DESIGN METHODS

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Knowledge, Logic and Philosophy

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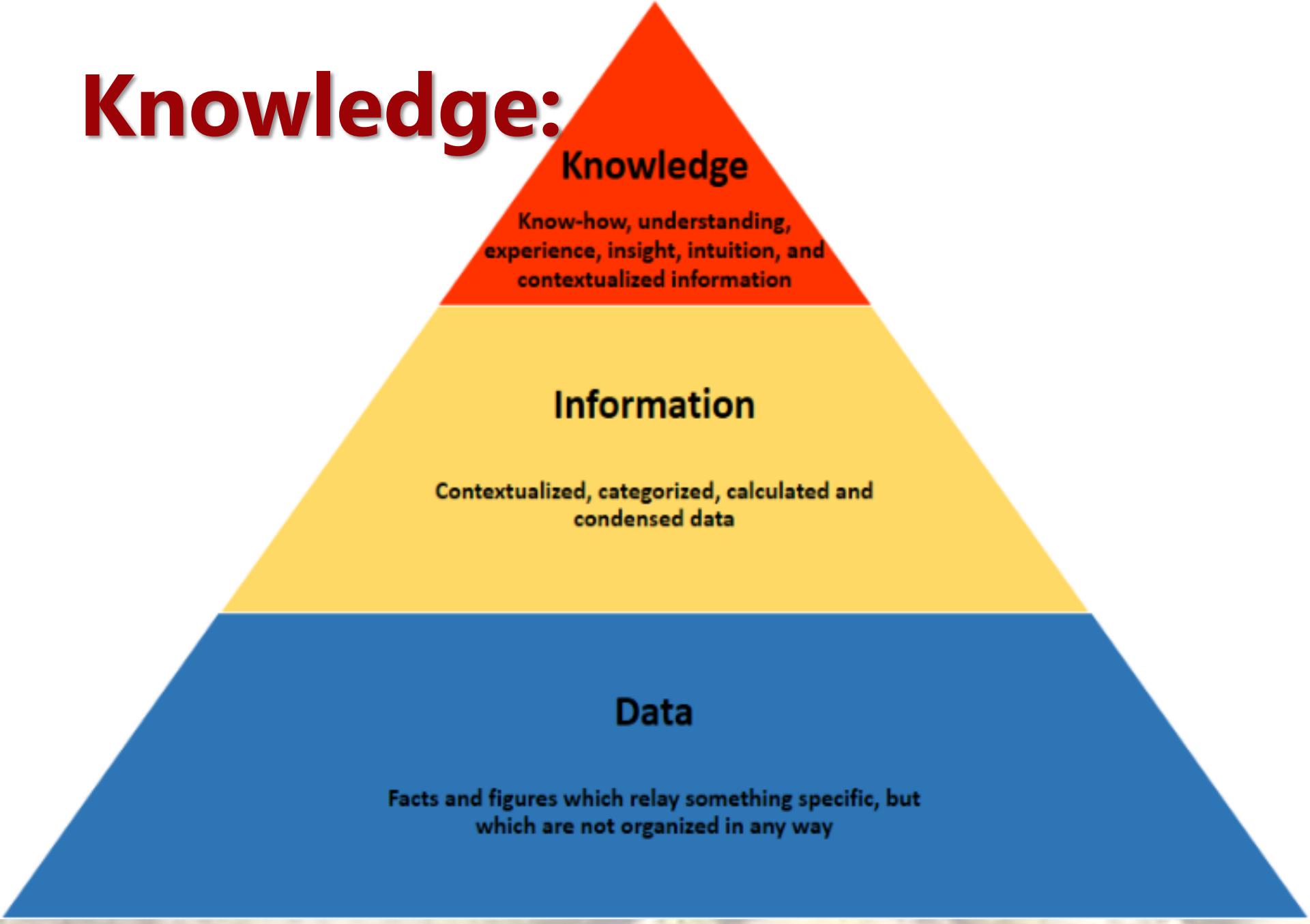
Knowledge:


Knowledge
Know-how, understanding, experience, insight, intuition, and contextualized information
Information
Contextualized, categorized, calculated and condensed data
Data
Facts and figures which relay something specific, but which are not organized in any way

Examples..

Data	101
Information	BBC1 channel number
Knowledge	Sky number to input to get BBC1

Data	The amber light is the data
Information	The information is that you will need to stop
Knowledge	The knowledge is how to stop that vehicle you are driving and when you need to stop braking to stop the vehicle where you need it to.

Examples..

