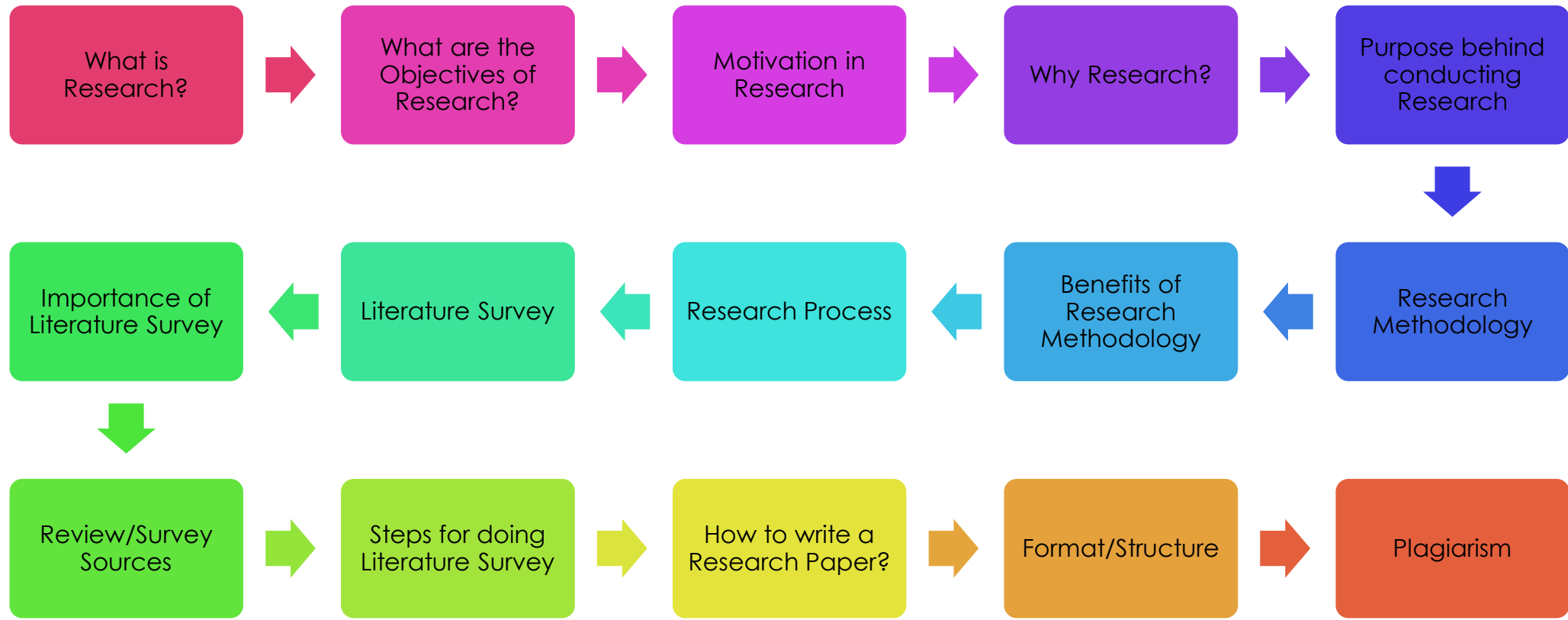


Research paper writing



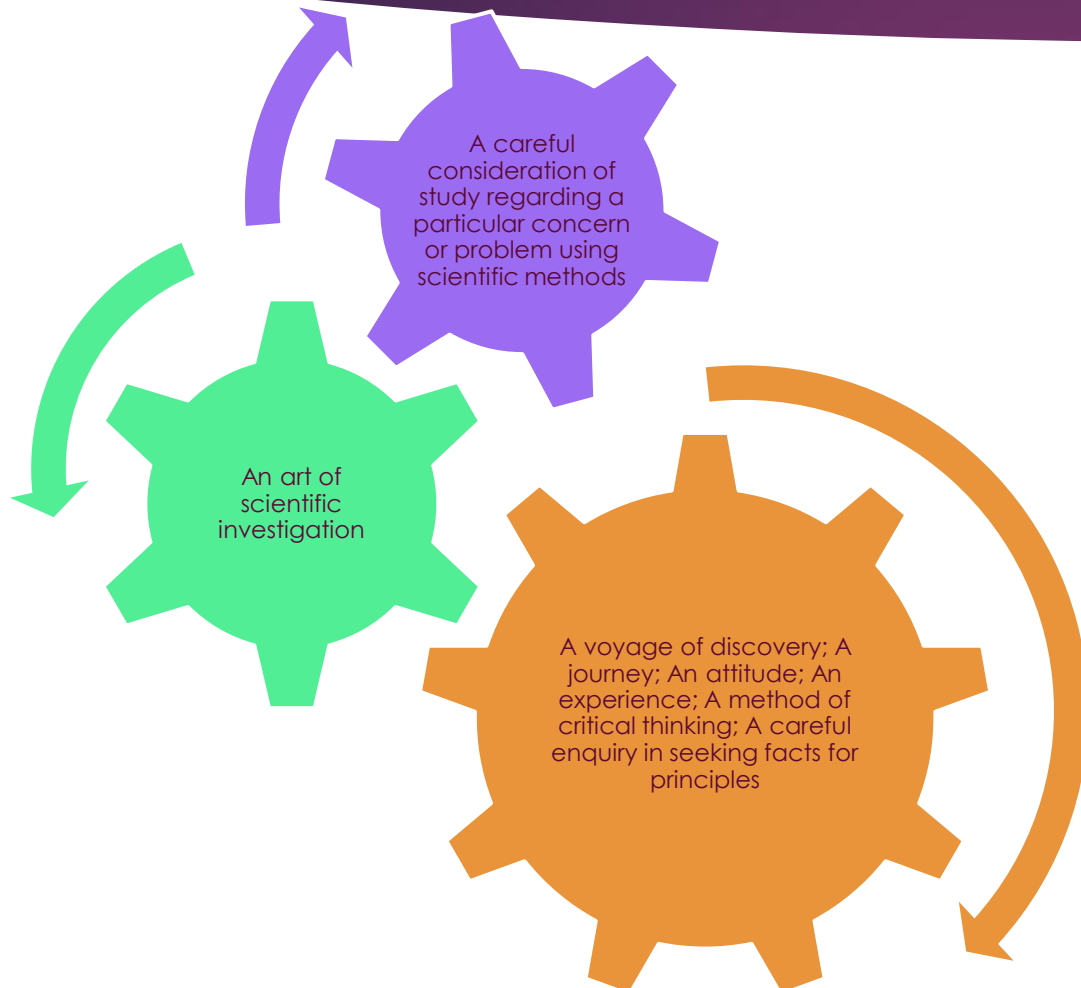
RESEARCH PAPER WRITING







Definition



Characteristics of Research



Must have a systematic approach (**..for obtaining an accurate data. Rules and procedures are an integral part of the process to set the objective. The Researchers need to practice ethics and a code of conduct while making observations or drawing conclusions.**)

Logical Reasoning (**Research is based on logical reasoning**)

The data or knowledge that is derived has to be in real time from actual observations in natural settings.

In-depth analysis of all data collected. (**There is an in-depth analysis of all data collected so that there are no anomalies associated with it.**)

Must ensure creating a path for the generating of new questions. (**Research creates a path for generating new questions. Existing data helps create more opportunities for research.**)

Research is analytical in nature. (**It makes use of all the available data so that there is no ambiguity in inference.**)

Accurate (**Accuracy is one of the most important aspects of research. The information that is obtained should be accurate and true to its nature.**)



Quantitative Research

It is a structured way of collecting data and analyzing it to draw conclusions.

Online surveys, questionnaires, and polls are preferable data collection tools used in quantitative research.

