

THE TYPES OF SCIENTIFIC WORKS

❖ *Tutorial paper*

A tutorial paper is usually prepared as part of a tutoring course, in order to enable the participants to consolidate what is being taught with their own action and effort.

Its purpose is to bring the student face to face with the problems of a scientific area and its relevant literature.

❖ *Academic essay*

Unlike tutorial papers, where one presents the thoughts, assessments and findings of other scientists under a critical view and composition, an academic essay is the first type of autonomous scientific work, although in higher education practice the two types are often identical. An academic essay is the classic form of a paper that students are required to compose. It aims to scientifically present a special topic, by utilising special literature. The student provides information on the start and progress of his research. He also reviews up-to-date research on his subject and places in it his own contribution to the research. He must assess and evaluate the specific literature he uses on his subject and the main positions of their authors. He then raises his own new data, his own new positions that he is trying to establish scientifically. He poses conceptual problems and attempts to find answers by proposing solutions.

❖ *Dissertation*

A dissertation is linked with the closing, the completion of the studies and receiving a diploma which it is a necessary condition for. The dissertation is related to both undergraduate and postgraduate studies. It is written at the end of postgraduate studies to obtain a specialisation diploma, a Master.

Scientifically, it aims to clearly present a scientific topic and to give reasonably grounded answers to respective scientific problems. It presents, based on the bibliography, the status of research on a topic. Its author is called upon to demonstrate whether he can work scientifically and make use of the research of others.

❖ **Doctoral Thesis**

A doctoral thesis is the leading type of scientific work. It is an autonomous scientific paper on a narrowly and strictly defined special topic, with the purpose of obtaining the title of doctor in a University.

The main feature of a thesis, which seals its identity, is its **originality**, that is, the contribution to the science of new data and findings, which had not yet been identified and ascertained by scientific research. This constitutes the noticeable difference between a thesis and a dissertation, where there is no requirement for originality but only the knowledge of the scientific methodology and the young scientist's capability to pose research problems and attempt to resolve them on his own.

In addition to the title of doctor, the Schools or Departments also award the title of **honourary doctor** of a science. This title is awarded honourably to great scientific figures of a school or university in recognition of their great scientific work, or to well-known and renowned personalities from the wider intellectual area in recognition of their services to a field of culture or science.

Self-guided Doctoral Thesis: Since the doctoral thesis is carried out under the guidance of a supervising professor, there is also the self-guided doctoral thesis, in which the scientist moves completely free of any supervision, truly independent and self-reliant. For this reason, while the doctoral thesis requires the approval of a collective body, in order for the

candidate to proceed with its printing, in the self-guided doctoral thesis the paper is submitted in print under the responsibility of its author.

Other types of scientific production:

Textbook

A textbook is a short book in which the author gathers the basic knowledge of a science or art. There is no originality requirement for a textbook. Its purpose is to impart the basic knowledge of a scientific discipline.

❖ *Announcement at a scientific conference*

One announces something new that he found by researching archives, monuments, secretarial sources or experimenting in the field of applied sciences. He also announces a change of estimates and interpretations related to either his own previous research or the research of others, because the old estimates were based on data that have changed or due to an incorrect evaluation of old data.

❖ *Article*

A scientific article has originality claims. The scientist writes an article about a specific aspect of a topic when he realizes that he has something new to offer to the scientific world.

The purpose of the article is to give an overview of the opinions and assessments that exist in the research on a topic, especially those that have prevailed, giving a basic bibliography at the end.

❖ *Monograph*

A monograph is a scientific study in which a single author focuses on a single subject in a complete, integrated and thorough manner.

The subject of the monograph is unique, detached from its relevance. It can be a special subject, a special problem of any science, as long as the development of the subject is complete, comprehensive and exhaustive. That is, one must not leave gaps or unlit and unexamined points.

❖ **Treatise**

An issue is addressed in a systematic way, that is, the thoughts are presented in a logical and causal way. There is a rationale and a logical sequence of the following to the previous. The former lead to the latter and they are produced by them. The monograph on a specific topic can also be a treatise, if it is systematic.

❖ **Essay**

Here there are no restrictions on the exhaustion and systematic presentation of the topic, according to established rules of writing technique. The essayist freely and unreservedly expresses his personal views on the topic, without caring whether or not he will exhaust the subject, or whether he will faithfully follow a particular technique or methodology.

❖ **Book review**

It is the systematic critique of usually a new scientific work.

To review a special author on a particular subject, one must at least be as much of an expert as the one being reviewed. There is a risk that the book review will fail and be to the detriment of the author, when he does not understand the examined problems. The second basic condition is objectivity and sobriety.

