



Writing an Effective Research Proposal

Turning your idea into a plan

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PEABODY  **SPRING WELCOME**





Introductions



Name



Current position

work/student



**One topic or
wondering**

about developing a high-quality
research proposal

GOALS & AGENDA



Develop understanding about

- 1 Researchable questions versus policy and practice questions and how they are related
- 2 Alignment and coherence in the research process – Inverted Pyramid
- 3 The importance of theories of change and logic models in research
- 4 The research design and operationalizing measures

AND

A personal reflection on a research career

The Process

START WITH A RESEARCHABLE QUESTION (focus)



BUILD AN INVERTED PYRAMID (scope & clarity)



CREATE A THEORY OF ACTION (how change happens)



OPERATIONALIZE YOUR MEASURES (what data to collect)

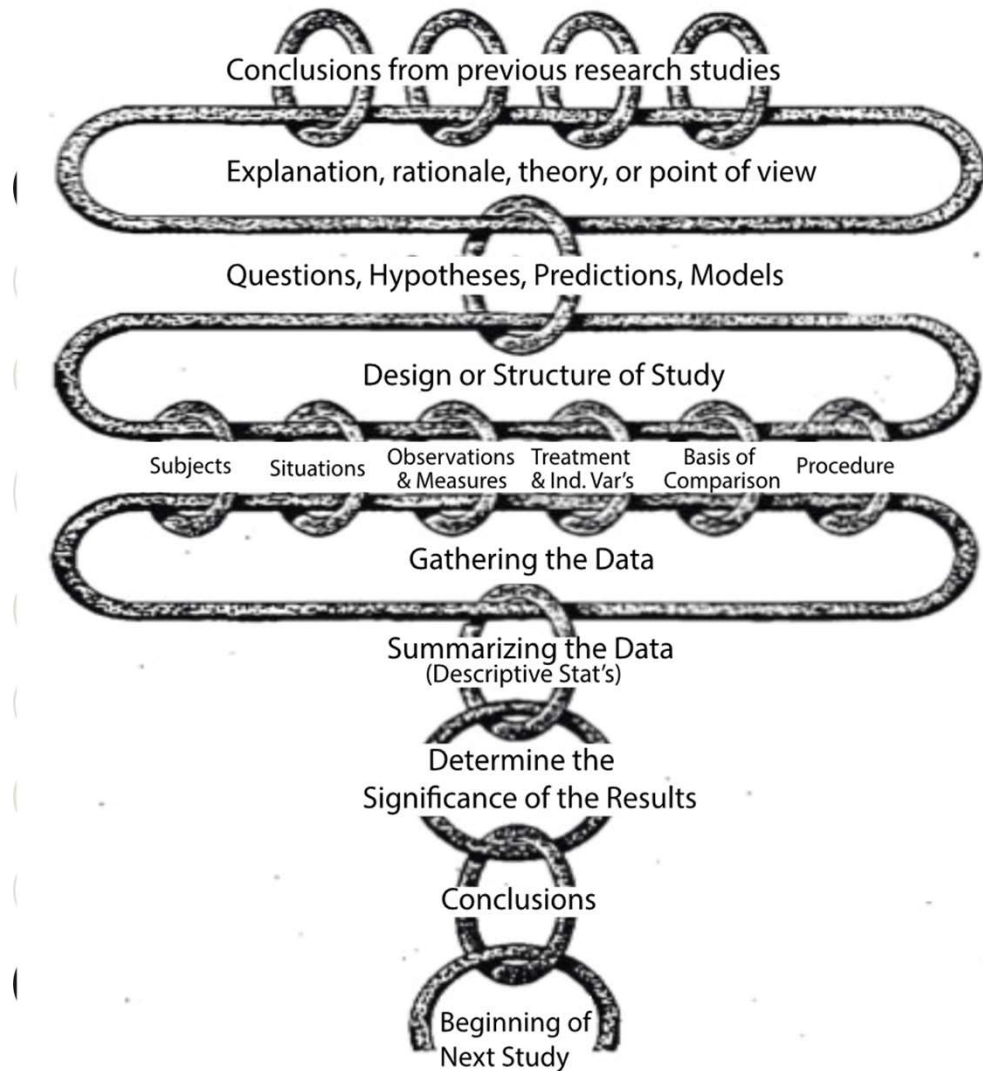
The Goal: Alignment and Coherence

The Challenge: Focus

The research process: “The Rings”

WHY RINGS?