Quantitative research involves a larger population

6

SURVEY



Qualitative Research

It is a process that is about inquiry. It helps create in-depth understanding of problems or issues in their natural settings.

It is heavily dependent on the experience of the researchers and the questions used to probe the sample.

The sample size is usually restricted to 6-10 people.



Methods used for Qualitative Research



Objectives of Research

Defining and
Redefining
the problems

Formulating
the hypothesis
or suggested
solutions

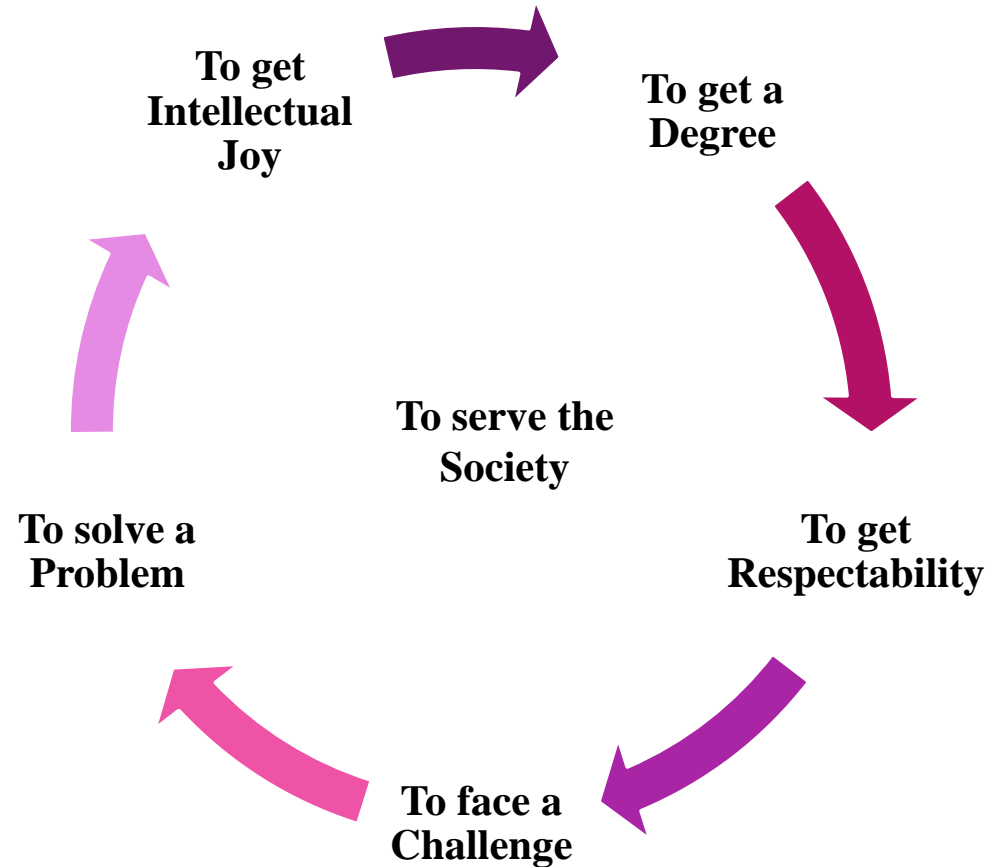
Collecting,
analyzing and
evaluating the
data

Making
deductions and
reading
conclusions

Testing the
conclusions to
determine
whether they fit
the formulating
hypothesis



Motivation in Research



Why Research?

