Seventh lecture

Basics of scientific research

The goal to be achieved:

- The student will be familiar with the basic stages of preparing scientific research

-Preface

- - The problem of research and the most important scientific components that govern it
- - The concept of the research problem
- - The research problem and its main questions
- - Principles to be taken into account when writing the problem
- - How to build the problem
- - Basis for choosing the "problematic" problem.

-Conclusion

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Introduction:

Any scientific research requires a set of methodological steps and procedures, and the researcher must adhere to and adhere to them from the beginning of the research until its end. As we know, every scientific methodological step must be taken into consideration, so that the researcher avoids many scientific problems and confrontations that may stand in his way at any time. time and without permission. In this lecture, we will present the most important steps in constructing a scientific research problem.

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The problem of research and the most important scientific components that govern it

1- The concept of the research problem

It is a gap that we are aware of and that we want to fill between what we know and what we judge to be other than what we should know and what is desirable, and the real problem should be:

- Relevant, i.e. researching whether there are good or logical reasons that motivate the researcher to study it. - A research problem is a real problem if there is currently no satisfactory solution for it, which leads us to say that there is a defect or gap in our knowledge. If there is a solution, then it is no longer a problem, but is now part of our knowledge ("what we know"), and thus It can be said that this problem is old and well studied.

- The scientific problem is what we can solve through the scientific method, otherwise we would say that it is unsolvable or that it is a problem of a metaphysical nature. When these three conditions are met, and it becomes a scientific problem then it becomes part of "what we want to know."

2- The concept of the problem

Perhaps the question that poses itself to the researcher and specialist is the meaning that the problem carries as a general concept before it becomes a field practice in the subject of research. If we ask about this meaning that it carries, we find different points of view that define this concept from a different angle, such as focusing on its components, its importance, and its role. ...etc., among the variables adopted in defining the problem by specialists: The problem is the short text that explains to the reader the problem that the research addresses.

- The research problem is the question for which there is currently no valid or completely satisfactory answer, or in other words, the problem explains the goal of your research, which depends on finding an answer to this question, and finding a solution to this problem.

The problem is a question or some questions revolving in the mind of the researcher about a mysterious issue that needs an explanation. The researcher seeks to find satisfactory and comprehensive answers to it. The research problem may be an event out of the ordinary that needs interpretation and clarification. The problem may also be a humanitarian or

administrative crisis. Or artificial, or it is a confusing or complex situation that is transformed or translated into a question or a number of questions that help direct the following stages. Here we put in the hands of researchers some questions that precede the title of the research to facilitate the process of formulating the problem:

•To what extent.... • What is the role of..... • What is the impact of..... • What is the impact of..... • How does it affect..... • What is the contribution of..... • What is the reality of.....• What is the importance of..... • What is the relationship of..... • How is..... evaluated? We point out here that it is not possible for the researcher to put a question to the problem that can be answered with a yes or no (a closed question). The researcher also avoids asking more than one question in the problem, or adding a variable that is not present in the title of the research, so that the topic does not become more complex.

2- The research problem and its main questions To examine the research problem, there are four questions that help us define it more accurately. Why do we care about this topic? What do we aspire to achieve? What do we know so far? What research question will we ask? While Dr. Rachid Zarouati believes that there are some landmarks that illuminate the path to the problem and prepare us to formulate a sound research problem, which are the keys to the problem, and by the keys we mean proposing techniques to understand the intent of the problem: Problematic what? What shapes? Why are there problems? What caused problems? Does solving the problem require solving the problems? And how? We know the answer to these questions when we deconstruct the term problem, using the following keys:

- The problem = the cause of the problem.
- The problem = the problem + the shapes.
- The problem: Definition of the problem.
- Problems: are problematic questions.

Based on this, the problem is the set of questions posed that indicate that it is the reason for the existence of the problem that is noticed by all people, while the problem that constitutes the problem is noticed only by the specialized researcher.

Principles to be taken into account when writing the problem

a. When writing the problem, we must take into account the fact that the reader does not know anything about the subject of the research, and he may not understand the meaning of the terms that were used in the problem, so it is better for the problem to be clear by defining and simplifying the terms, and using examples may be appropriate, which helps the reader. Understanding, in addition to defining terms, necessarily means that the researcher has good control over the variables of the study, which makes it easier for him and the reader to understand the goal and basic problem of the research.

B. We must adhere to the facts and theories resulting from scientific sources and exclude any personal considerations, so that personal feelings or private opinions must not be referred to, meaning that the researcher must be objective in presenting his problem and not be characterized by subjectivity or making moral judgments.

c. The problem must represent a reflection of scientific facts, through the use of information obtained from exploratory readings carried out by the researcher. Th. Scientific sources and references must be cited in the problem. In this case, the reading cards prepared by the researcher during exploratory readings may be useful.

d. The problem should not be a collection of collected quotations. Also, direct quotations should be avoided with the exception of definitions, as the researcher's own sources should be rephrased, and this means rephrasing the author's ideas without betraying the meaning.