What does this suggest
about the research
process?



Why Rings?

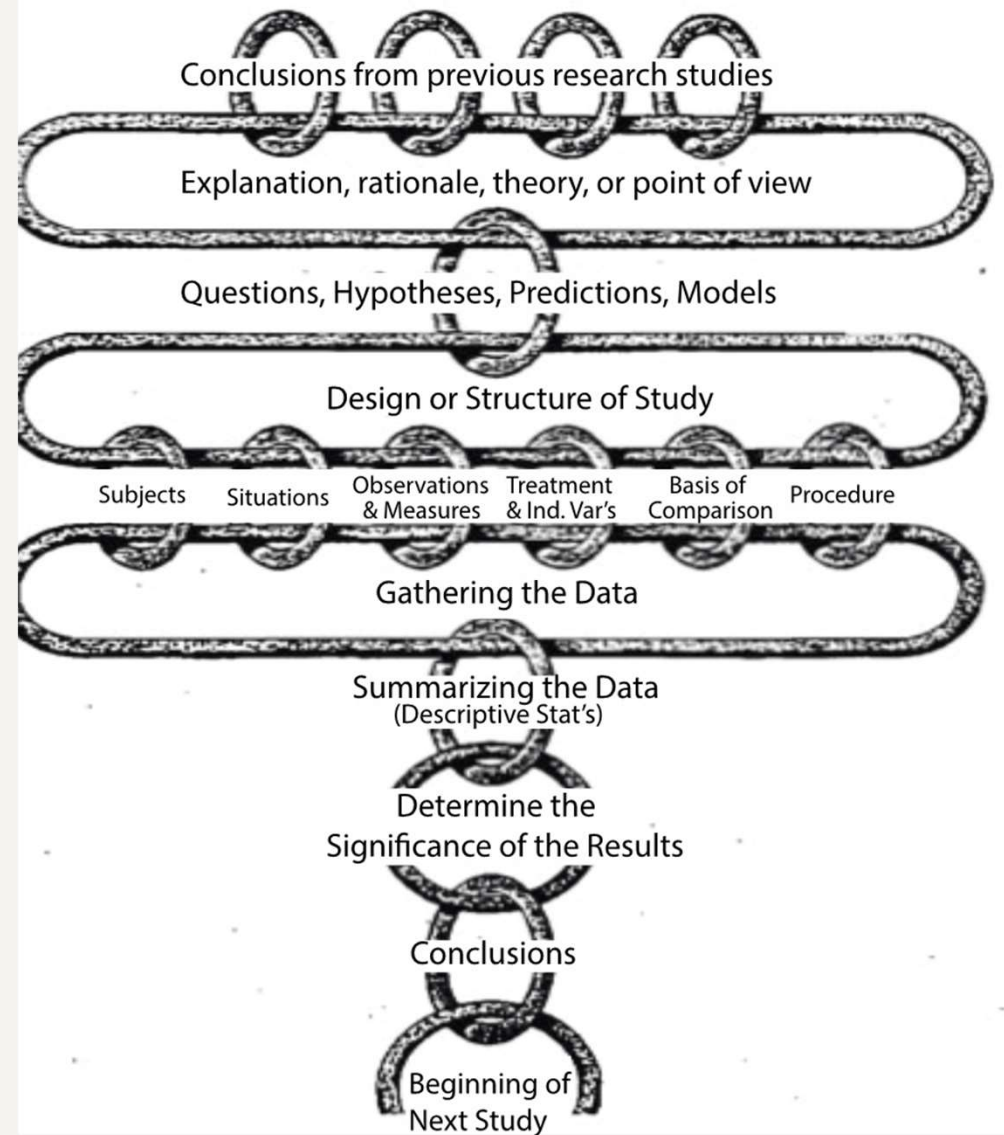
- Each ring is a distinct layer of research thinking
- Rings are interconnected (a change in one affects others)
- The whole system must be coherent for research to be strong

Ring 1: Your Question (What are you asking?)

Ring 2: Your Theory (Why do you think it works?)

Ring 3: Your Design (What's your evidence approach?)

Ring 4: Your Measurement (How will you know?)





PART ONE

Research Questions





Researchable problems

Why not all questions are considered researchable. What do you notice about these questions?

