Article Structure

Research papers are broadly divided into empirical and theoretical papers.

Empirical Research Paper

- The author reports on his or her own study.
- The author will have collected data to answer a research question or address an issue/problem at hand.

Theoretical Research Papers

- The author develops and presents his or her own new theory about a problem.
- The author's arguments depend entirely on theoretical research in available scholarly literature in the form of articles in scientific journals, official documents, books, newspapers and so forth).

An academic paper has a clear structure and, as a rule, consists of the following parts:

1. Title
2. Abstract
3. Keywords
4. Introduction
5. Literature review
6. Methods and mate
7. Results
8. Discussion
9. Conclusions and prospects for further research

IMRAD format

- Introduction
- Method
- Results
- (And)
- Discussion

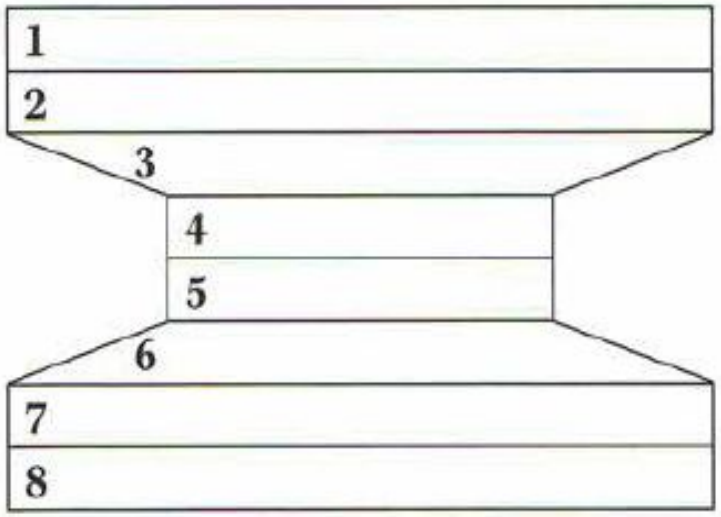
IMRAD -format

- **I**ntroduction
- **M**ethods
- **R**esults
- **A**cknowledgements and **D**iscussion

- Почему проведено исследование? Что было исследовано, или цель исследования, какие гипотезы проверены?
- Когда, где и как были проведены исследования? Какие материалы были использованы или кто был включен в выборку?
- Какой ответ был найден. Верно ли была протестирована гипотеза?
- Что подразумевает ответ и почему это имеет значение? Как это вписывается в то, что нашли другие исследователи? Каковы перспективы для будущих исследований?

IMRAD стал «стандартом» в оформлении научных статей, когда в 1972 году и затем в 1979 году Американский национальный институт стандартов опубликовал стандарт ANSI Z39.16-1972 (Preparation of Scientific Papers for Written or Oral Presentation)

12 Work in pairs. Put the headings for the sections of a good research article in the diagram. Compare your answers with another pair.



a References
b Discussion
c Title
d Materials and methods
e Introduction
f Results
g Conclusions
h Abstract

13 Match the sections of a research article (a–h) in Activity 12 with their purposes (1–8).

1 It summarises the research study and results of the study; it is included in article databases and is usually free to a large audience.
2 It describes both specific techniques and the overall experimental strategy used by researchers.
3 It clearly indicates the content of the article and helps interested readers to find the article quickly in a database.
4 It explains research findings and often deals with their applications.
5 It summarises the data collected and calculates totals or trends, statistically significant findings, etc.
6 It describes the theoretical background, indicates why the work is important, states a specific research question, and poses a specific hypothesis to be tested.
7 It states implications and recommends further research.
8 It lists the sources cited by the author(s) of the article.

Introduction

An introduction is intended to provide *background information* on the topic of the article and explain the purpose of the research.

First of all, the author should state *the general topic* of the study.

The author also identifies *problems* which had not been solved in previous studies and which this article is intended to solve.

An introduction must clearly state:

- **the aim and object** of the author's research.

To formulate an aim, one has to answer the question: "What do I want to create as a result of the research?"

This result can be a new methodology, classification, algorithm, structure, a new version of the existing technology, a learner's guide, etc.

The purpose is usually formulated with the help of the following verbs: *reveal, identify, form, prove, verify, determine*, etc.

An introduction must clearly state:

- **the relevance and novelty**.

The *relevance* of the topic is the degree of its importance today under current circumstances.

It is the ability of the results to be used to solve quite significant theoretical and practical problems.

Novelty is what distinguishes the result of this work from the results obtained by other authors.

Введение / Introduction

A. Актуальность (с обоснованием и подтверждением)
B. Научная проблема
C. Цель
D. Объект и предмет исследования
E. Научные задачи исследования
F. Гипотезы
G. Ожидаемые результаты
H. Концепция работы
I. Значимость

1 Work in pairs. Discuss the questions.

1 Do you find writing the Introduction section of an academic article easy or difficult? Why?
2 What is the main purpose of the Introduction section?
3 What kind of information do you always include in this section?