The reviewer will present with sobriety, seriousness and fairness both the positive and negative elements of the work.

A **book review** is related to a **book presentation**, where one, without necessarily taking a critical position, simply presents the content of a book.

PREPARING TO WRITE

In this phase we distinguish the following sub-stages:

- *choosing or finding the topic*
- *gathering the material*
- *processing and sorting of the material and*
- *preparing the outline*

1. Finding the topic

When choosing a topic we must be very careful that it is not too general but specialised and specific.

The title should convey the essence of the subject and be as short as possible. The use of a subtitle is not excluded, where the main direction of the paper is emphasised. The title is the identity of a scientific paper, so it must faithfully convey its content. Impressive headlines that are intended to appeal to readers but are irrelevant to the content or have little relevance should be avoided. It is good for the final title to take definite shape at the end of writing.

2. Gathering the material

Gathering the material for writing a scientific paper requires much more time compared to the other phases.

The researcher must definitely make an effort to gather all the works that are directly or indirectly related to his subject.

a) **Identifying the literature**

The scientist or student who will resort to libraries must know the basic elements of the organisation and operation of libraries.

Particularly helpful are the **special bibliographies**, i.e. special volumes, which gather the bibliography on a specific topic or in a special scientific area.

There are also *journal bibliographies*, where all published articles in a periodical are bibliographed, usually multi-volume ones. These bibliographies have the great advantage of giving us articles and studies contained in journals.

Encyclopedias, Dictionaries, Manuals

The articles published in Encyclopedias and Dictionaries contain basic knowledge on the subject to which they refer, as well as the basic bibliography on it.

It is necessary for the researcher to approach the modern, new bibliography, examining the new issues or volumes of special scientific journals or the new relevant studies.

b) **Indexing**

In the indexing we note the *bibliography*, but also excerpts from the book, to remember the basic or useful knowledge for our topic. In addition to the bibliography and the relevant passages from the various books, we also note our personal thoughts and assessments on the subject. The indexing will be used for compiling the footnotes and the bibliographic table.

3. Evaluation and sorting of the material

We must master our material, subject it to the plan that we have generally conceived in our minds. What we need to do immediately after gathering

our material is to divide it into related sections, to evaluate it and classify it according to the topic sections that our paper has.

4. The outline and the contents table

Closely related to the sorting of the material is the outline of the written scientific paper. The design we conceived in the beginning never remains unchanged. No scientist can know from the start what his material will offer him so that he can calculate all the sections in advance. The original design is always enriched or differentiated. A pre-constructed, closed and unchanging plan is certainly not a good plan, because it will leave out issues that arise during the course of the research or it will blackmail many issues to fit and be squeezed into foreign and irrelevant sections.

That's why the best outline is the one that results from the sorting of the material. There are no prefabricated outlines. The final outline of the study with the titles of the chapters, paragraphs and sub-paragraphs, will comprise the table of contents of the book, which is preferable to be placed at the beginning of the book, because it immediately gives the reader at first glance the identity of the book, and shows what the reader can expect from the book in his hands.

Logic and sequence in the expression of our thoughts find their best expression in their logical division, as it appears in the outline. The former lead to the latter, which must be logically produced from the former.

In other words, there must be coherence and a logical sequence in the division of the paper, which will accurately reflect the logical sequence of the issues and problems that we analyse. The hallmarks of a good outline are logical sequence and consistency, faithful content rendering and completeness.

Two systems are mainly used to divide our material in the outline:

- the *mixed system* which uses letters of the alphabet and numbers, and
- the *decimal system* that uses only Arabic numerals, which in each division allow for a further nine subdivisions, from 1-9.

Examples:

Mixed system

A. The types of scientific papers and the usefulness of the technical rules of academic writing

1. Types of scientific papers in the higher education area,
2. Types of scientific papers in the wider intellectual area.
3. The usefulness of the technical rules of academic writing

B. Preparing to write

1. Finding a topic
2. Gathering the material
 - a) Identifying the literature
 - b) Indexing
3. Processing and sorting of the material
4. The outline or table of contents.

Decimal system

1. The types of scientific papers and the usefulness of the technical rules of academic writing.
 - 1.1. Types of scientific papers in the higher education area.
 - 1.2. Types of scientific papers in the wider intellectual area.
 - 1.3. The usefulness of the technical rules of academic writing.
2. Preparing to write.
 - 2.1. Finding a topic.
 - 2.2. Gathering the material.
 - 2.2.1. Identifying the literature.
 - 2.2.2. Indexing
 - 2.3. Processing and sorting of the material
 - 2.4. The outline or table of contents.