Policy questions: non-researchable	Researchable
Should we extend the school day?	
How can principals observe teachers to improve their instruction and student outcomes?	
Should we provide additional professional development in learning communities about AI? How many days of PD should be required each year?	

■ 1. RESEARCH QUESTIONS

Researchable questions

Research cannot resolve fundamental issues about what to do.

Ethics

Values

Politics

Ideology

Constraints



*...but research **can inform and provide input.***

■ STEP 1

Researchable questions



ON YOUR OWN

For each non-researchable policy question, draft 2 researchable questions.

SHARE

- What do you notice?
- How will the answers to the researchable questions inform the policy or practice question of interest?



Researchable problems

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Policy questions: non-researchable	Researchable
Should we extend the school day?	
How can principals observe teachers to improve their instruction and student outcomes?	
Should we provide additional professional development in learning communities about AI? How many days of PD should be required each year?	

Comparing research questions

NON-RESEARCHABLE

How can principals observe teachers to improve their instruction and student outcomes?

Should we extend the school day?

Should we provide professional development only in learning communities about AI? How many days of PD should be required each year?

RESEARCHABLE

To what extent does training principals in teacher observation protocols aligned to the curriculum improve teacher practices?

What is the relationship between student engagement and hours in each academic subjects? How does this vary by grade and subjects?

What is the effect of PLCs about AI compared to online individualized PD on teachers' use of AI in the classroom? How does this vary by type of AI application and subject?



