiteracy
  - ○ The causes of illiteracy were investigated by Jones (1997)
  - ○ The causes of illiteracy have been widely investigated (Jones1988, Hyon 2004)
  - ○ The causes of illiteracy are complex (Jones1988, Hyon 2004)

- Little/few
  - However, little information…
  - There is little research..
  - The department has few computers…
  - However, few studies…
- No/none of
  - No studies/data/calculations…
  - None of these studies/findings…
- Contrastive statements
  - The research has tended to focus on…. rather than on…
  - These studies have emphasized…, as opposed to…
  - Although considerable research has been devoted to …., rather less attention has been paid to…

- ○ Raising a question/hypothesis
  - • It would thus be of interest to learn how…
  - • If the results could be confirmed, they would provide strong evidence for…
  - • The findings suggest that this approach might be less effective when…

- ○ Extending previous knowledge in some way
  - • These recent developments in computer-aided design clearly have considerable potential. In this paper, we demonstrate…
  - • The literature shows that Rasch Analysis is a useful technique for validating multiple-choice tests. This paper uses Rasch Analysis to…
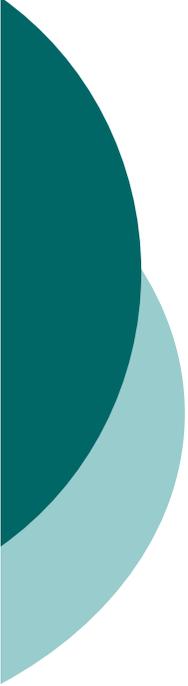
Occupying a niche **Swales (1990)**

- Move 3ª:
  - Purposive (P)The author or authors indicate their main purpose or purposes
    - The aim of the present paper is to give...

  - Descriptive (D) The author or authors describe the main feature of their research.
    - This paper reports on the results obtained...

Materials and Methods

- Describe methodology, materias or subjects and procedures

Results

- Describe findings
- Presentation of data

Discussion

- Give account of what has been learned in the study-answer questions raised in the Introduction