

**SOURCES OF KNOWLEDGE FOR RESEARCH**

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**Introduction**

The only good is to Know and the only evil is Virtue, this is a statement of **Socrates** from his theory of Knowledge. According to him it is not enough to live life but important to live good life, good life means happy and satisfied life for which Knowledge of good life is important to mankind. Hence, He believed that Knowledge is Virtue, Knowledge is excellence and



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is source of Knowledge. Now we can relate this to prosperity and well-being of people which come from creation, sharing and use of Knowledge in Knowledge society.

Today in this Knowledge society, Knowledge is considered as wealth, product which is generated , innovated and developed through research and research is a process where the Knowledge is generated, enriched, tested.

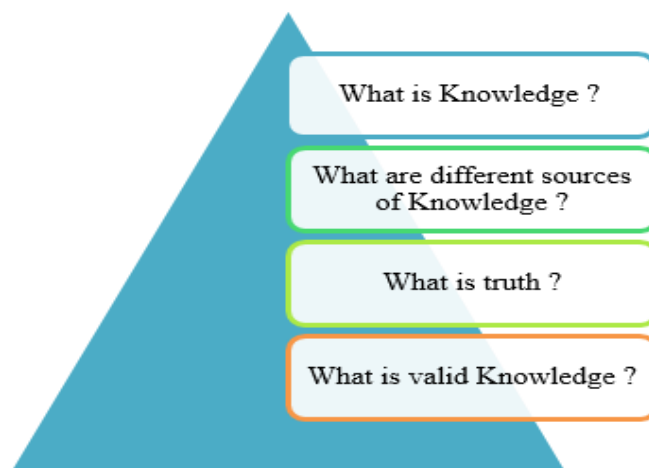
Research is defined as the creation of new Knowledge and /or the use of existing Knowledge in a new and creative way so as to generate new concept, methodologies and understanding. This may includes collection, analysis, synthesis of previous data to lead new and creative products,

Knowledge in this Knowledge society is valuable asset and this is a society that values and acknowledges the influence and contribution of Knowledge for National progress and Global development.

The whole education system from pre-primary to higher education level is a process where students gain Knowledge, skills, values, attitude etc from and of different subjects

Epistemology is the basic branch of Philosophy that investigates the origin, nature, methods and limits of human beings. Epistemology is a branch of Philosophy which focus around

questions like -



### Knowledge in different Western schools

Meaning of Knowledge reflected in Western Schools of Philosophy as Idealism, Pragmatism, Naturalism, Realism, Positivism and Existentialism etc,

**Idealism** - It believes that all Knowledge is independent of sense experience. The act of knowing takes place within the mind. The mind is active and contains innate capacities for organizing and synthesizing the data derived through sensations.

**Pragmatism** - It believes that knowing is an ongoing process of Inquiry. This school states that nature of Knowledge, language, concepts, meaning belief and science are all best view in terms of their practical uses and successes.

**Naturalism** - It believes that senses are the gateways of real Knowledge and exploration, and ultimate reality lies in the nature of matter.

**Realism** –It prefers hands on experiences for the purpose of learning. It believes in direct experiences.

**Positivism** - This Philosophical view assumes that Knowledge is positive, posterior and exclusively derived from experiences of Natural Phenomena.

**Existentialism** - It believes that existence central to the human being who is always particular and individual. Truth is factual and it is matter to be realized and experienced.

### Meaning of Knowledge reflected in Indian Philosophy –

According to Indian Philosophy Pramana (Sanskrit – प्रमाण) it literally means proof and which can leads to Knowledge. There are six sources of Pramana as Perception (Pratyaksha), Inference (Anuman), Comparison and Analogy (Upamana), Postulation, Derivation from



circumstances. But In Indian Philosophy there is much disagreements about the veritibility , validity, definition , nature and limitation of these different means of Knowledge . Knowledge is defined as veridical cognition that has been produced in right way. In Indian Philosophy the way in which such cognition is generated is referred as Knowledge episode. All Darshan in Indian Philosophy have their own theories of Truth , but Knowledge is considered as something that has arisen from Truth hence, Epistemology , the theory of Knowledge have an important position in all Indian Philosophy .

