

Methods Matrix	Qualitative Approaches	Quantitative Approaches	Mixed Methods Approaches
What it <i>measures</i> ?	<b>Describes attitudes, perceptions, opinions, ideas, or experience</b>	<b>Quantifies the measurement of attitudes or behaviors</b>	<b>Utilizes both</b> [qualitative & quantitative data; or qualitative data and qualitative & quantitative analysis]
Philosophy	<ul style="list-style-type: none"> <li>Seeks to make constructivist knowledge claims, based in participant experience and/or multiple perspectives</li> </ul>	<ul style="list-style-type: none"> <li>Seeks to make post-positivist knowledge (cause &amp; effect) claims</li> <li>Surveys and experiments</li> </ul>	<ul style="list-style-type: none"> <li>Seeks to make pragmatic knowledge claims, i.e., consequences of particular practices, problem-centered, pluralistic in its approach</li> </ul>
Research Questions & Approaches	<ul style="list-style-type: none"> <li><i>Divergent (open-ended) research questions</i></li> <li>Emergent / Fluid methods <ul style="list-style-type: none"> <li>Ethnography</li> <li>Phenomenology</li> <li>Grounded theory</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Convergent (Close-ended) research questions</b></li> <li>Pre-determined approaches</li> </ul>	<ul style="list-style-type: none"> <li>Involves both divergent and convergent research questions</li> <li>Emergent/Fluid and pre-determined methods</li> <li>Involves some combination of qualitative and quantitative data collection and analysis</li> </ul>
Methods	<ul style="list-style-type: none"> <li><i>Seeks to amplify or generate theory</i></li> <li>Structured or semi-structured interviews</li> <li>Case study (well-defined unit of analysis)</li> <li>Observation; participant-observation</li> <li>Surveys or written interviews</li> <li>Image, graphic or textual, discourse or other narrative analysis</li> </ul>	<ul style="list-style-type: none"> <li><i>Tests or verifies existing theory</i></li> <li>Experimental design</li> <li>Numeric data (data that can be quantified)</li> </ul>	<ul style="list-style-type: none"> <li>Various designs integrate data at different stages of inquiry, combining: <ul style="list-style-type: none"> <li>Qualitative and quantitative data and analysis, OR</li> <li>Qualitative data with qualitative and quantitative analysis</li> </ul> </li> </ul>
Research Practices	<ul style="list-style-type: none"> <li>Discloses positionality of the researcher (potential bias, transparency)</li> <li>Values participant perspectives</li> <li>May involve personal values in study</li> <li>Validates or explains findings (e.g., multiple sources of data; member-check)</li> <li>Interprets data to generate ideas for curriculum or reform (e.g., design-based research or quality improvement studies)</li> <li>Often collaborates with participants</li> </ul>	<ul style="list-style-type: none"> <li>Research Questions, which may be stated as hypotheses, identify dependent and independent variables</li> <li>Applies standards of reliability and validity</li> <li>Gathers quantitative data – something measured numerically</li> <li>Claims to use unbiased approach or is able to measure for bias</li> <li>Employs statistical procedures</li> </ul>	<ul style="list-style-type: none"> <li>Employs practices of both qualitative and quantitative studies</li> </ul>



## Purpose Statement

### Example Qualitative Study

The study will explore student perceptions of the value of feedback in clinical settings, and identify which factors in feedback situations students believe contribute to feedback being helpful or not in improving knowledge and skills.

### Example Quantitative Study

This study will test the theory that written feedback with specific guidance for improvement enhances students' knowledge or skills. The study will measure student progress by comparing their clinical performance before and after receiving mid-clerkship feedback over the course of three consecutive clerkships. All students will receive mid-clerkship feedback that tells them what they did well and what they need to improve. Half the students will receive additional guidance containing specific suggestions for how to improve knowledge and/or skills.

### Example Mixed Methods Study

The purpose of this mixed methods study is to explore student perceptions of feedback in clinical settings, and to evaluate the impact of mid-clerkship feedback with and without specific guidance for improvement on medical student performance over the course of three consecutive clerkships.

## Your Purpose Statement



## Research Questions & Hypotheses

### Example Qualitative Study

How do medical students perceive the value of feedback for improving knowledge and skills? What factors in the feedback situation do students perceive as contributing to their perception of feedback as helpful or not helpful?

### Example Quantitative Study

Medical students who receive specific, written suggestions for how to improve knowledge and skills midway through clerkship experiences will perform, on average, significantly higher on clinical performance evaluations at the end of clerkship.