Exploratory

- Uses Unstructured research approach
- Research is conducted through asking research questions
- Conducted at early stages of decision making

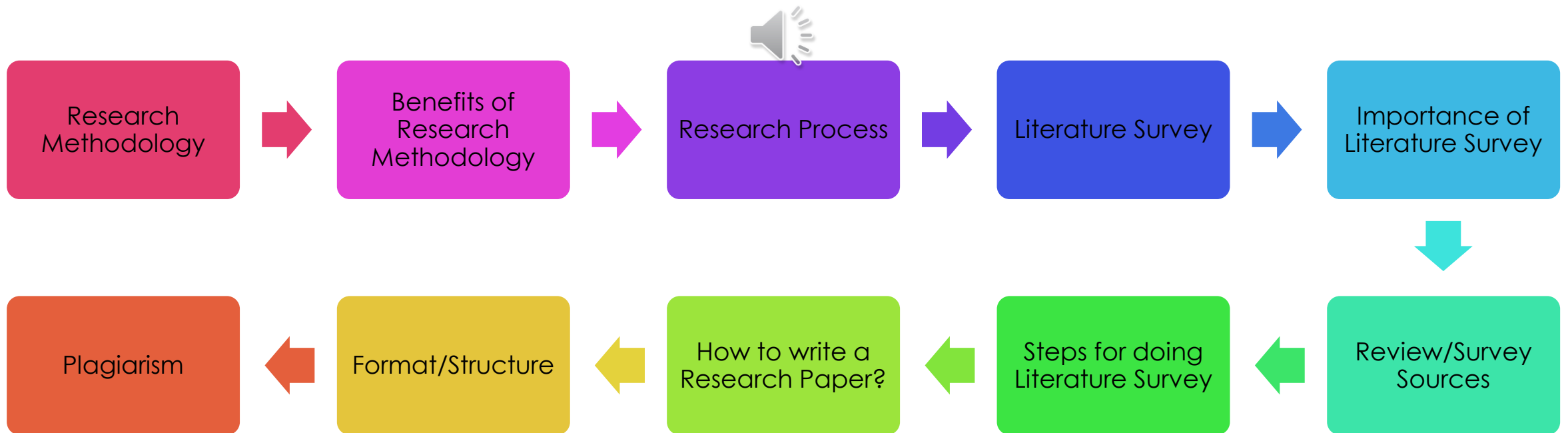
Descriptive

- Uses Structured approach
- Research is conducted through asking research questions
- Conducted at Later stages of decision making

Explanatory

- Uses Highly structured approach
- Research is conducted by using research hypothesis
- Conducted at Later stages of decision making





Research Methodology



Science of studying how Research is done scientifically



Way to systematically solve the research problem by logically adopting various steps



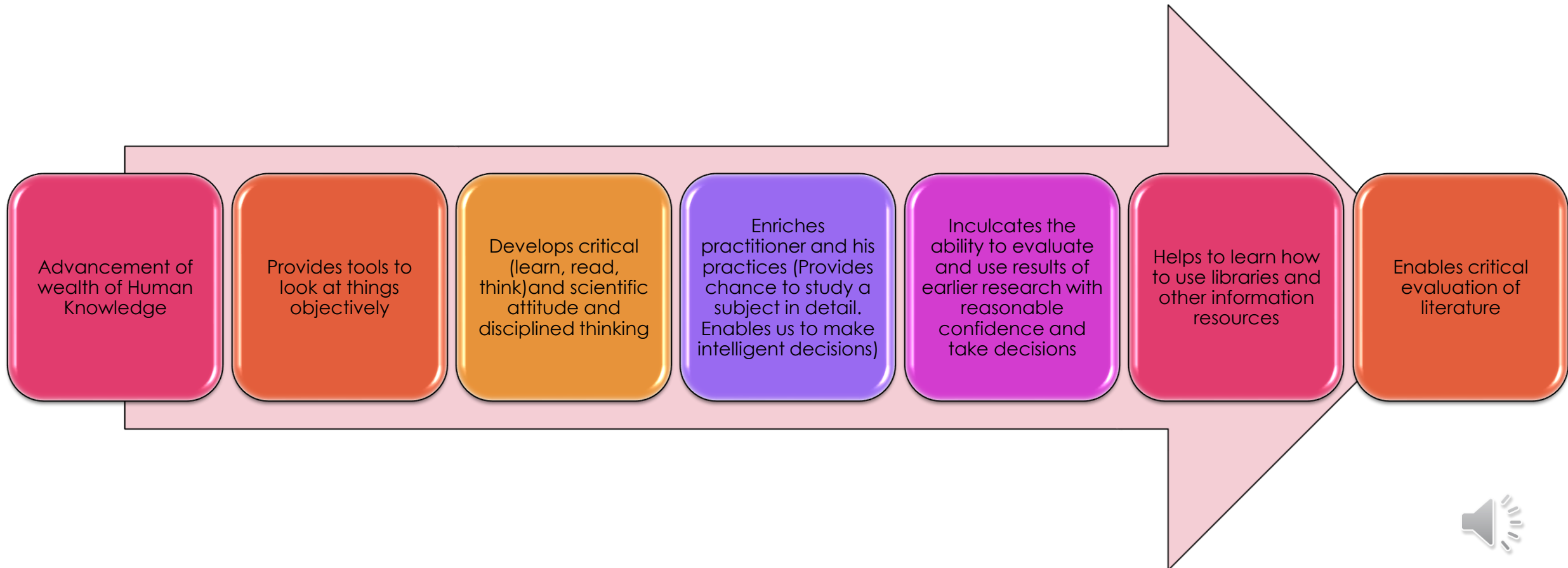
Helps to understand not only the products of scientific inquiry but the process itself