In Bhagwatgeeta the importance of Knowledge is given as, ‘न हि ज्ञानेन सदृश्यं पवित्र मिह विद्यते!’ which means that there is nothing in this world sacred than Knowledge. The person who achieves such Knowledge realizes the truth The Knowledge is key to open the door of wisdom, prosperity. It is a power. The knowledgeable individual has a control over the situation, over its life. It’s all about knowledge that made our life much easy and sophisticated than past through scientific discoveries and technology.

Thus, Western as well as Indian Philosophy believes sources of knowledge mostly as real and direct experience

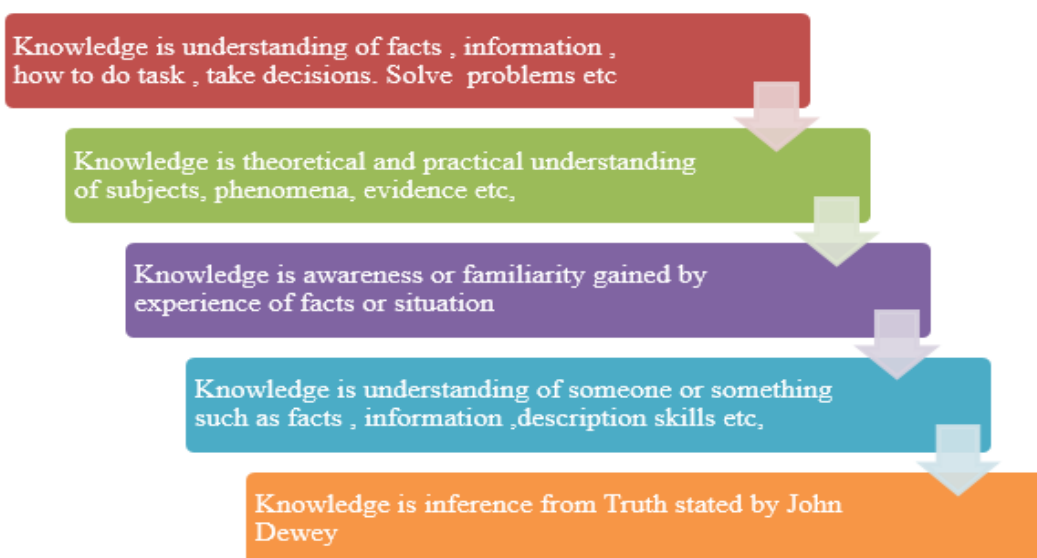
### **Meaning of Knowledge**

Knowledge is familiarity, awareness or understanding of someone or something such as facts (propositional Knowledge), skills (procedural Knowledge) or objects (acquaintance Knowledge). The focus of National policy of Education is to make India the Knowledge capital of the world.

Human beings have immense thirst for Knowledge. It is gift from God and ignorance is the curse.

The man with improper Knowledge or no Knowledge is dangerous for himself as well as to society. Knowledge makes the people to lead the society.

A man is great by Deed, not by Birth (Chanakya). This Deed comes from Knowledge which get from different sources.



**National Curriculum Framework (2005)** states that knowledge can be conceived as experience organized through language into patterns of thought (or structures of concepts), thus creating meaning, which in, turn helps us to understand the world we live in .I t can also be conceived of as patterns of activity, or physical dexterity with thought, contributing to acting in the world and creating and making of things. Human beings over time have evolved many bodies of knowledge which include a repertoire of ways of thinking, of feeling and of doing things and constructing more knowledge. This extract from NCF 2005 implies that it is important for children to participate in the process of knowledge creation.

Human beings need nutritious food for their healthy existence like this their mind also need Knowledge as a nutritious food for their healthy and brilliant functioning.

### Types of knowledge

The expert in the field of education divided knowledge into three types.

1. **Personal knowledge** – This is knowledge by acquaintance. If person experience some phenomena and describe, this will be personal knowledge.
2. **Procedural knowledge**- This knowledge required to perform a task. It is also called imperative knowledge e.g. computer operation, driving car etc.
3. **Propositional knowledge** – This is knowledge about different things. This knowledge is of four kinds as
  - a) **Logical knowledge**-This type of knowledge shows relationship between two statements and draw conclusions based on it e.g.



1) All quadrilaterals have four sides

A square is a quadrilateral,

Hence, square has four sides.

2) All metals are good conductors of electricity

Copper is a metal

Hence, it is a good conductor of electricity

This type of knowledge mainly found in mathematics, philosophy, grammar etc.