Data	46, 54
Information	Scores for team 1 and team 2, respectively, in a quiz
Knowledge	Team 2 won
Data	Collect rainfall record on daily bases is data
Information	This data is processed by year and month , it is an information
Knowledge	When this information is analyzed using analytical tools, it revels rainfall pattern. This pattern is knowledge

Ways of acquiring knowledge:

- Chance.
- Trial and Error.
- Authority and Traditional.
- Speculation (estimation),
- Argument and Dialogue.
- Scientific Methods.

LOGIC and PHILOSOPY

Logic is a study with a long history, it goes back to the **ancient Greeks**.

PHILOSOPY:

The ancient definition is the traditional concept of **Philosophy** which comes from the Greek terms

- "**philos**" meaning "**love**".
- "**sophia**" means "**wisdom**" or "**knowledge**".

Therefore:

Philosophy is ordinarily and etymologically (derivatively) interpreted as the ***love for wisdom or knowledge***.

It is a human activity in which the search for the truth of things

Branches of Philosophy:

1. **Ontology:** (the branch of metaphysics dealing with the nature of being).

- Tends to understand the nature of the real Universe.
- It tries to introduce intellectual problems of great importance to all thinkers:

  Is the universe basically physical or Spiritual?

Branches of Philosophy:

2. Epistemology: (Theory of Knowledge)

- Especially with regard to its methods, tends to investigates the nature and scope of knowledge in different branches.

Epistemology → Theory of Knowledge → Methodology

Branches of Philosophy:

3. *Axiology*: (the philosophical study of value)

(the study of the nature of value and valuation)

- **Dealing with Values such as ethics, aesthetics and logic.**
- Its role in maintaining the ideals and revealing what are the absolute values that everyone seeks to achieve in their lives. There are three basic values:

a. **Ethics**

b. **Aesthetics**

c. **Logic**

Branches of Philosophy:

3. Axiology:

a. Ethics:

- It investigates the notions of good and evil, right and wrong, duty and obligations … etc.

- It tries to clarify general questions as :

Are there objective standards of goodness and rightness?

Branches of Philosophy:

3. Axiology:

b. Aesthetics:

- Deals with the notions of beauty and ugliness and other notions related to the value of works of art.

- ✓ What is the nature of beauty?
- ✓ Are there objective standards of beauty, or is beauty entirely a matter of individual taste?
- ✓ Can we always prove that a thing is beautiful?

Branches of Philosophy:

3. Axiology:

C. Logic:

- It is about correct reasoning by the act of argument.
- Arguments are important in everyday life.
  We use them not only to convince others but also to come to decisions and to determine facts.
- Logicians are not interested in psychological causes for our conclusions. They are interested in our rationalizations (justifications) of these conclusions.

Branches of Philosophy:

3. Axiology:

c. Logic:

- Arguments should be free of any emotional involvement with the conclusion we attempt to establish.

- All reasoning is thinking … But not all thinking is reasoning.

Reasoning: the act of thinking about something in a logical and reasonable manner.

Logic and Philosophy:

- Logic has been introduced to students since the establishment of the first universities about 900 years ago. The reason of that is:

  - Logic (the critical study of reasoning) is a subject that has both theoretical importance and practical benefit.
  - A person who can recognize and avoid logical mistakes.
  - In reasoning, you will be able to think more clearly and correctly … more soundly and surely.

Logic:

Comes from the Greek word "***Logike***" which means the (Art of Reason).

Derived from the Greek word "***logos***" which means - study, reason or discourse.

LOGIC is the ***science*** and ***art*** of correct thinking.

Logic :

- It is a ***SCIENCE*** because it is a systematic set of facts and logical principles that govern true thinking.
- It is an ***ART***, logic is a "***technic***" and it teaches how to make a good argument.
- It is often called the art of arts because it develops and perfects the thought that all artists need in their work.

Logic :

- Logic is the science and art of *correct thinking (Gaston Bachelard).*

- Logic is the study of the methods and principles used to distinguish good (***correct***) reasoning from bad (***incorrect***) reasoning.

- **It is the science that searches for the correct and corrupt thought, building laws that defend the mind from making mistakes in judgments.**

What is correct reasoning ?

If the premises (assumptions) provide sufficient reasons for accepting the conclusion.

If the premise is correct, then the conclusions are true, then the logic is correct, otherwise, it is incorrect.

Objectives of logic:

1. Sharpen the ***intellect*** of the students (sharpen students' minds).

2. Develop their ***learning*** ability.

3. Strengthening their ***understanding*** and promote ***clear thinking***.