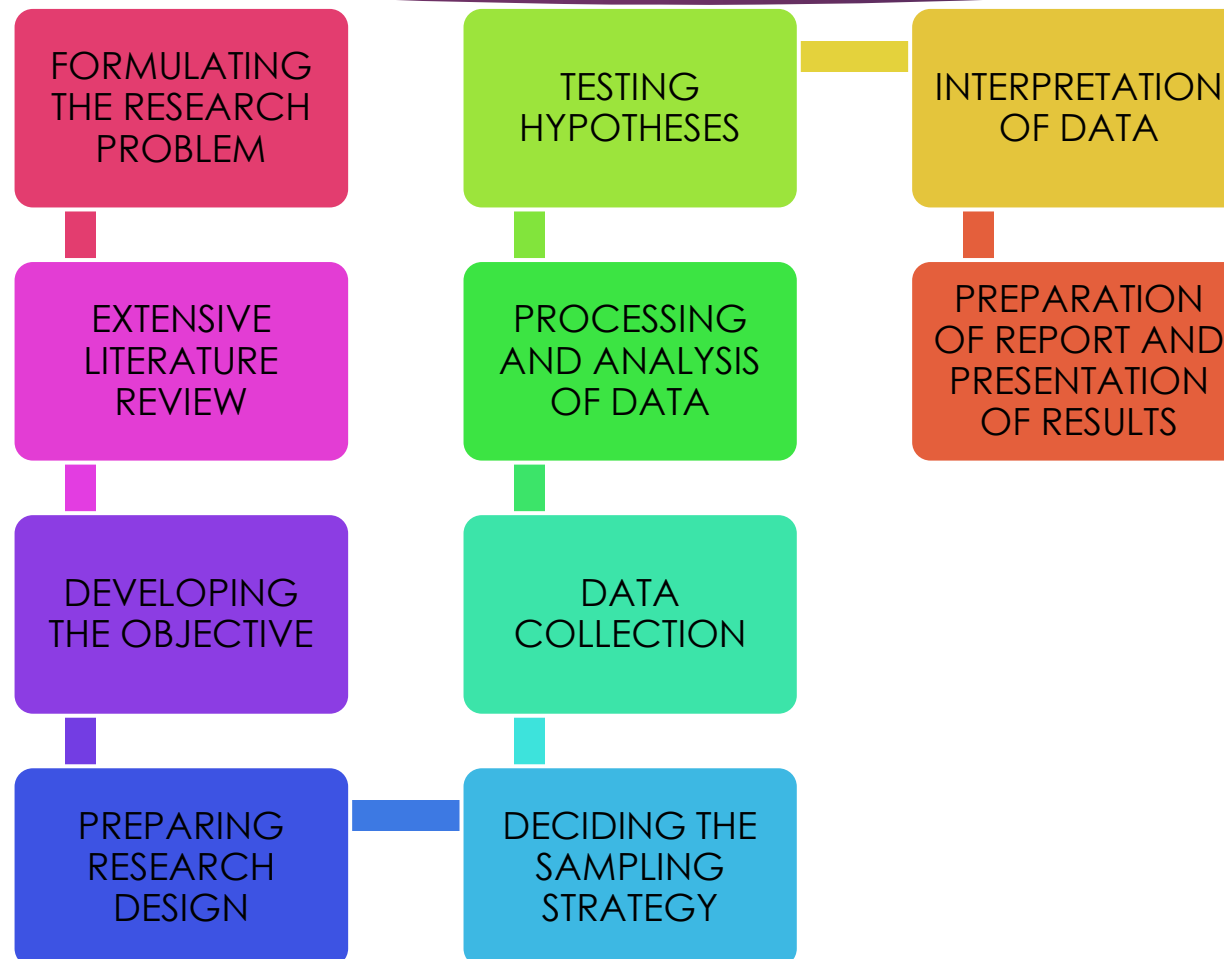
Aims to describe and analyze methods, throw light on their limitations and resources and clarifies their presuppositions and consequences.



