



Lecture 3
Research Questions, Aims, and Significance
Undergraduate Course

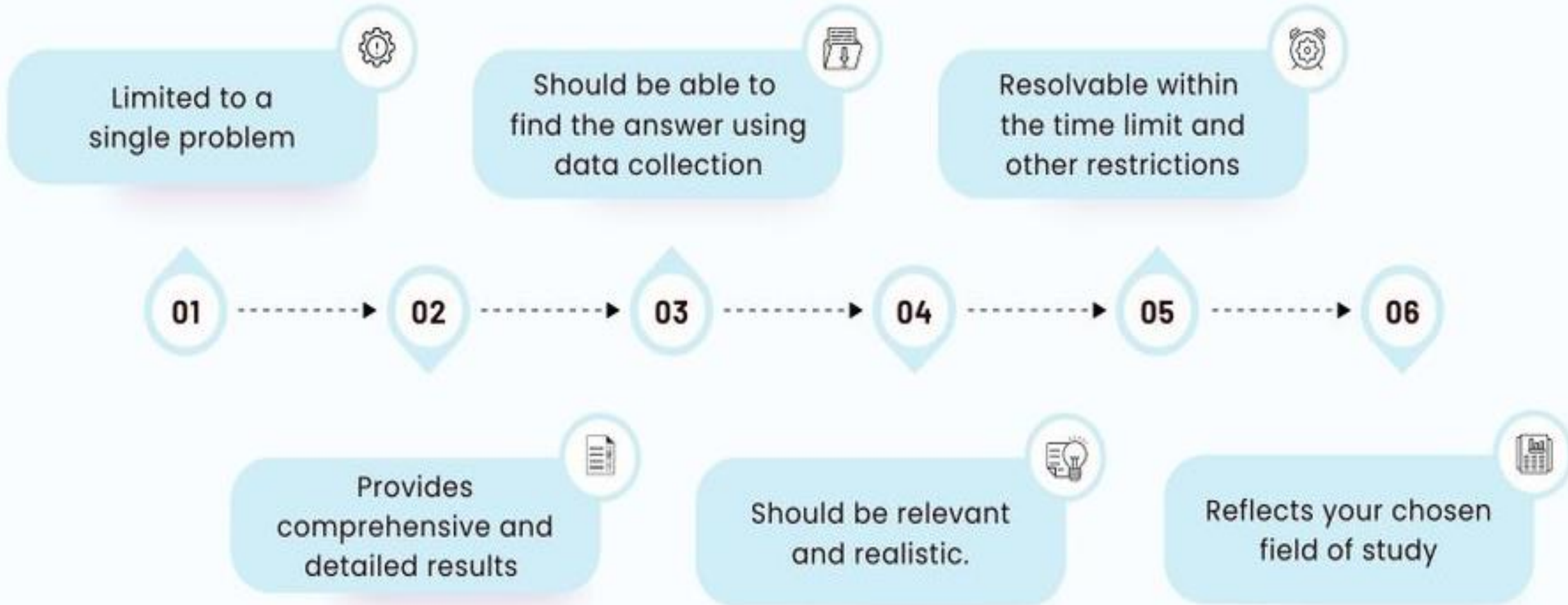
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From Research Problem to Research Questions

A research problem identifies the "what" and "why" of your study: the issue or gap that needs investigation and its significance. Research questions build on this foundation by narrowing the focus and specifying the "how" and "what exactly" you aim to explore or answer. They transform a broad problem into precise, actionable inquiries that guide your methodology and data collection.

Creswell (2014) states that research questions transform a broad problem into clear, focused inquiries that guide the study's direction, highlighting the role of research questions in shaping and directing a study.

Characteristics of Good Research Questions



Characteristics of Good Research Questions

1. **Clear and Specific:** The question is unambiguous, concise, and focused, leaving no room for misinterpretation. This ensures it can be understood and addressed precisely by the researcher and audience (Creswell, 2014).

Example: How does exam stress affect high school students' listening test scores? (clear) vs. What's wrong with students? (vague).

2. **Researchable:** The question can be answered using empirical methods (e.g., observation, surveys, experiments) rather than speculation or untestable ideas. This ensures data can be collected and analysed to address the question (Kumar, 2014).

Example: How does sleep duration impact student concentration? (researchable) vs. What is the soul's role in learning? (not researchable).

3. **Significant:** The question addresses an important issue, gap, or need, making it worth investigating. This ties the question to the research problem's value, ensuring relevance to the field or practice (Leedy & Ormrod, 2015)..

Example: How does teacher feedback influence students' motivation? (significant for education) vs. What colour pens do students prefer? (less impactful).