Reading

2 Text 1 describes five main stages that often appear in Introductions (after Weisseberg & Buker 1990, p. 22; Cargill & O'Connor 2009, p. 42). Fill in the gaps with the words in the box.

centrality	context	findings	niche	objectives	researchers	value

Text 1

Stage 1. Statements about the field of research to provide the reader with a setting or [1] _____ for the problem to be investigated and to claim its [2] _____ or importance.

Stage 2. More specific statements about the aspects of the problem already studied by other [3] _____, laying a foundation of information already known.

Stage 3. Statements that indicate the need for more investigation, creating a gap or research [4] _____ for the present study to fill.

Stage 4. Statements giving the [5] _____ of the writer's study or outlining its main activity or [6] _____.

Stage 5. Statements that give a positive [7] _____ or justification for carrying out the study.

3 **Text 2 is an Introduction whose parts (A–E) are jumbled up. Put the parts into a logical order and then match them with the stages in Text 1. Compare your answers in pairs.**

Text 2

_____A There is now a great deal of evidence that lecturing is a relatively ineffective pedagogical tool for promoting conceptual understanding. Some of this evidence is general, showing that learners gain meaningful understanding of concepts primarily through active engagement with and application of new information, not by passive listening to verbal presentations (reviewed in National Research Council, 1999). More specific evidence shows that students learn substantially more from active inquiry-based activities and problem solving than from listening to lectures (Beichner and Saul, 2003).

_____B To address the validity of these concerns, we carried out an experiment in "scientific teaching" (Handelsman et al., 2004) in a large upper-level Developmental Biology course, in which the same two instructors, teaching the same syllabus, tested the effect of two different teaching styles on student learning gains in successive semesters.

_____ C Thirty years ago, the future success of biology students might have been predictable by the amount of factual knowledge they had accumulated in their college courses. Today, there is much more information to learn, but the increasingly easy accessibility of facts on the Internet is making long-term memorization of details less and less important. Therefore, teaching for conceptual understanding and analytical skills while encouraging collaborative activities makes increasing sense in undergraduate courses.

_____ D The results we present here indicate that even a moderate shift toward more interactive and cooperative learning in class can result in significantly higher student learning gains than achieved using a standard lecture format.

_____ E Nevertheless, many university faculty who are comfortable with their lecture courses remain unconvinced that more interactive teaching will lead to increased student learning, or that interactive teaching is even feasible in large classes.

Identifying goals

Talking about goals

word	in sentence or collocation	comment
goal	**have something as a goal, achieve your goal**	we don't usually say 'reach your goal'
intention	**with the intention of *-ing*, have no intention of *-ing***	verb = **intend** followed by the infinitive
motive	**motive for *-ing*** [reason]	verb = **motivate**; more general noun = **motivation**
objective	**meet**[1] **/ achieve objectives**	= what you plan to do or achieve
priority	**top priority, take priority over, give (top) priority to**	implies a list of important things
purpose	Our **purpose** was to test our theory.	**on purpose** means deliberately
strategy	Their **strategy** was to proceed slowly.	= detailed plan for success
target	**reach / achieve / attain a target**	= level or situation you hope to achieve
deliberate	We took the **deliberate** decision to keep our study small.	= intentional; is often used for something negative

[1]we also talk about meeting criteria

24.2 **Choose the best word to complete each sentence.**

1 Our hope was to *instigate / contribute / attain* a public discussion of the ethical issues involved.
2 Their target was to achieve a *deliberate / creative / critical* mass of support for their proposal.
3 The research *prioritises / challenges / achieves* existing theories in some exciting ways.
4 I hope my dissertation *meets / reaches / has* all the relevant academic criteria.
5 At the moment writing the assignment has to take *target / purpose / priority* over my social life.
6 What was your *goal / motive / intention* for choosing this particular university?

24.3 **Complete the second sentence so it means the same as the first. Use the word in brackets.**

1 Protecting the privacy of our subjects must take priority over absolutely everything else.
We must ..... the privacy of our subjects. (PRIORITY)

2 Our intention in designing the questionnaire was to make it straightforward to answer.
We designed the questionnaire ..... it straightforward to answer. (INTENTION)

3 We aimed to evaluate a new approach to urban planning.
We had ..... a new approach to urban planning. (GOAL)

4 I did not intend to become a scientist when I began my studies.
I had ..... a scientist when I began my studies. (INTENTION)

5 A methodology based on a hypothesis does not work in some cases.
A ..... methodology does not work in some cases. (-BASED)

6 Our project is located in the area where sociology and psychology meet.
Our project is located ..... sociology and psychology. (INTERFACE)

24.4 **Complete the table. Use a dictionary if necessary.**

verb	noun	verb	noun
	intention		hypothesis
	definition	establish	
achieve		base	....., ...
	practice		application