Benefits of Research Methodology



Research Process



Literature Survey

IT IS AN ACCOUNT OF
WHAT IS ALREADY
KNOWN OF A
PARTICULAR
PHENOMENON

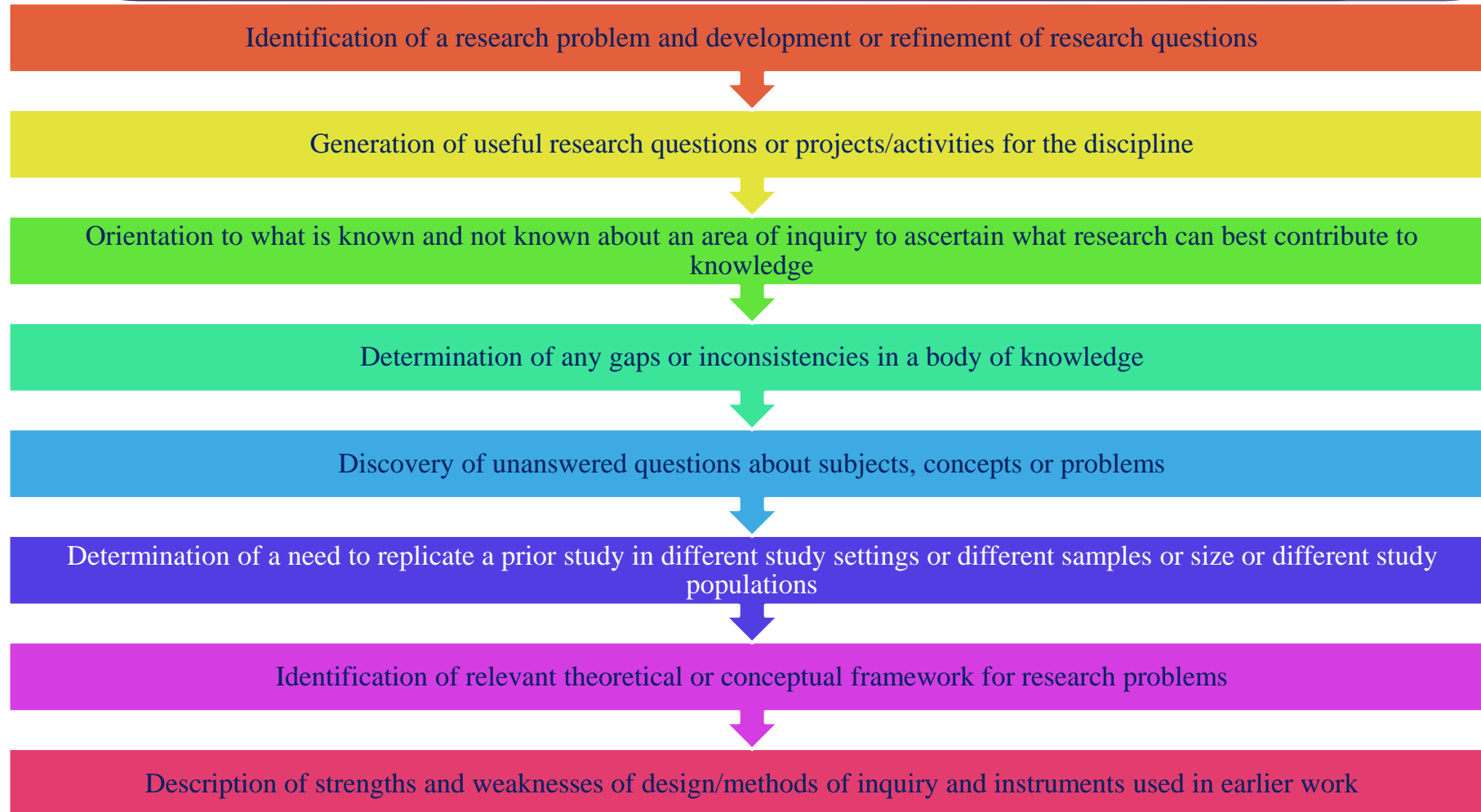
MAIN PURPOSE: IS TO
CONVEY TO THE
READERS ABOUT THE
WORK ALREADY
DONE AND THE
KNOWLEDGE OF
IDEAS THAT HAVE
BEEN ALREADY
ESTABLISHED ON A
PARTICULAR TOPIC