**b) Systemic knowledge** - - This kind of knowledge results from learning a system of words or symbols and examining how they relate to one another . E.g.  $4 \times 5 = 20$ , this is systemic knowledge because we know numbers 4 and 5 and operation as Multiplication and signs of multiplication ( $\times$ ) and is equal to ( $=$ ).

**c) Empirical knowledge** – This knowledge we gain from sensation from five senses. The reflection which is tested logically and through experiments , observations , formulation and testing of hypothesis results in empirical knowledge e.g. Ohm's Law, Newton's Law of Motion etc.

**d) Semantic knowledge** – This is knowledge of meaning of words possessed by a person. This is also practical knowledge that person has to acquire.

### Sources of knowledge for research-

There are two ways of knowing the world around us-

**1) Every day experiences** – Common sense, Authority, Prior knowledge, tenacity etc. are the sources of knowledge those one gains through every day experiences.

**2) Scientific method** – This is one of valid source and structured approach for knowledge generation hence, a researcher should be familiar and trained with this source of knowledge

Both these approaches are used by the researchers of different disciplines for their Qualitative and Quantitative and Mixed research designs.

We can also classify them as Non-formal and Formal or Non-scientific and Scientific sources of knowledge generation. All these sources are discussed as follow –

### Every day experience/ Non-formal / Non-scientific ways /sources for Knowledge generation for research-

1) **Senses** – Five senses of human being are the gateways for acquiring information and



- knowledge e.g. In Empirical research observation of phenomena is essentials.
- 2) **Authority** – while doing research, there are many occasions where a researcher needs authoritative knowledge. Sometimes researcher needs official information, then they can conduct interview of experts or officers etc. For getting authentic knowledge researchers depends on the authorities. In educational research validity, reliability of research tools by the experts is nothing but type of authoritative knowledge.
  - 3) **Tenacity** – Commercial advertisements slogans of the Abhiyan or movements or political parties etc. The repetitive propaganda of these matters psychologically forces the people to accept these. Tenacity can be useful data in political and marketing research etc.
  - 4) **Prior knowledge**- Priori knowledge means before. The knowledge which has universal validity and cannot be proved future or do not need any empirical validation e.g. Sun rises in the East etc. Researchers need such source of Knowledge to support their conclusions.
  - 5) **Posterior knowledge** – This type of knowledge is based on observation and experience and stress on accurate observation e.g. Ice melts, metals conduct heat. These phenomena give factual information whose truth or falsity can be decided only through observation and verification.
  - 6) **Superstitions** –This knowledge source is subjective but this source is useful in development of scientific attitude to prove their it's falseness. Researcher from the discipline of Social sciences, Education, Natural sciences use these data.
  - 7) **Feelings** – This knowledge is not based on observation or hypothesis testing but in the field of Psychology during introspection method, feelings are useful source. Some psychological tests are also available to measure feelings of persons in specific situations.
  - 8) **Faith** – Researchers has some beliefs, attitude accordingly he or she acts and perform their tasks in research.
  - 9) **Traditions** – Most of the social knowledge is preserved and transmitted from one generation to another e.g. Manners, etiquettes, Social skills, life skills, values, Social norms, traditions. Indigenous knowledge sometimes part of traditions and culture. This type of knowledge source is important in Qualitative researches.
  - 10) **Experience**- Personal as well as professional experience of the researchers contributes much in doing research.
  - 11) **Naturalistic Inquiry** – It is one of the Qualitative research methods where researchers

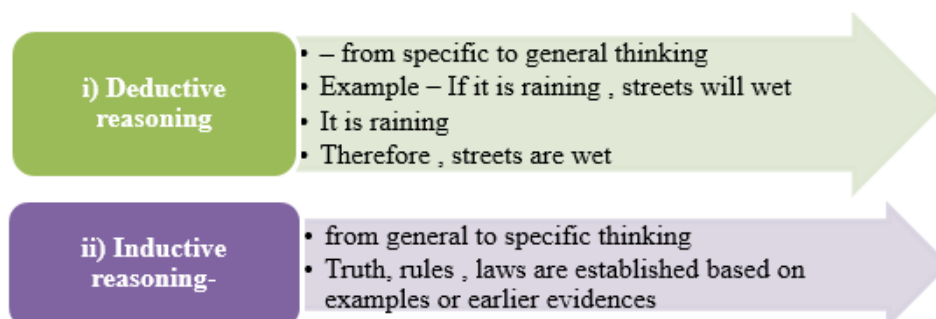
solve problems in natural setting.