H. The problem must be written in a scientific style, not in a literary or journalistic style.

Kh. The problem must be a scientific text, containing a set of scientific and theoretical facts adopted by the researcher. It must also contain information about previous studies that dealt with the same research problem and the results they reached, which requires the researcher to move away from the literary presentation method. By clarifying the terms and what they mean in the context of the research.

How to construct the problem

The problem is considered a very important element in any research (especially university memoirs and dissertations), as it represents the basis on which the study is based. Research

through the problem can tell whether the researcher has good control over the subject of his study or whether there are many gaps in the proposal, so The formulation of the problem must be comprehensive, meaning that it contains all the terms (variables) of the research, and that these terms must be specific and not cause any confusion or doubt to the reader. There is a difference between the "research problem." The first means the goal of the study, that is, the relationship on which the study is built. The research problem can be summarized in a question, and the problem is explained within the problem. For the latter, it is the text that the researcher formulates in order to clarify his perception and present the problem in a way. Scientific.

According to Chevrier, the problem should be:

- The subject of the study is well defined, the fruits of which appear through the problematization. The relevance and relevance of the research topic must be made clear, meaning that the topic and general question of the study must be of current interest to specialist researchers and decision makers.

- Within the framework of the general question, information relevant to the topic must appear (results of experimental and theoretical studies: events, terms, relationships, models, theories), whether in order to clarify the existence of a specific research problem or whether in order to provide elements of solutions that address the research problem, this The information represents a terminological framework or theoretical framework for the study.

- Highlight a specific problem.

- Formulating a research question in order to guide the data collection process and so that the answer to this question is what enables the researcher to solve the problem of the study.

Research problem

Those working in scientific research and researchers in methodology confirm that choosing and defining the research problem may be more difficult than finding solutions to it, as this choice and definition entails determining:

- The type of study that the student can do.

- Setting the research plan and the elements required to be used in completing the research.

- The nature of the appropriate curriculum for study.
- Appropriate tools for collecting field data and information.
- The type of data that should be obtained.

The importance of the problem stems from it being the primary driver of the research and the determinant of the rest of its parts. Once the student controls his problem and formulates it in a sound manner, he has determined what he wants? And what should be obtained, and this is what results in setting hypotheses to be selected in the field, as well as the goals to be achieved, thus enabling the researcher to know the direction of his research and the sources of his field and theoretical information, and narrowing the field of research, as it takes the student from the circle of generalities and doubts to the specificity to be studied, and thus focusing on what is important. In researching and abandoning the parts that are not useful in building the graduation thesis, their importance is highlighted in the following points:

- It contributes to defining the research framework for the researcher.
- It is the foundation and basis of the research, and it must exist. If the basis of the problem is a failure, the results of the research will be as well.
- The problem is addressed in the form of a question.

Basis for choosing the "problematic"

problem After learning about the problem and the importance it has as a scientific step in scientific research, we raise a question about the foundations by which the student chooses the problem of his study or the forms that should be researched. Among these foundations we mention:

- Newness of the problem
- The importance of the problem and its scientific value.
- The researcher's interest in the problem and his ability to study and solve it.
- Availability of experience and ability to study the problem.
- Availability of sufficient data and information from various sources.
- Feeling a problem

This is also the view of John Dewey, who believes that the problem stems from a feeling of a certain difficulty, and this feeling is linked to a mysterious situation that challenges the researcher's thinking and pushes him to clarify its mysteries and reveal it.

Good problem specifications

- The quality of clarity and accuracy: The research problem must not be vague or impractical.

- The characteristic of realism: It relates to the possibility of completing the research while taking into account the researcher's abilities and the resources available to him to address the subject, and the time available to him as well. Before formulating the problem, the researcher must ensure that these aspects are available so that he does not fall into dealing with a difficult question that requires a long time. And resources exceed his financial capabilities, forcing him to stop searching and thus wasting time and effort.

The characteristic of effectiveness: This characteristic refers, in one aspect, to the researcher's intentions to understand what exists in order to clarify it, and to extract some of the rules that control the phenomenon. Therefore, it is not right for the researcher to start developing his problem based on prior judgments in order to confirm it. On the other hand, he should The researcher must realize, while formulating the problem, that problems are often intertwined, complicated, and mixed with the general phenomenon, and therefore their true causes cannot be identified except after some kind of accurate diagnosis, just like the patient's high temperature, which does not represent the problem in itself, but rather is just a phenomenon. It expresses the existence of a problem (the disease that caused an increase in body temperature). Its causes must be searched for, an effective treatment must be prescribed, and treatment must be followed until complete recovery. Scientific research proceeds in this manner, as the problem is often felt by the researcher by noticing the emergence of a phenomenon accompanying it or An indication of its existence, but in reality it does not express the origin of the problem and studying it does not constitute a solution to the problem.

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Conclusion

In general, the problem forms the backbone of any scientific research, whether in the field of natural, human, or social sciences. Therefore, it must be clear in terms of the concepts and terms used as keys, and it must not be ambiguous, difficult to control, narrow, meaningless, and worthless. It must be cut off from the theoretical framework that contains its interpretation, in terms of intellectual origins and trends, and not from the field reality that embodies its dimensions and controls its procedural indicators.

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