PART TWO

The Pitch: Inverted Pyramid

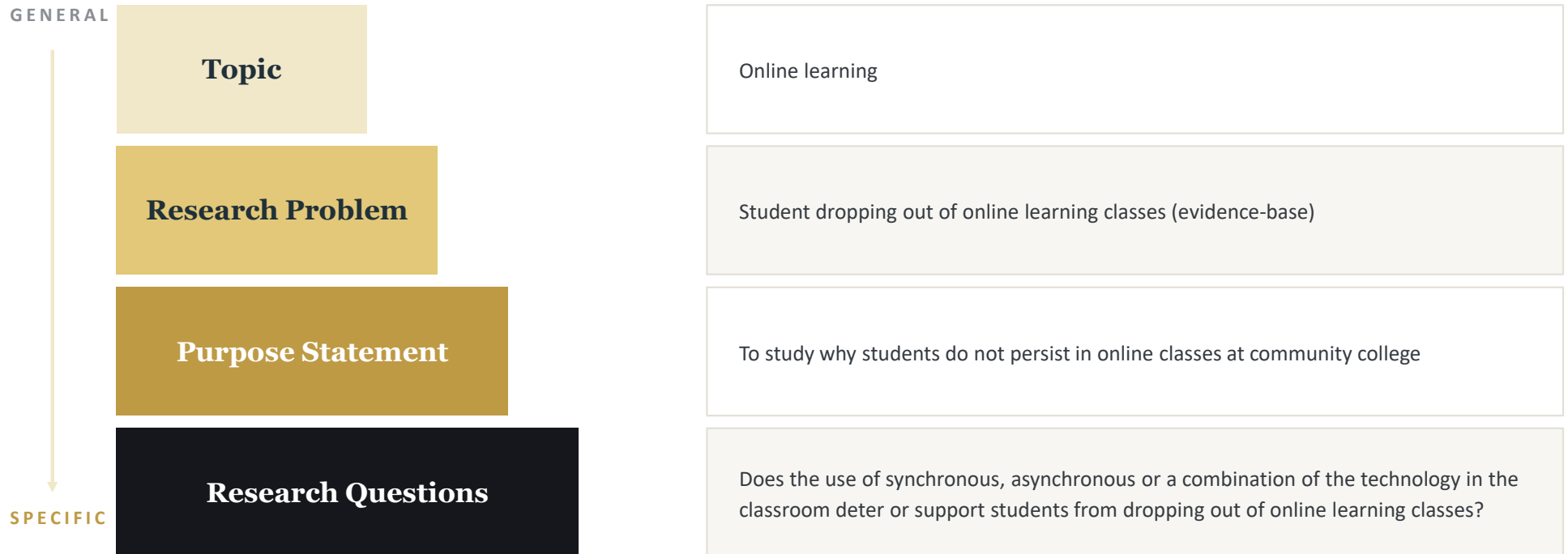


The pitch: inverted pyramid





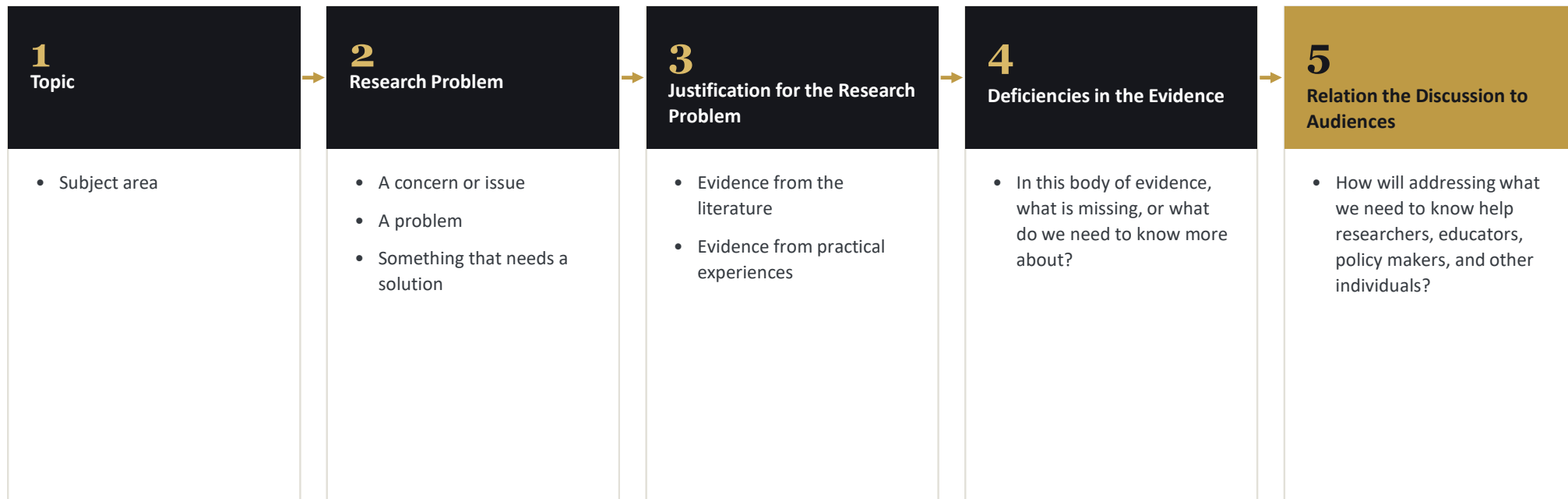
Distinguishing among the topic, research problem, purpose, and research question





Flow of ideas in a “Statement of Problem”

The Inverted Pyramid



6. And, then the Research Questions

■ STEP 2



Draft the inverted pyramid



I

Identify the problem

Review the literature; Why this problem?
What do we know and what do we need to know?