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4. Feasible: The question can be answered within the researcher's constraints (e.g., time, resources, access to data). This ensures the study is practical and doable (Bryman, 2016).

Example: How does class size affect learning in one school? (feasible) vs. How does class size affect learning worldwide? (infeasible).

5. Focused and Narrow: The question targets a specific aspect of the research problem, avoiding overly broad or multiple unrelated issues. This keeps the study manageable and aligned with its purpose (Punch, 2014).

Example: How does online learning affect students' engagement in speaking? (focused) vs. How does online learning affect everything? (too broad)

6. Aligned with the Research Problem: The question directly relates to and flows from the research problem, addressing its core issue or gap. This ensures the question serves the study's overarching goal (Creswell, 2014).

Example: Problem: Exam stress impacts performance. Question: "How does exam stress affect test scores?" (aligned).

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7. Appropriate for the Methodology: The question suits the chosen research approach (e.g., qualitative, quantitative, or mixed methods). Matching the question to the methodology ensures it can be answered effectively (Kumar, 2014).

Example: Qualitative: What are students' experiences with exam stress? Quantitative: To what extent does exam stress reduce scores?

8. Open to Exploration or Testable: The question invites investigation without assuming an answer; for quantitative studies, it may be testable with a hypothesis. This encourages discovery, while testability supports the scientific approach (Leedy & Ormrod, 2015).

Example: How does sleep affect learning? (open) vs. What is the relationship between sleep duration and learning performance? (testable) vs. Sleep improves learning, right? (biased)

Types of Research Questions

Research questions vary depending on the research problem's focus, the study's goals, and the methodology employed (e.g., qualitative, quantitative, or mixed methods).

Research Question Type		Examples
Descriptive	seeks to describe characteristics, patterns, or phenomena as they exist	What are the study habits of high school students preparing for exams?
Exploratory	investigates an issue or phenomenon that is not well understood	What factors might influence student engagement in online classes?
Explanatory (Causal)	examines cause-and-effect relationships	How does exam stress affect students' test scores?
Predictive	forecasts outcomes or trends based on current data or patterns.	What level of teacher feedback will improve student performance next semester?
Evaluative	assesses the effectiveness, value, or impact of a program, intervention, or policy.	How effective is peer tutoring in improving reading skills?
Comparative	compares two or more groups, conditions, or variables	How does exam stress affect test scores in rural vs. urban students?
Interpretive	seeks to understand meanings, experiences, or perspectives	How do students perceive the impact of exam stress on their learning?

Moving from Research Questions to Research Objectives

- While research questions pinpoint the inquiries guiding our investigation, research objectives outline the goals or outcomes we aim to achieve by answering those questions. They provide a clear roadmap, stating what the study intends to accomplish in concrete terms.
- According to Creswell (2014), objectives transform research problems and questions into clear, actionable goals that guide the study's direction, highlighting the role of research objectives in providing structure and focus to a study.
- Research objectives are concise, specific statements that articulate the intended outcomes or purposes of a study. They describe what the researcher aims to achieve by addressing the research problem and answering the research questions, serving as the foundation for the study's design and evaluation.

Characteristics of Good Research Objectives

- Good research objectives share qualities that ensure they are effective and practical. These align with the systematic nature of research (Leedy & Ormrod, 2015):

1. **Specific:** Clearly states what will be achieved, avoiding vague terms.

Example: To identify factors reducing exam stress (specific) vs. To study stress (vague).

2. **Measurable:** Can be assessed or evaluated through data or outcomes.

Example: To measure the effect of sleep on grades (measurable) vs. To understand sleep (not measurable).

3. **Achievable:** Realistic given the study's resources, time, and scope.

