

RESEARCH METHODOLOGY (SQG2613)

Research Methodology Design

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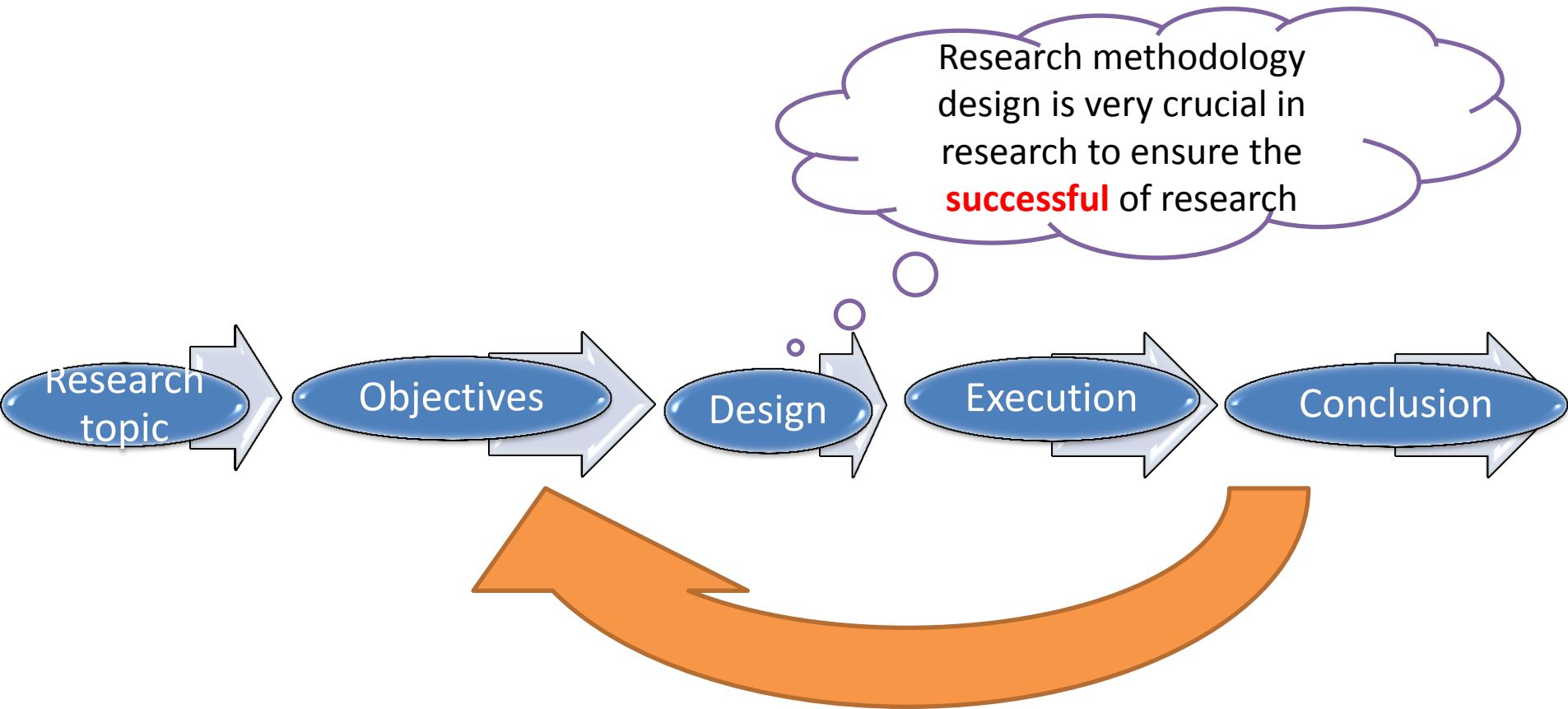
What is Research Methodology Design?

- **Structure** of any scientific works.
- What is scientific works
 - Observation
 - Measurement
 - Experiment
- Gives **direction**
- **Systemize** the research
- **Plan** and **structure** of investigation to obtain **answers** to the research questions.

Research Methodology Design

- A **design of research** methodology starting from how to achieve **specific research objective 1** and so on until the end of research in **systematic way**.
- Research methodology design usually presented in **flow diagram**.
- Using **SMART criteria** to design a good research methodology.

