METHODS OF AcQUIRING KNOWLEDGE

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According to Helmstadter, (cited in Christensen 1997), there are at least six different approaches to acquiring knowledge. These approaches are the non-scientific approaches, tenacity, intuition, rationalism, empiricism, authority and the scientific approach (science). This section will discuss in details these ways of acquiring knowledge.
At the end of this session, you will be able to:

- Mention and explain the five non scientific means of knowledge acquisition.
- Explain why the other five approaches are not considered as scientific.
- List some of the shortcomings of the non scientific approaches.
- Explain the characteristics and assumptions of science.
- Explain why the assumptions are necessary and important.
- Discuss the advantages of the scientific approach.
The key topics to be covered in the session are as follows:

- **Part I** - The Non-Scientific Methods
- **Part II** - The Scientific Method
- **Part III** - Characteristics of the Scientific Method
- **Part IV** - Assumptions of Science
- **Part V** - The Scientific Steps
Reading List

- The session notes titled “*methods of acquiring knowledge*”
Part I - The Non-Scientific Methods
To furnish the means of acquiring knowledge is... the greatest benefit that can be conferred upon mankind. It prolongs life itself and enlarges the sphere of existence.

(John Quincy Adams)
The Non-Scientific Method

- **Personal experiences** (limited in scope and could be misleading)
- **Informal knowledge** (knowledge gained from others e.g. *authority*)
- **Commonsense knowledge** (philosophers, poets, novelists, etc). Commonsense knowledge often contradicts itself.
- **Intuition:** the act of coming to direct knowledge or certainty without reasoning or inferring.
The Non-Scientific Method

- **Tenacity**: the state of holding fast unto something.
- **Rationalism**: the use of reasoning to arrive at a conclusion or knowledge.
- **Empiricism**: that if something is experienced, then it must exist and therefore the experience must be valid and true.
- **Authority**: from persons who have some kind of influence over us.
Part II - The Scientific Method
The scientific method
The Scientific Method

**science**

- Means “knowledge” (Latin word)
- It is a series of steps, procedures and approaches that are used to gather knowledge.
Part III - Characteristics of the Scientific Method
Characteristics of the Scientific Method

1. Objectivity
2. Control
3. Operationalism
4. Replication
5. Openness
6. Empirical approach
7. Invariance
Part IV - Assumptions of Science
Assumptions of Science

• **Reality**: That science can bring out underlying fact, no matter where it is.

• **Rationality**: There is a logical basis for everything.

• **Uniformity**: That there is order in nature and that natural events follow some known patterns and principles.

• **Causation**: Everything that happens has a cause.

• **Discoverability**: Science must help discover or unearth every underlying cause(s).
Part V - The Scientific Steps
The Scientific Steps

1. Careful Observation
2. Problem identification
3. Literature review
4. Hypotheses formulation
5. Design of the study
6. Data gathering/analysis
7. Interpretation/conclusions
The Scientific Steps

Problem identification

• Based on what has been observed
• Must be interesting
• Must be relevant to society
• Must be clearly stated
The Scientific Steps

**Literature review**

- Search to see what others have done.
- See what recommendations have been made in other studies.
- Is it worth going on with the research?
Formulate hypotheses

- These are testable statements
- Must be precise and clear
- Must be measurable
- Could be based on a theory or common beliefs
Design the study

• How do you plan your study?
• How will you gather data?
• Who will be your participants/subjects?
• What method will you use to collect data?
• What will you be asking them?
• Will it be an experiment or a questionnaire study?
Gather/Analyze data

- Collects actual data
- Analyze data collected
- By use of frequencies, percentages, means, and inferential statistics
- Support or reject your hypotheses
Interpretation/Conclusion

• Interpret your findings (what do your results mean?)
• Discuss your findings
• Draw your conclusions
• Make recommendations
Psychology and science

• The issue of whether psychology is a science can be resolved by an understanding of what constitute science.

• Science is not a specific subject but ways or procedures of acquiring knowledge and gathering information.

• It consists of combinations of assumptions characteristics and procedures.

• There is the need to determine whether the assumptions, characteristics and procedures of science fits into psychology.
• Psychology also makes, accepts and follow the assumptions of uniformity, reality, rationality causation, discoverability.

• The assumptions become the guiding principles in the everyday practice of psychology.
• The characteristics of science are aimed at achieving some goals and together they reduce bias to the barest minimum.

• All these characteristics are integral part of psychology and helps the field in making valid and objective conclusions on human behaviour.
• Psychologists begin their inquiry by
  ❖ Identifying problems,
  ❖ Formulating hypothesis,
  ❖ Collection and analysis of data on the identified problems,
  ❖ Discussion of the findings and
  ❖ The dissemination of findings for public consumption.
IS PSYCHOLOGY A SCIENCE?

- Psychology is a science because it accepts the scientific assumptions, adhere to the characteristics and follow the scientific steps in studying human behaviour.