- 12) **Trial and Error** – According to Thorndike a well known Psychologist , individual learn more things through trial and error method .In first attempt only one cannot learn certain skills but while doing practice and practice . In research also while conducting experiments many times researchers experience this situation, if we see the history of innovations by the scientists they had gone through trial and errors. Practical knowledge related to skills, use of computers, smart phones, smart boards, games sports in such activities individual learn by trial and error.
- 13) **Intuition** – The knowledge gains through insights is intuition. This is the situation where an individual Experience sudden answer or way to a problem faced by them, e.g. Archimede’s Principle, Lord Budhha’s preaches etc. In our life we also experience such insights.
- 14) **Online resources** – Nowadays major part of research depends on the internet sources, lot of information is available on finger tips but sometimes it may not be authentic. Researchers can try to search primary sources of information for their research.
- 15) **ICT sources** – You tubes, videos, various software, Radio are nonformula ways of sources of knowledge those researchers uses for their research.

### **Scientific/ Formal ways or sources of knowledge generation for research**

- 1) **Rationalism** – This involves logical reasoning through which ideas are precisely stated and logical rules are applied to arrive logically sound conclusions.

**There are two ways of logical reasoning –**

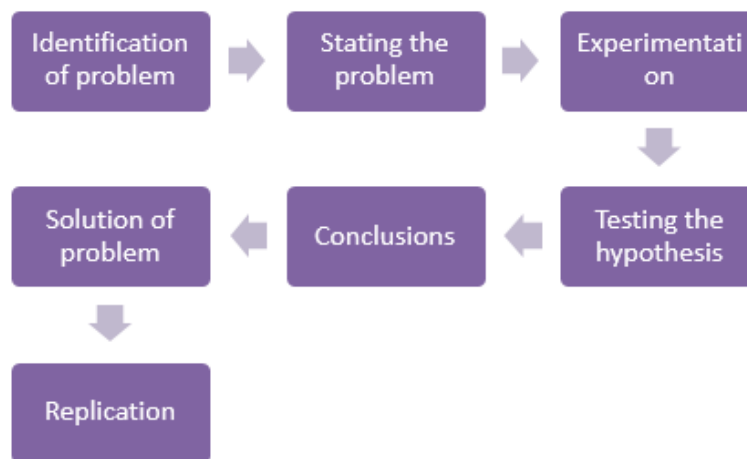


- 2) **Research** – Research is most vital tool, process, and activity of knowledge generation. We can say that all scientific and technological progress is because of research. It is scholarly activity and only trained persons can do it because it requires certain skills, competencies.

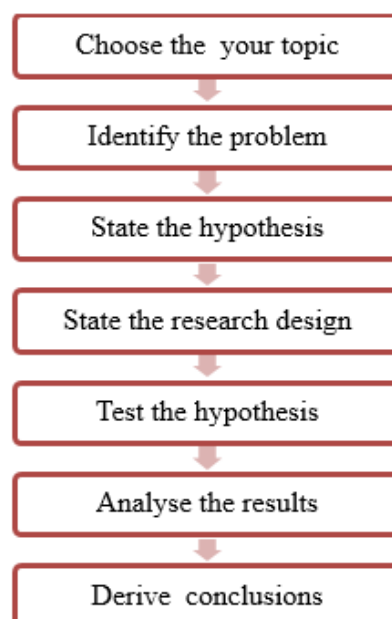
As per the purpose of the research it is classified into fundamental, applied and action research.

Mostly in Natural sciences fundamental research is carried. Its main aim is to add knowledge in the discipline, it develops certain theories, rules which are universal in nature and which are applied in day today life in practice. We say it as applied research.

Research is scientific method or approach to solve problems and generation of knowledge. The main stages of research are-



These stages may differ from discipline to discipline, but research in any area has to be carried out scientifically. In Educational research the steps of research in general are







Thus, the major purpose of the research is generation of knowledge, application of knowledge but, whatever may be the purpose, the researcher can use every day experiences but has to follow scientific method. They use Formal as well as Informal sources of Knowledge for their research.

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