II

Create the rationale and motivation for your research question

III

Formulate the research question

Inverted pyramid: 3–4 pages maximum

Clear, concise, aligned

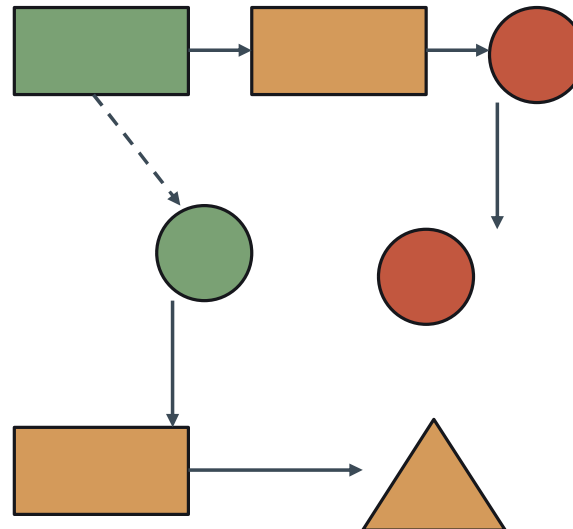
PART THREE

Conceptual Frameworks

Logic models or theory of action

Theory of change

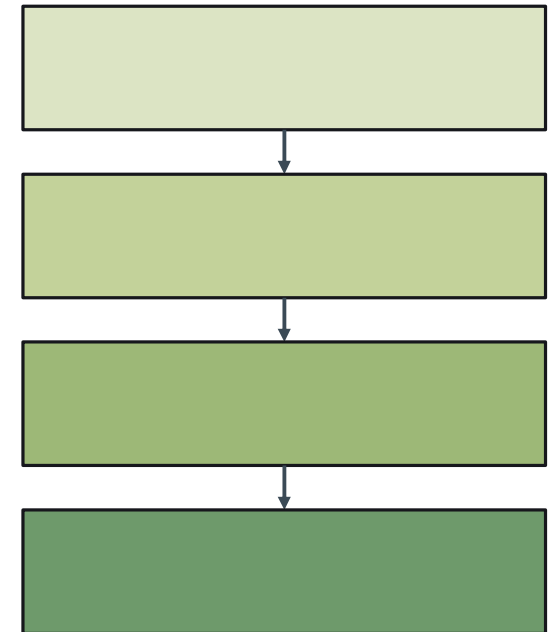
Kind of linear w/ some nuances



Logic model

Very linear – one flows into the next w/o any other diversions

And



Theory of action and logic models

THEORY

A set of interrelated, abstract concepts and statements that offer an explanation of some phenomenon.



Theories are efforts to describe what the world is like, how it actually operates.

■ CONCEPTUAL FRAMEWORKS

Theory of action

A tool for managing and learning from complex social phenomenon and align theory and concepts to the research questions processes

A Theory of Action is a tool to help us cope with and learn from complex change processes:

- Understand processes and underlying assumptions
- Creates a framework to focus and align the research to implement a study of the research questions

**EXAMPLE**

Teacher evaluation and feedback



Teacher evaluation and feedback

THE PREMISE

A core premise of instructional leadership is that leaders should spend more time in classrooms to observe teachers and provide feedback.

Teacher evaluation reforms would create new systems would promote teacher development through high-quality feedback.

Examine this theory by studying teachers' perceptions of evaluation feedback in Boston Public Schools and evaluating the district's efforts to improve feedback through an administrator training program.

RESEARCH QUESTIONS

- 1 What are teachers' perceptions of the new evaluation system in BPS and the quality of feedback they receive?
- 2 Can training administrators to provide high-quality evaluation feedback improve teachers' perceptions of feedback quality, classroom instruction, teacher self-efficacy, and student achievement?
- 3 What predicts teachers' perceptions about their evaluation feedback quality?

Kraft, M. A., & Christian, A. (2022). Can teacher evaluation systems produce high-quality feedback? An administrator training field experiment. American Educational Research Journal, 59(3), 500–537.

