Lecture 2

Research Problem

Undergraduate Course

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Research Problem

- Leedy and Ormrod (2015) define a research problem as a puzzling or problematic situation that requires resolution or explanation through a structured and systematic investigation.
- It is a specific issue, gap, contradiction, or question within a field of study that warrants investigation to generate new knowledge, solve a practical challenge, or address an uncertainty. It serves as the starting point of the research process, driving the inquiry and shaping its direction.

Example: Why do high school students in rural areas underperform in STEM subjects compared to their urban peers?

Sources of Research problems

- **Personal experience or observation:** Problems arise from the researcher's own encounters or insights in real-world settings.

Example: A teacher notices students struggle more with online learning and wonders why

- **Extensive study or Review literature:** Gaps, contradictions, or unanswered questions in existing studies suggest new problems.

Example: Studies on classroom technology show mixed results, prompting a problem: "What specific conditions make technology effective?"

- **Practical Issues or Needs:** Problems stem from challenges faced by individuals, organizations, or communities in practice.

Example: High dropout rates in a school district lead to the problem: "What factors contribute to student attrition?"

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- **Theoretical Frameworks:** Inconsistencies, untested aspects, or extensions of theories inspire research problems.

Example: Vygotsky's theory suggests social interaction aids learning, but how does this apply in virtual classrooms?

- **Social or Policy Issues:** Broader societal trends, changes, or policy debates generate research problems.

Example: New laws on standardized testing prompt the problem: "How do these policies affect student stress levels?"

- **Previous Research Recommendations:** Studies often conclude with suggestions for future research, pointing to unresolved issues.

Example: A paper on teacher burnout recommends exploring its impact on student performance, inspiring a new problem.

Statement of the Problem

- Creswell (2014) describes it as a section that explicitly outlines the problem, offers background information, and highlights its significance to the field or practice.
- Kumar (2014) emphasises that the problem statement serves as the foundation of research, shaping the issue in a way that directs the chosen methodology.
- It is a concise, formal articulation of the research problem, typically presented in a research proposal or paper. It explains the context, significance, and scope of the issue, justifying why it needs to be studied and what gap it addresses.
- **Components:**
  - **Context:** Describes the situation or phenomenon.
  - **Gap:** Highlights what is unknown or unresolved.
  - **Significance:** Explains why solving it matters.
  - **Scope:** Defines the boundaries of the study.

Example: Despite increased funding for STEM education, rural high school students consistently score lower on standardized tests than urban students. This gap persists, yet little is known about the contributing factors, such as access to resources or teacher training. Addressing this is critical to ensure equitable education outcomes.

Major Steps to Write a Research Problem (Statement of the Problem)

Once identified, the research problem must be written clearly as a “statement of the problem”.

1. Provide Background Context:

Describe the broader situation or phenomenon related to the problem to set the stage. This gives readers a foundation to understand the issue.

Example: Exams are a standard assessment tool in education, but they often cause significant student stress.

2. Highlight the Gap or Issue:

Clearly state what is unknown, unresolved, or problematic based on your identification process. This Defines the specific focus of the research.

Example: However, the impact of exam-induced stress on students’ academic performance remains understudied.

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3. Explain the Significance:

Justify why addressing the problem is important (e.g., theoretical, practical, or societal benefits). This shows the value of the research to stakeholders or the field.

Example: Understanding this could lead to better assessment strategies and improved student well-being.

4. Define the Scope:

Specify the boundaries of the study (e.g., population, context, variables) to make it manageable. This keeps the research focused and feasible.

Example: This study will focus on high school students in urban public schools.

5. Draft and Refine the Statement:

Combine the above into a concise paragraph or set of sentences, then revise for clarity and precision. This ensures the problem is well-articulated and research-ready.

Example Statement: Exams are widely used in education, but they often induce stress among students. Despite this, little research explores how exam stress affects academic performance in high school settings. Understanding this relationship is crucial for developing effective assessment methods and supporting student well-being. This study will examine urban public high school students to address this gap.

