ETHICS AND RULES OF SCIENTIFIC RESEARCH

DR. SATTAM A. ALMAKADANI
CONTENT:

- Scientific research:
  (concept, importance, objectives, and characteristics).

- Ethics of scientific research:
  (the most important ethics).

- Rules of scientific research:
  (basics, curricula, and tools).
SCIENTIFIC RESEARCH
CONCEPT OF SCIENTIFIC RESEARCH

Scientific research is a systematic, logical, objective, accurate, and results based on the foundations and evidence, (a set of rules used to reach the truth in science).
IMPORTANCE OF SCIENTIFIC RESEARCH

- Discover facts.
- Solve problems.
- Answer questions.
- Explain unclear phenomena.
- Modify incorrect facts.
OBJECTIVES OF SCIENTIFIC RESEARCH

- **Description**: Describe a phenomenon by gathering information about it.
- **Forecasting**: Develop scenarios and possibilities for future developments.
- **Explanation**: Explain a particular phenomenon by explaining how and why it occurs.
OBJECTIVES OF SCIENTIFIC RESEARCH

- **Evaluation**: Achieve certain goals for improvement.
- **Refutation**: Prove a certain hypothesis about a phenomenon by rejecting alternative hypotheses.
- **Validation**: To determine the fact that a subject has already been raised about a particular phenomenon.
CHARACTERISTICS OF SCIENTIFIC RESEARCH

- It arises from a question or problem.
- It requires a clear connection to well-defined objectives.
- It accepts certain assumptions.
- It requires all data interpretation to attempt to solve a problem.
FUNDAMENTAL OF SCIENTIFIC RESEARCH

- Define a problem.
- Define research objectives.
- To have research procedures.
- Collect research data.
- Do data analysis.
- Have research results.
ETHICS OF SCIENTIFIC RESEARCH
INTRODUCTION

The ethics of scientific research are defined as a set of principles and behavioral values that must be followed and applied by researchers and scholars.
The ethics of scientific research are essential and important on every single step of the process of conducting a research.
INTRODUCTION

It requires the researcher to take full responsibility for the ethical behavior of his/her research, ethics is the responsibility of the researcher.
Emphasis ought to be engaged on establishing the values of honesty, integrity, justice and transparency, while also establishing the concepts of “responsibility” and “accountability”.

ETHICS OF SCIENTIFIC RESEARCH
ETHICS OF SCIENTIFIC RESEARCH

The researcher bears full responsibility for each research or scientific experiment he/she carries out.
Concerning the results, they should be honestly transmitted. Encourage the disclosure and reporting of any ethical abuses in research behavior.
ETHICS OF SCIENTIFIC RESEARCH

Raising efficiency, quality and excellence in scientific research (honesty, accuracy, objectivity, credibility, advanced research skills).
ETHICS OF SCIENTIFIC RESEARCH

The necessity to apply disciplined ethical practices in scientific research in accordance with international standards and best practices.
ETHICS OF SCIENTIFIC RESEARCH

The researcher should be reasonable and neutral in his/her research and discuss others with scientific arguments.
ETHICS OF SCIENTIFIC RESEARCH

Not to involve in any research without having the experience and expertise in that specialization. The researcher should be characterized by a scientific modest personality and receptive to criticism of others.
ETHICS OF SCIENTIFIC RESEARCH

The researcher should base his/her research on honesty, from the beginning until the end.
ETHICS OF SCIENTIFIC RESEARCH

The researcher should endeavor to develop his/her knowledge and the extent of his/her work so others can benefit from it.
ETHICS OF SCIENTIFIC RESEARCH

The researcher should consider if his/her research requires conducting experiments on the environment, especially animals and plants, he/she must deal with the environment gently and according to the laws and regulations governing it.
Commitment to the scientific method, its steps and procedures in all stages of research. Researchers are regularly share their findings, data, methods, ideas, techniques and tools with others.
Accept disparagement and assessment of novel ideas, which pushes the development of science.
The researcher should adopt professional and scientific method and continuously seek to develop his/her research. Taking into account the scientific honesty, accuracy, and refer to the others in a way that preserves their rights.
ETHICS OF SCIENTIFIC RESEARCH

Refer to the assistance provided during his/her scientific research.
ETHICS OF SCIENTIFIC RESEARCH

To benefit from the opinions of others, especially those who have been experienced in research and have spent a lot of time in conducting scientific research. The necessity to apply impartiality and convey fact and data as it is.
ETHICS OF SCIENTIFIC RESEARCH

There is no science without scientific research, and there is no scientific research that has credibility without having ethics and values.
RULES OF SCIENTIFIC RESEARCH
RULES OF SCIENTIFIC RESEARCH

- Select a topic.
- Prepare a plan.
- Collect sources and references.
- Collect scientific material (data).
- Document and write the research.
KEEP IN MIND

- Novelty.
- Accuracy and clarity.
- Details.
- Complete all plan’s elements.
- Document the content correctly.
- Recent and variety of references.
ELEMENTS OF WRITING A RESEARCH PLAN:

- Research Title.
- Introduction.
- Previous studies.
- Research importance.
- Research aims.
- Methodology
- Timetable.
- List of references.
COMMON PROBLEMS RELATED TO THE DETERMINATION OF THE SUBJECT:

- Choosing a general and undefined topic.
- Choosing a topic that is far from your specialization.
- Choosing a topic that does not fit with the trends of the researcher.
- Choosing a topic that does not have sufficient references.
- Choosing a topic that does not fit the interests of your advisor.
IMPORTANT QUESTIONS BEFORE SELECTING A TOPIC:

- Can I write a research topic?
- Will it add some to knowledge to the field of interest?
- Is it worth your effort?
- Do you have the ability to do everything related to it?
- Can you do everything to do and complete the research?
ORGANIZATIONAL CONTENT OF SCIENTIFIC RESEARCH:

- Abstract.
- Introduction.
- Previous studies.
- Methodology
- Results.
- Discussion.
- Conclusion.
WHEN WRITING REFERENCES, CONSIDER THE FOLLOWING:

- Although different methods are used to document references, they should contain: Author Name(s), Research Title, Journal Name, Publisher, Year of Publication, Page Numbers.
- Notice the alphabetical order.
- Follow one of the accepted scientific methods.
- Write down all the resources used.
TIPS

- Choose regular hours per week for writing and stick to it, pick the most appropriate time.
- Exchange opinions with colleagues and specialists.
- Read the most recent scientific references related to the subject of research.
Avoid long paragraphs and sentences. Try to make paragraphs easy to understand.

Read the final version of your research several times, and benefit from the comments and responses of your fellow researchers and other specialists.
What makes a great researcher?

- Great knowledge.
- Good ideas.
- Great communication.
- Good writing.
- Good plan.
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<tr>
<th>Subject Matter Is Complex</th>
<th>Average Sentence Is Easy to Understand</th>
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THE MOST IMPORTANT THING IS TO JUST BE GOOD AT WHAT YOU DO