Observation and feedback cycles

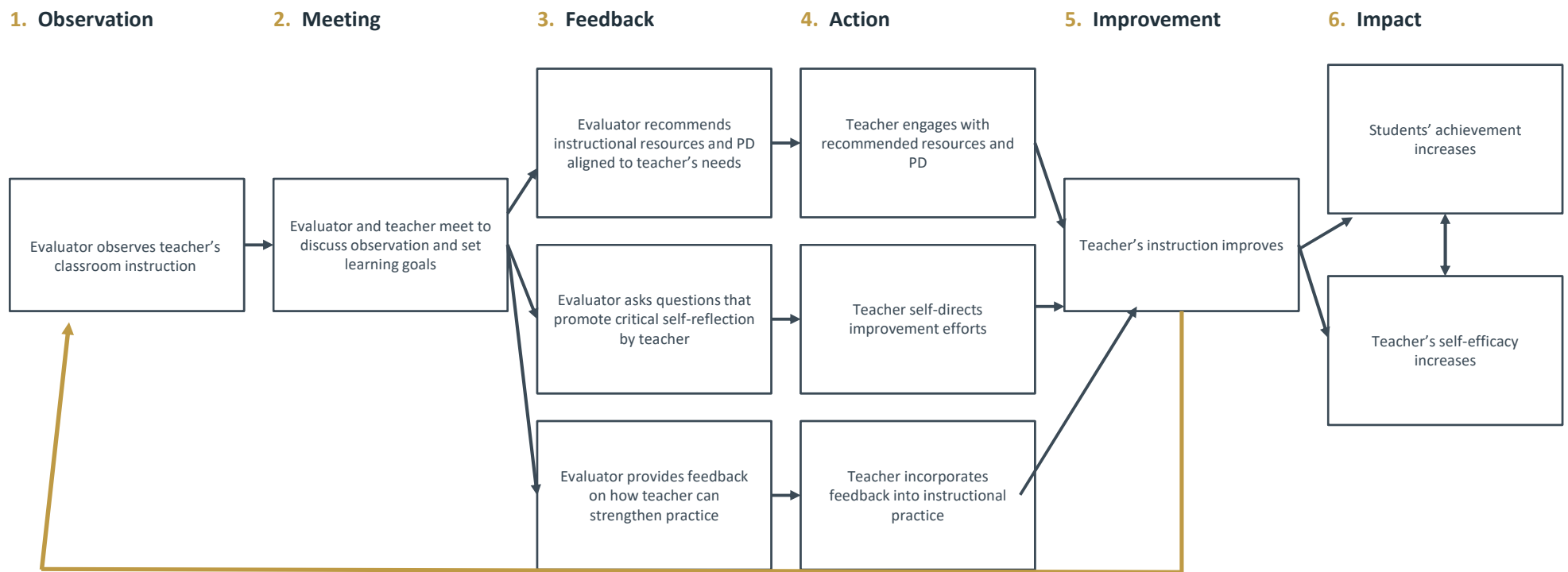


Figure 1. Theory of action behind the observation and feedback cycles. *Note.* PD = professional development.



Educational theories of action are never perfect

Multiple moving parts, complex organizations, complexity of teaching, politics, budgets, competing agendas

Our knowledge is always incomplete

Effectiveness comes not from finding the perfect mapping of all components, but in combining past research with theory and articulation of assumptions and processes in context with continuous learning and incremental improvement.

Create your own theory of action



1

What problem are you trying to solve?

2

What is the intended outcome?

3

What are your key activities? (e.g., new materials, new PD, extra money)

4

What are the key stages of the change process? (e.g., new knowledge, new practices, new activities)

5

What different role groups are involved? (e.g., school leaders, teachers, teacher educators, parents)



Research Designs – How Do I Know?



Research Designs

Research Strategy	Historical	Survey: Description	Correlational/ Prediction	Ex-Post Facto/ comparative	Experiments Natural Experiments
Purpose	To examine trends	To describe	Examine relationships between variables	To examine differences between groups, where independent variable occurs prior to dependent	To examine cause and effect
Time Frame	Past	Current / Past	Current or Past (correlational), Future (predictive)	Current / Past	Current
Degree of Control Over Factors	None or low	None or low	Low to medium	Low to Medium to High (dependent on statistical controls)	High
Example	Examination of retention policies in public schools over the last 50 years	Interviews/survey/ secondary data	Relationship between principals' instructional leadership and teacher retention	Differences between school type on teacher turnover and student achievement	Effects of reading PD in PLCs in the science of reading on student's formative and final assessments



Conceptualizing key concepts in the research questions:

Measures: Quantitative or Qualitative



Conceptualization

The process whereby concepts are made specific and precise for measurement and data collection.



Operationalization

The process whereby concepts are made specific and precise for measurement and data collection.

Why operationalization matters

✗ VAGUE OPERATIONALIZATION

Scenario: you theorize that teacher feedback improves instruction.

“We’ll measure teacher feedback and see if instruction improves.”

The problem:

What is feedback? (tone? specificity? frequency?)

What is improvement? (student engagement? test scores?)

You cannot collect data on something undefined.



Clear operationalization

✓ Define each concept so the measure is unambiguous.

Teacher feedback = written comments on specific instructional practices within 48 hours of observation.

Instruction improves = an increase in the use of student-centered strategies, measured by an observation rubric.

Problem solved. You now know exactly what to collect and measure. Keeping operationalization transparent lets others evaluate whether you measured what you claimed.

The lesson: *without operationalization you cannot have research. With it, you have measurable data.*



Application example: concepts to be measured

1 What are parent perceptions of their child's growth mindset, academic persistence, and self-efficacy?

2 To what extent do these perceptions differ for parents who choose private schools or public schools?

YOUR TASK

Write down all of the concepts that need to be operationalized.