Research Methodology Design

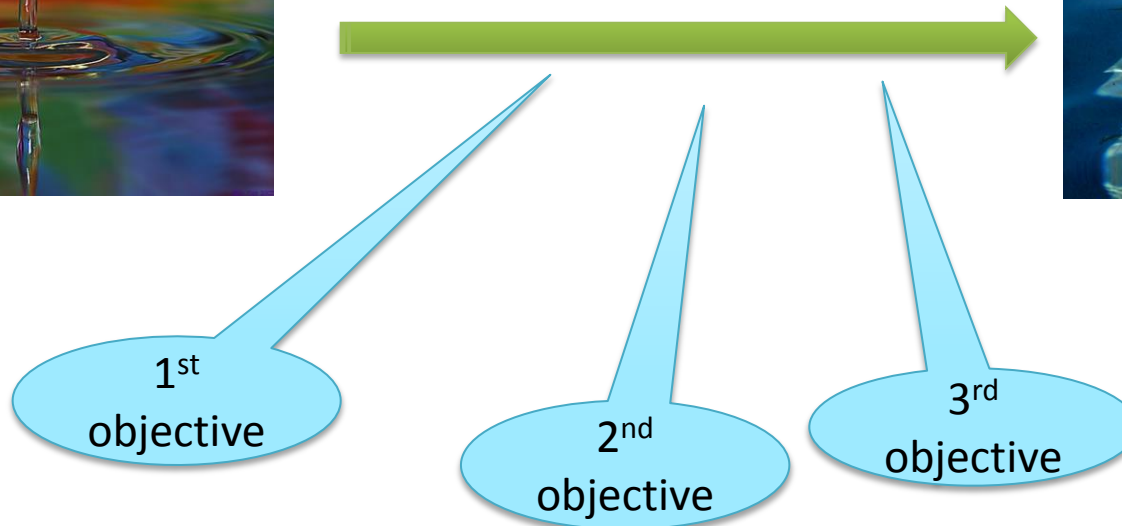


Example

Biodegradation
of azo dye by
isolated-bacteria



Azo dye in water
can be degraded
by bacteria that
isolated from
wastewater



START

Finish

Objective
1Objective
2Objective
3

Exp. 1

Exp. 2

Exp. 3

Exp. 4

Exp. 5

Exp. 6

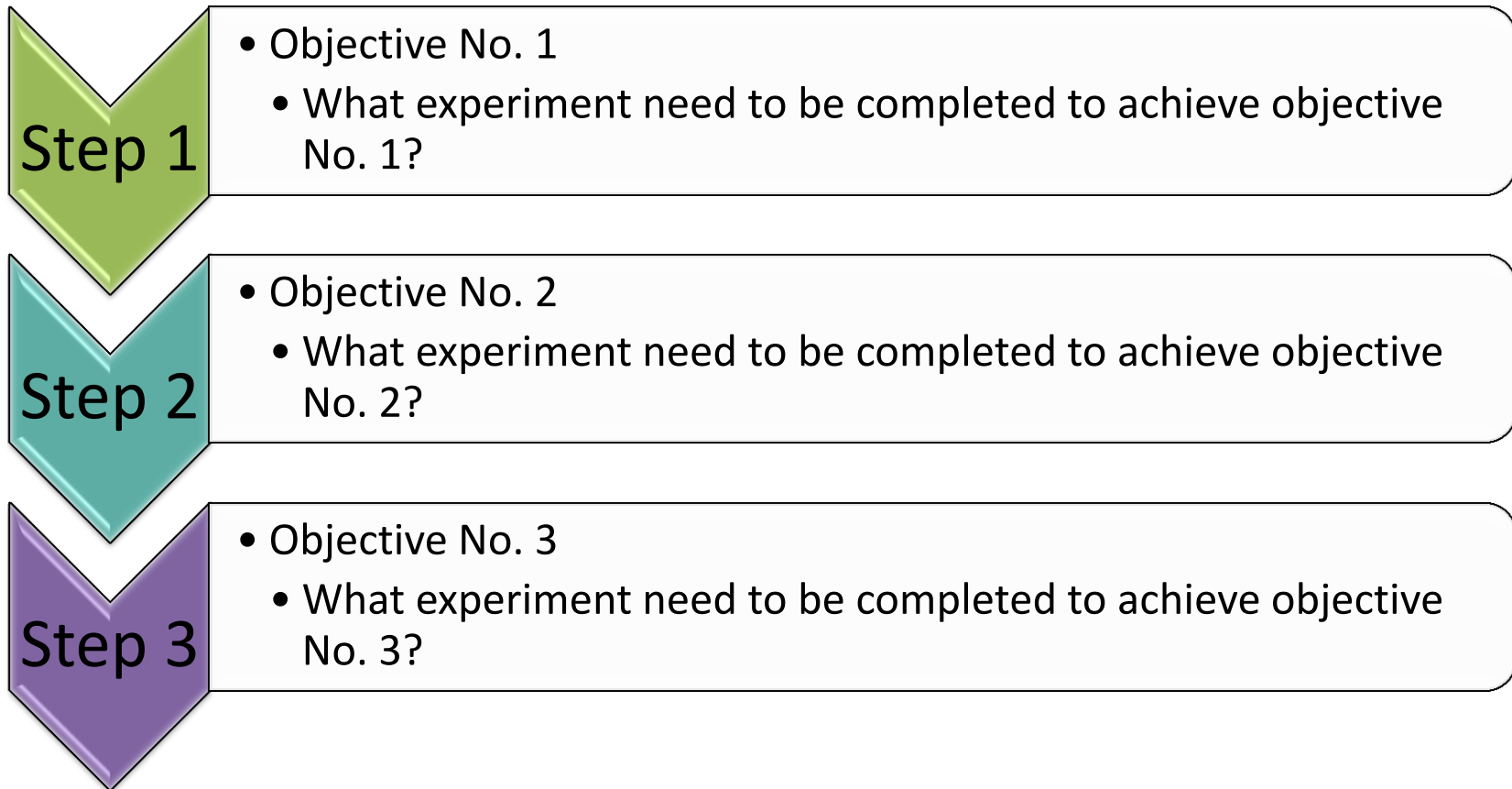
Research Methodology Design

Describing Methodology

- Select appropriate **research design**
- Select **subjects** on whom the study has to be conducted
- **Select or develop instruments** for measuring variables in study