IT IS A LABORIOUS
TASK BUT IS
ESSENTIAL IF THE
RESEARCH PROCESS IS
TO BE SUCCESSFUL

IT DESCRIBES,
SUMMARIZES,
EVALUATES,
CLARIFIES AND/OR
INTEGRATES THE
CONTENT OF PRIMARY
REPORTS



Importance of Literature Survey



PRIMARY LITERATURE



- Original research and/or new scientific discoveries

- Immediate results of research activities
- Often includes analysis of data collected in the field or laboratory

EXAMPLES:

- Original research published as articles in peer-reviewed journals.
- Dissertations
- Technical reports
- Conference proceedings

SECONDARY LITERATURE

- Summarizes and synthesizes primary literature
- Usually broader and less current than primary literature



EXAMPLES:

- Literature review articles
- Books

Since most information sources in the secondary literature contain extensive bibliographies, they can be useful for finding more information on a topic

TERTIARY LITERATURE

- Summaries or condensed versions of materials
- Usually with references to primary or secondary sources
- Good place to look up facts or get a general overview of a subject

EXAMPLES:

- Textbooks
- Dictionaries
- Encyclopedias
- Handbooks



Review/Survey Sources



Steps for doing Literature Review

Bibliography:

- At this stage, researchers read articles, books & other types of literature related to the topic of research & write a brief critical synopsis of each review.

Thematic Organization:

- At this stage, researchers try to find common themes of research topic & organize the literature under these themes, subthemes, or categories

More Reading:

