

How to write a research paper



**ASSIGN
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Writing a research paper is a creative process associated with the creation of a new product, for example, ideas, scientific positions, facts, laws, principles.

Therefore, it is impossible to reduce it only to the technical side of the matter. In the process of research, the student should develop in himself such qualities as the criticality of thinking, imagination, scientific perception of practice and practice-oriented perception of scientific positions. Research is the experience of the student's independent work.

The study of the algorithm of writing work is not only an interesting and cognitive process but also a work that allows determining the possibility of the manifestation of creativity in writing and design. Answering the question how to write a research paper, it becomes clear that the design of the research work can not deviate from the generally accepted rules, and the creative approach is welcomed within reasonable limits, in the case of the first experience of writing. Also, work on a specific topic allows the student to learn to use additional literature and systematize the selected material.

How to Choose a Topic for the Research Paper

The choice of the research topic is determined by the subjects of the courses studied, the research interests of the student, and his prospective specialization in the future. The topic can be subsequently deployed to the project. The research should demonstrate:

- sufficient amount of theoretical knowledge on a particular topic;
- ability to work with scientific, educational and reference literature;
- mastery of the student's research skills

- the ability to generalize and systematize the material on a selected topic;
- the ability to formulate the scientific apparatus of work;
- the ability to logically and competently present the material.

When determining the topic, it is necessary to take into account its relevance in the scientific and historical terms, the availability of sources and literature.

The topic should provide an opportunity to prove yourself as a researcher.

When choosing the topic of the project or research, its development in the literature is of great importance.

Typical Research Paper Outline

The most obvious way how to start a research paper is to create an introduction. The introduction is the face of work.

It provides a substantiation of the topic, its relevance, defines the goals and objectives of the study, methods, and provides a description of sources and a review of available literature. The main structural part of the work consists of chapters. Each chapter should cover an independent issue of the topic under study. When writing, you should try to maintain a logical connection between the chapters. The wording of topics, chapters, and sections should be specific and laconic. The content of chapters and sections should correspond to the names. Heads and sections must be ended with conclusions. In conclusion, the researcher draws conclusions on the work as a whole, summarizes the results of the entire study, outlines, if necessary, prospects for further study of the problem, shows its connection with the present, offers practical recommendations.

Top Mistakes Made by Students in Research Paper Writing

After considering the correct outline for research paper, it is also necessary to discuss what typical mistakes are often made by young researchers in the course of project development. Here is the list of them.

- Tasks do not match the problem;
- As tasks, the obvious stages of any scientific work are formulated (study the literature on the topic, master the methodology, develop recommendations);
- There are too many tasks;
- The work contains a very general overview, in which well-known facts are presented;
- In the review, there are no references to the source of information;
- Unscientific style of presentation of material;
- The introduction does not prove the relevance;
- The introduction does not state the purpose and objectives of the work;
- Inaccurate design of work;
- The work does not contain any personal results;
- Excessive volume of a paper;
- Supersaturation of the presentation with decorative elements and animation;
- Doing scientific work without understanding its essence;
- Inadequate methodology, i. e., it would be better to solve the problem in a different way;
- An incorrect technique, i.

e., The methodology is planned in such a way that it does not allow to obtain the necessary data;

- Insufficient/excessive description of the procedure;
- Data are not presented graphically;
- There are too many conclusions;
- The conclusions are too global;
- Conclusions do not follow from own data.

Methodology of Research in the Humanities and Technical Sciences

The research essay, unlike the usual abstract, is of a practical nature. It should show the ability to apply the methodological tools in the field of scientific knowledge in question. The practical component of the work does not always mean that it is necessary to conduct any experiments in the field or to put experiments. In this case, a practical orientation is understood as a description of the application of general scientific methods and specific to a given scientific branch.

Simply put, the study should describe the application and operation of methods in practice. All methods are divided into general scientific and sectoral. General scientific methods include:

- analysis;
- synthesis;
- induction;
- deduction;
- analogy;
- modeling.

All of the above methods are studied in the first courses of universities in the framework of compulsory disciplines of the general spectrum, in particular philosophy. In any textbook on philosophy, one can find the definitions of these methods of scientific knowledge.