Research Problem Statement Structure

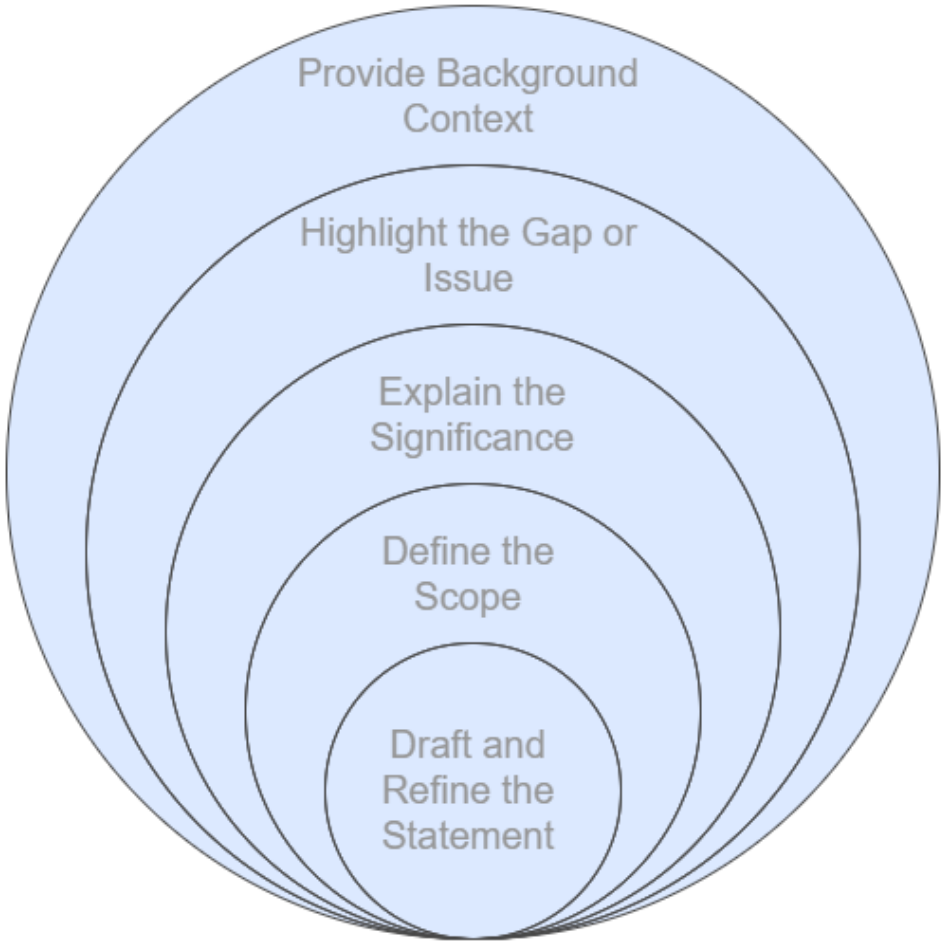
Offer foundational information

Identify existing gaps in knowledge

Articulate the importance of the research

Establish boundaries of the research

Finalize the core research question



Evaluating the problem

- ✓ **Assess Significance:** Determine if the problem is important to the field, practice, or society—does it address a gap, solve a pressing issue, or advance knowledge? A significant problem justifies the time, effort, and resources invested in research.
- ✓ **Check Researchability:** Verify that the problem can be studied using empirical methods (quantitative, qualitative, or mixed). If it's too vague, abstract, or untestable, it cannot be researched effectively.
- ✓ **Evaluate Feasibility:** Assess whether the problem can be studied given available resources, time, skills, and access to data or participants. Practical constraints can derail an otherwise good problem.
- ✓ **Examine Clarity and Specificity:** Ensure the problem is clearly defined and focused, avoiding vagueness or overbreadth. A precise problem guides the research process effectively.
- ✓ **Determine Originality:** Check if the problem is novel or offers a fresh perspective by reviewing existing literature. Research should add to knowledge, not repeat what's already known.
- ✓ **Align with Goals and Interests:** Confirm the problem aligns with your personal, academic, or professional objectives and passions. Motivation and relevance to your goals sustain the research effort.
- ✓ **Test Ethical Viability:** Ensure the problem can be studied ethically, without harm to participants or violation of standards. Ethical issues can invalidate or halt research.

References

- Leedy, P. D., & Ormrod, J. E. (2015). Practical Research: Planning and Design, 11th ed. Pearson.
- Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 4th ed. SAGE Publications.
- Kumar, R. (2014). Research Methodology: A Step-by-Step Guide for Beginners, 4th ed. SAGE Publications.