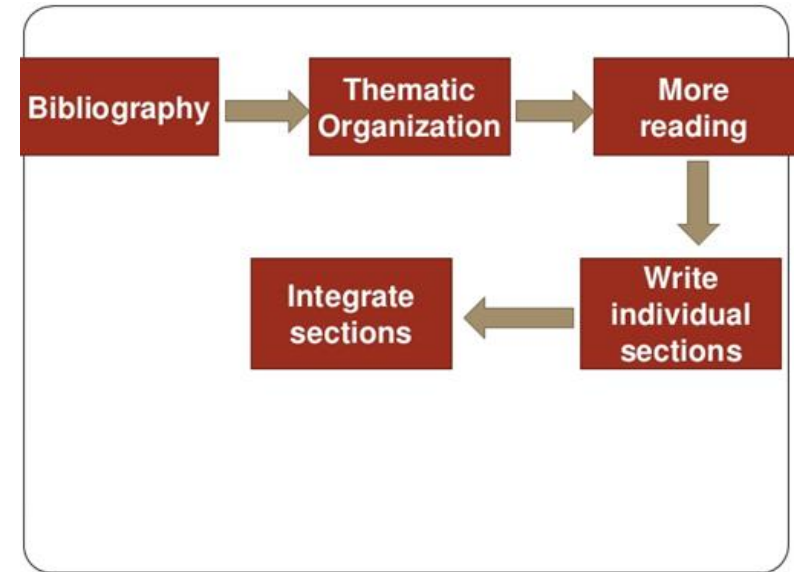
- Based on the knowledge gained through primary reading, researchers have a better understanding about the research topic & the literature related to it. At this stage, researchers try to discover specific literature materials relevant to the field of study or research methodologies which are more relevant for their research. They look for more literature by those authors, on those methodologies, etc.

Write individual Sections:

- At this stage, researchers start writing the literature under each thematic section by using previously collected draft of annotations. Here they organize the related articles under each theme by ensuring that every article is related to each other.

Integrate Sections:

- In this section, researchers have a list of the thematic sections & they tie them together with an introduction, conclusion, & some additions & revisions in the sections to show how they relate to each other & to the overall theme.



The final draft

- **Front Matter**

- Title (fewest possible words that describe the contents)
- Author's (co-authors) name and address
- Abstract (miniversion of the paper)
- Keywords

- **Article Body**

- Introduction
- Theoretical and experimental sections
- Results
- Discussion/Conclusion

- **End Matter**

- Acknowledgment (technical help and financial assistance)
- Appendixes

Writing a Research Paper



Format of a Research Paper

► IEEE FORMAT TO BE FOLLOWED

A. Page Layout:

- I. A4 size paper (210 mm x 297 mm)
- II. Margins (Top: 19 mm, Bottom: 43 mm, Left= Right: 14.32 mm)
- III. Two column format (Space between the columns: 4.22 mm)

B. Page Style:

- I. All paragraphs to be justified
- II. Text Font: Times New Roman
- III. Title and Author Detail: Title: 24 pt. Regular, Author name: 11 pt. Regular, Author Affiliation: 10 pt. Italic, Email Address: 9 pt. Courier Regular)
- IV. Section Heading:
 - a. No more than three levels of headings to be used
 - b. All Headings must be 10 pt. font
 - c. Every word in the heading to be capitalized (except for short minor words like, or, and, so etc.)



Format of a Research Paper

- A. Figures and Tables:** Figures and Tables must be centralized in the column
- B. Figure Captions:** Figures must be numbered using Arabic numeral (1, 2). Cation must be 8 pt Regular
- C. Table Captions:** Tables must be numbered using uppercase Roman Numerals. Table captions must be centralized and 8 pt regular. Every word in the caption must be capitalized (except short minor words)
- D. Page Numbers, Headers and Footers:** Must not be used
- E. Links and Bookmarks:** No links, no bookmarks
- F. References:**
 - i. Heading of the References must not be numbered
 - ii. All reference items must be in 8 pt font
 - iii. Number the reference items consecutively in square brackets (e.g. [1])
 - iv. Multiple References are each numbered with separate brackets (e.g. [2], [3], [4]-[6])
- G. Acknowledgement:** Heading of Acknowledgement and Reference Sections must not be numbered



AVOIDING PLAGIARISM



CHECK!!

ARE YOU PLAGIARIZING?

A QUICK GUIDE TO UNDERSTANDING PLAGIARISM