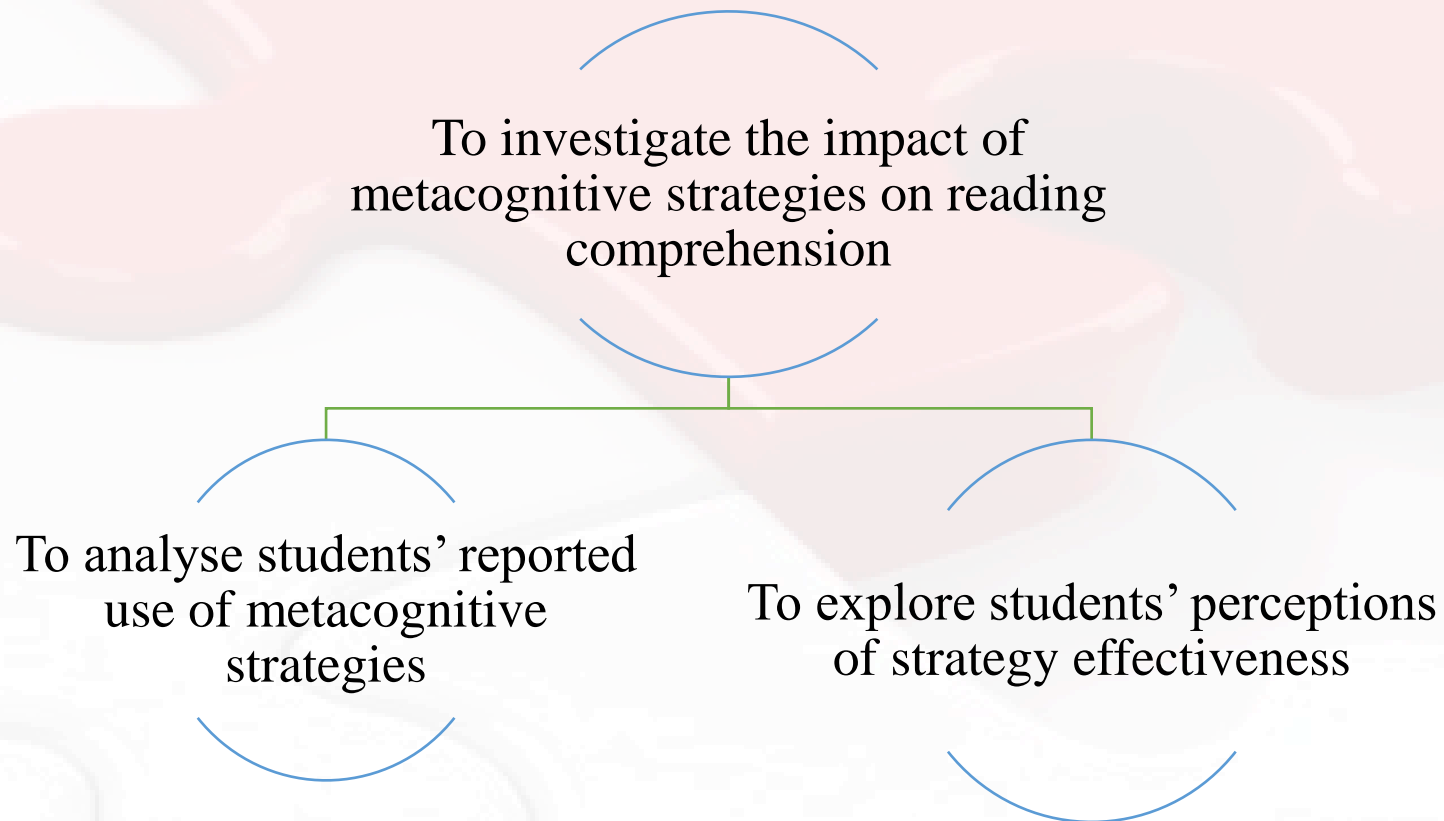
Example: To survey stress in one school (achievable) vs. To eliminate all stress globally (unrealistic).

4. **Relevant:** Directly tied to the research problem and questions, ensuring alignment.

Example: To assess stress's impact on scores (relevant to the problem) vs. To study classroom decor (unrelated).

Note

Well-structured objectives often indicate the study's design. For instance, objectives that use "explore" or "understand" suggest a qualitative approach, while those using "measure," "examine," or "compare" imply a quantitative or mixed-methods design. Sub-objectives break down the main goal into smaller, focused inquiries, guiding different aspects of data collection and analysis.



Significance of the study

- According to Kumar (2014, p.76), “Research significance is the justification for conducting a study, outlining its potential to contribute to knowledge, improve practice, or influence policy”.
- Research significance refers to the importance, relevance, or value of a study, articulated in terms of its potential contributions, benefits, or impacts. It answers the question, "Why does this research matter?" by demonstrating how it addresses a gap, solves a problem, or advances understanding in a field.
- It convinces stakeholders (e.g., researchers, funders, practitioners) of the study's worth and aligns it with broader goals.

Key Aspects of Research Significance

Research significance typically encompasses several dimensions, reflecting its multifaceted value:

- 1. Theoretical Significance:** Contributes to advancing or refining academic knowledge, theories, or models .

Example: Understanding exam stress could refine theories of cognitive load in education.

- 2. Practical Significance:** Offers solutions or improvements to real-world problems or practices.

Example: Findings could guide teachers in managing student stress effectively.

- 3. Methodological Significance:** Introduces or validates new research methods, tools, or approaches.

Example: Using a new stress survey tool could enhance future studies.

- 4. Social/Policy Significance:** Impacts society, communities, or policy decisions beyond academia.

Example: Reducing exam stress could influence educational policy on assessments.

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