Research methodology design

- Step by step



SMART criteria for research methodology design

S: Specific

- Significant
- Stretching
- simple

M: Measurable

- Meaningful
- Motivational
- Manageable

A: Attainable

- Appropriate
- Achievable
- Action-oriented
- Aligned

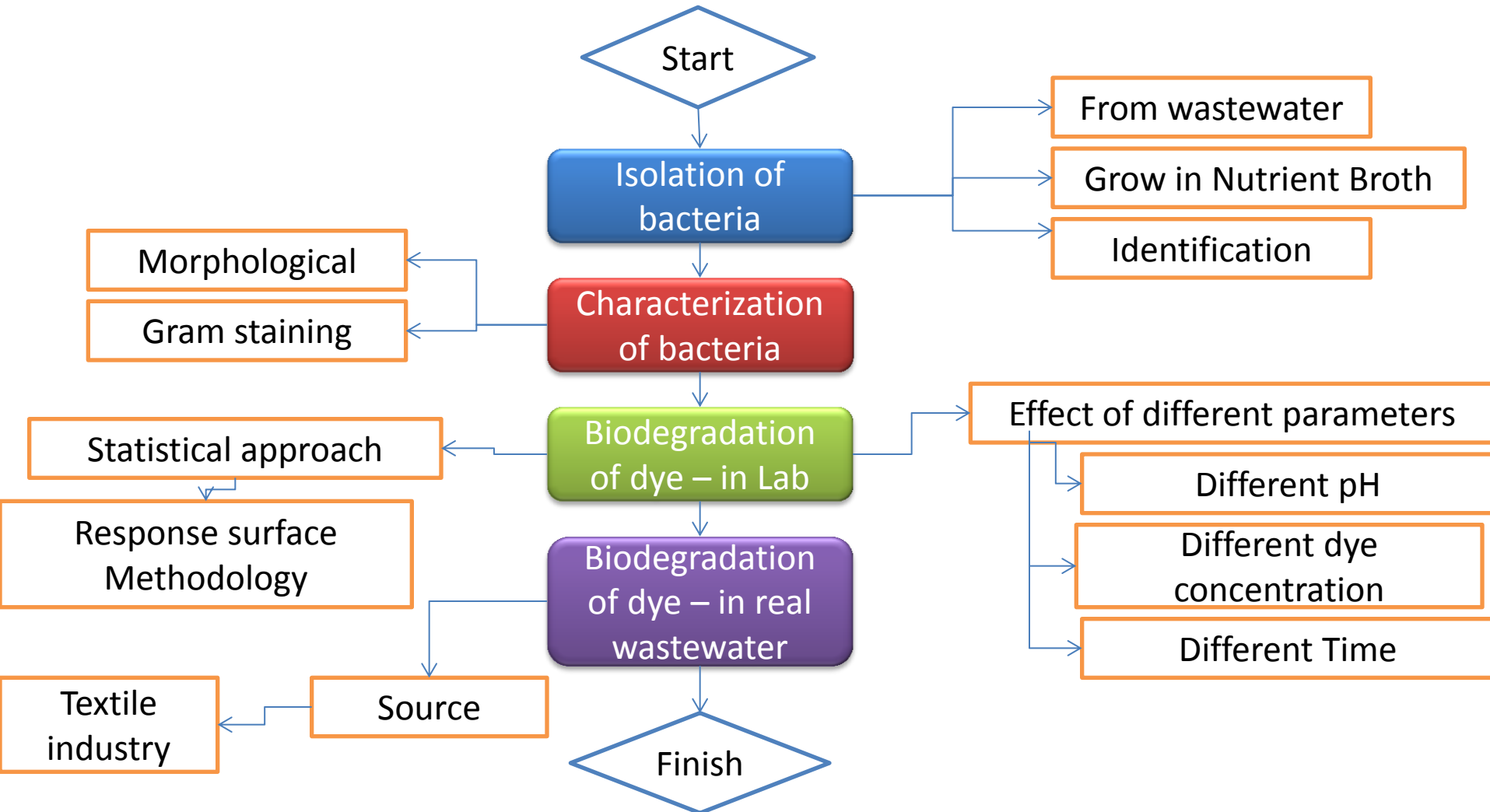
R: Relevant

- Realistic
- Result-oriented
- Resourced
- Rewarding

T: Time-bound

- Time-oriented
- Time framed
- Timely
- Tangible