■ OPERATIONALIZING MEASURES

Example: identifying concepts to be measured

1 What are **parent perceptions of their child's growth mindset**, **academic persistence**, and **self-efficacy**?

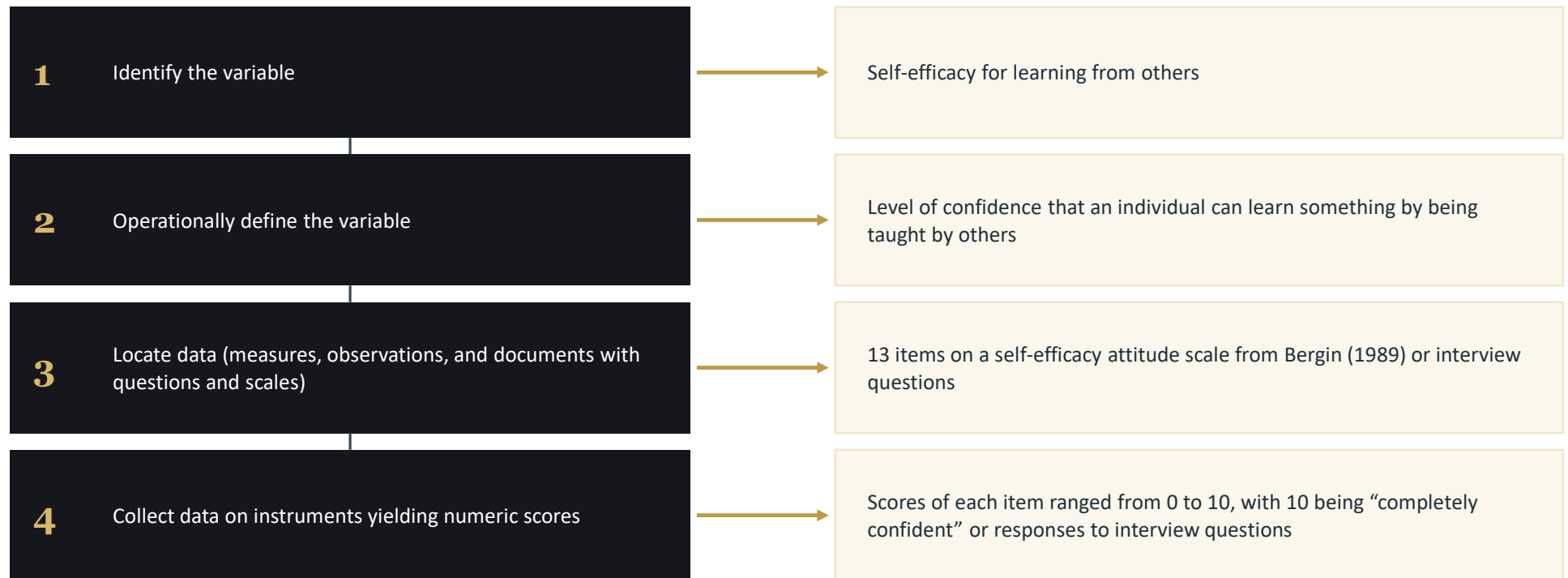
2 To what extent do **these perceptions differ** for parents who choose **private schools** and **traditional public schools**?

***Bold terms** mark the concepts that must be operationalized before data collection.*

Flow of process to operationalize measures

FLOW OF ACTIVITIES

EXAMPLE





Common mistakes

1

MISTAKE

Measuring a proxy, not your concept

Concept: “Teacher quality”

Measure: “Years of teaching experience”

Problem: experience does not equal quality. You are measuring the wrong thing.

2

MISTAKE

Defining something too broadly

Concept: “Student engagement”

Definition: “being present in class”

Problem: attendance does not equal engagement. You need observable indicators.

3

MISTAKE

Using another’s measure without validation

You found survey or interview questions on “teacher efficacy.”

Problem: did it work with your population, in your context?

Better: check that it was tested with similar people and matches your research question.

4

MISTAKE

Creating your own measure without piloting

You write five survey questions on the fly.

Problem: unclear wording produces inconsistent responses.

Better: draft, pilot with 5 to 10 people, gather feedback, then revise.

RECAP

RECAP

START WITH A RESEARCHABLE QUESTION (focus)



BUILD AN INVERTED PYRAMID (scope & clarity)



CREATE A THEORY OF ACTION (how change happens)



OPERATIONALIZE YOUR MEASURES (how to know if it worked)

AND Remember the rings! Your Guide



My Personal Reflections

Five themes on research

ON:

Rigor

Research Questions

Distributed Expertise and Collaboration

Context

Sustainability

DISCUSSION

Questions?





 Thank you