These methods are suitable for any discipline from nuclear physics, to philosophy itself. For example, in the research essay on computer science on “ Computer viruses and methods to combat them,” we apply the analysis method to examine the characteristics, properties, and relationships that characterize all computer viruses, and on the basis of this, we will classify viruses for various reasons. Using the method of synthesis, we will consider all possible methods that are used today to combat viruses and choose the most effective ones. Induction, as a method of scientific cognition, will help us to consider various interpretations of the concept of “ computer virus” and on their basis to formulate one’s own.

Deduction will help to determine, based on all the characteristics that computer viruses possess, whether a particular program is a virus. The analogy method will allow us to conclude that it is possible to apply vaccination to computer viruses by installing an antivirus program that has all the symptoms of a virus but cleans the computer from unwanted ones. The modeling method will help us to develop an algorithm of actions to protect ourselves from unwanted viruses or even the antivirus program itself because we understand the principle of its functioning. All this applies not only to the exact sciences but also to the humanities. Let’s consider the study on psychology on “ Stress and its regulators.

” The method of analysis: we describe the properties and signs of stress and the characteristics of the mechanisms that regulate it. Synthesis: we consider which states are stressful, which are not and list them all. Method of induction: we study the theory of stress Selye, we indicate on the basis of what the scientist derived her basic postulates about stress and distress. Deduction: we give examples from psychological practice, from which we can see how stress was diagnosed in various cases. The method of analogy: we consider phenomena in living nature and conclude that stress, in addition to the psychological mechanism of regulation, has a physiological mechanism. Modeling: we imagine (model) possible psychological practices that could help reduce stress. In fact, the ability to operate with the above general methods of scientific knowledge helps in structuring the work.

Depending on which of the methods selected for use, the content (the title of chapters and paragraphs) of the abstract and, accordingly, the logic of the presentation, also changes. In the study of any discipline, there must be at least one of the general methods of scientific knowledge, since they are fundamental, without them the formation of specific methods is impossible. Let us now turn to the consideration of methods characteristic of certain branches of science. Science in general form is divided into natural, technical, social and humanitarian. Philosophy, mathematics, cybernetics and computer science stand apart because these sciences are so fundamental and are used in all spheres of human life activity. Therefore, the methods of scientific knowledge inherent in them are reflected in all other branches of knowledge. It is obvious that for each kind of sciences there are

also specific methods of cognition, which must necessarily be reflected in the writing of the research.

When writing an essay on the natural sciences, it is necessary to use the following methods, characteristic for this branch of scientific knowledge: observation, experiment, the method of hypotheses, axiomatic method. Private and special methods of natural science are probabilistic methods; methods used in the compilation and comprehension of empirical results – the only similarity and difference, the accompanying changes; methods of mental and mathematical experiments. However, this does not mean that you must conduct your own practical research and put a scientific experiment. You should only describe the application of a particular method and show that it works. Scientific methods of cognition of technical sciences include analytical research, full-scale experiment, mathematical and computer modeling of existing or design structures and technologies. The methods of scientific knowledge of the humanities and social sciences are quite similar, since it is impossible to study a person in isolation from the society, since the individual is a social construct, and many individuals form a society. Today it is customary to talk about social and humanitarian methods of cognition, thus integrating all methods of these types of scientific knowledge. Let's list them all:

- analysis of documents is the receipt of information about past events.

This also includes methods of content analysis;

- the methods of interviewing are based on people's statements in order to identify their opinions on any problems (questioning, interview);

- the method of expert assessments, the method of group discussions;
- the monographic method implies that a problem or group of problems is carefully analyzed on a single social object. The use of this method involves a hypothetical conclusion;
- the biographical method is a method of researching the subjective side of a person's social life (personal documents);
- projective methods are a way of indirectly studying the characteristics of a person based on the results of his productive activities in society;
- testing methods are standardized tasks, the results of which will allow measuring some personal characteristics;
- the method of sociometry presupposes the application of a mathematical apparatus to the study of social phenomena (allows one to obtain a quantitative estimate);
- iconography. This method involves a systematic study and description of images of any subjects or persons, the interpretation of their meaning, symbols, the nature of the features.