Research Methodology Design: Example



Difference between:

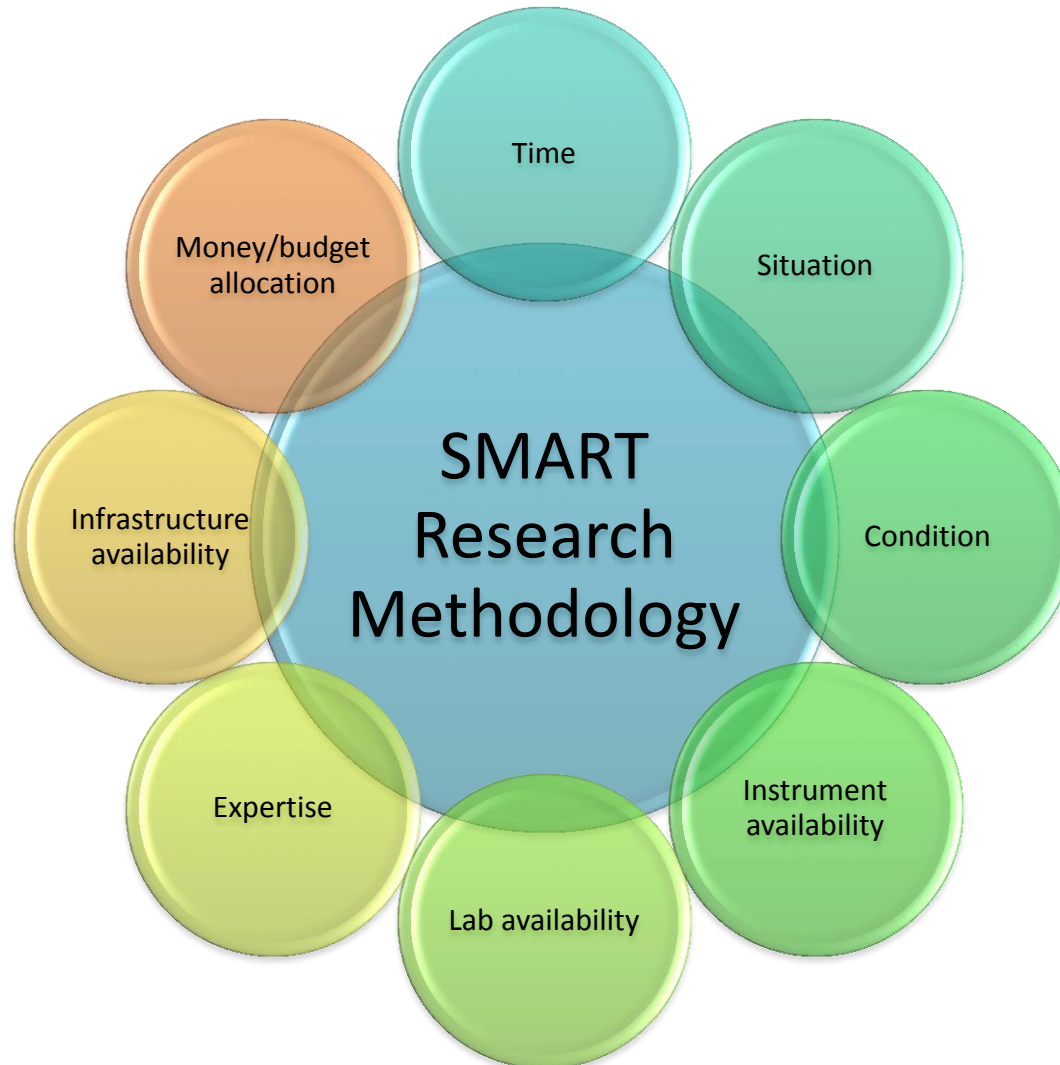
Method

- **Techniques** for gathering evidence
- The various ways of proceeding in gathering information

Methodology

- The **underlying theory and analysis** of **how** research does or should proceed, often influenced by discipline (approach)

Tips in making good Research Methodology Design



MY PROFILE



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