### Example Mixed Methods Study

{Questions from both studies above would be included.}

## Your Research Questions (& Hypotheses)



# Conduct a Literature Review

**1) Search for peer reviewed articles and books** that provide a broad review of the education and medical education literature on the theory or topic of study

**2) Identify and review research articles** that address your topic in medical education and address similar research questions

**Goal:** Familiarize yourself with how experts in the field ...

- Frame and discuss the issue
- Phrase their research questions
- Utilize specific research methodologies and why

**3) Search for presentations** at recent medical education conferences that address questions closely related to yours

**Primary Goal** – *Identify a gap in the literature so that you can*

- Craft a study that will address that gap

**Secondary Goal** – *If there is no appreciable gap, identify how your study would build on the studies that have been done.*

*Example:* Test theory or model in different context or with different population, or explore attitudes or perceptions of feedback to understand local application of an educational theory or intervention



# Create a Literature Map

**The map provides a visual summary of your literature review.**  
Set it up however is most helpful to you. 2 types are:



# Reference

- Creswell J. Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 4<sup>th</sup> Ed. Sage:Los Angeles, CA; 2014.

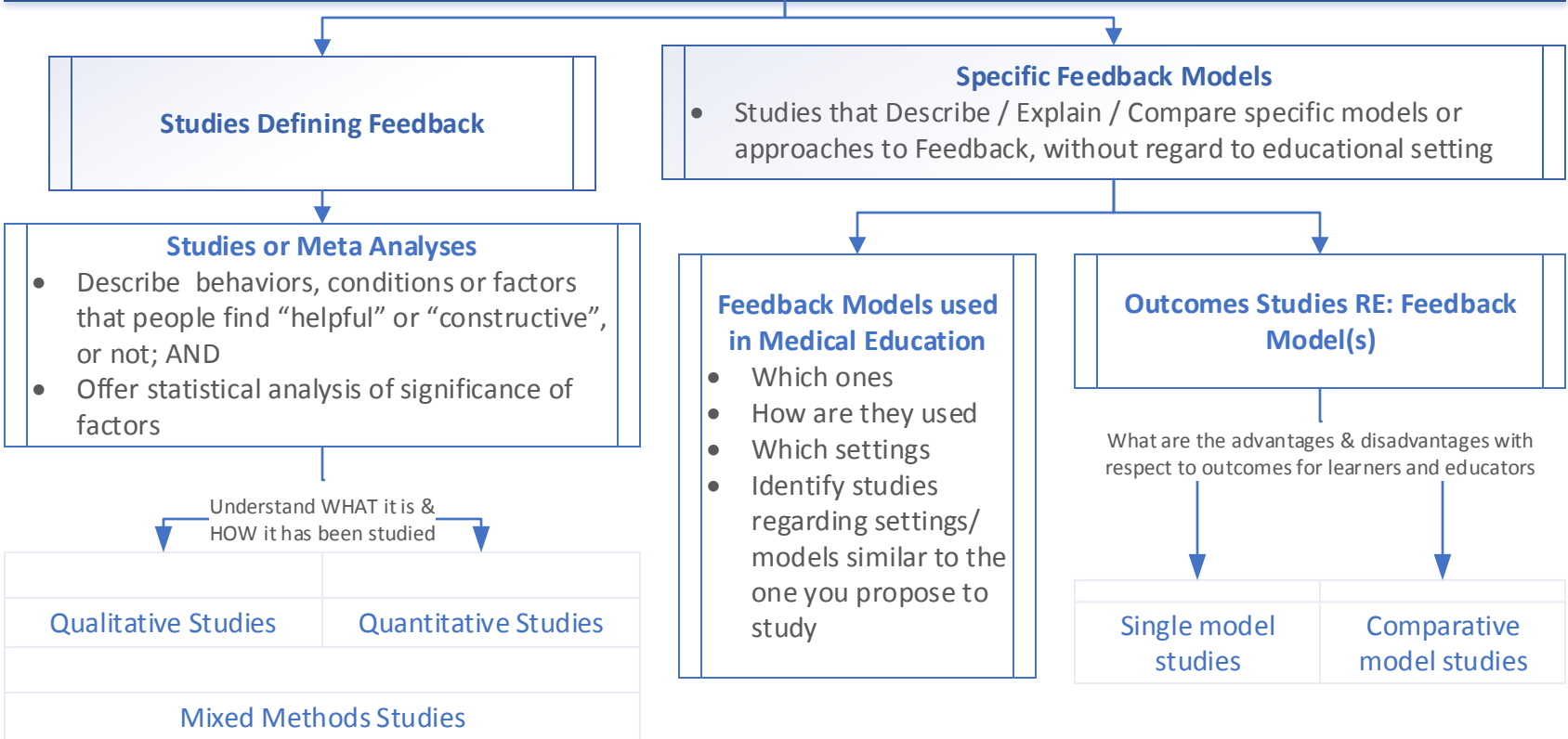
# Notes

**Think about** whether your study will involve \_\_\_\_\_ and how to address these:

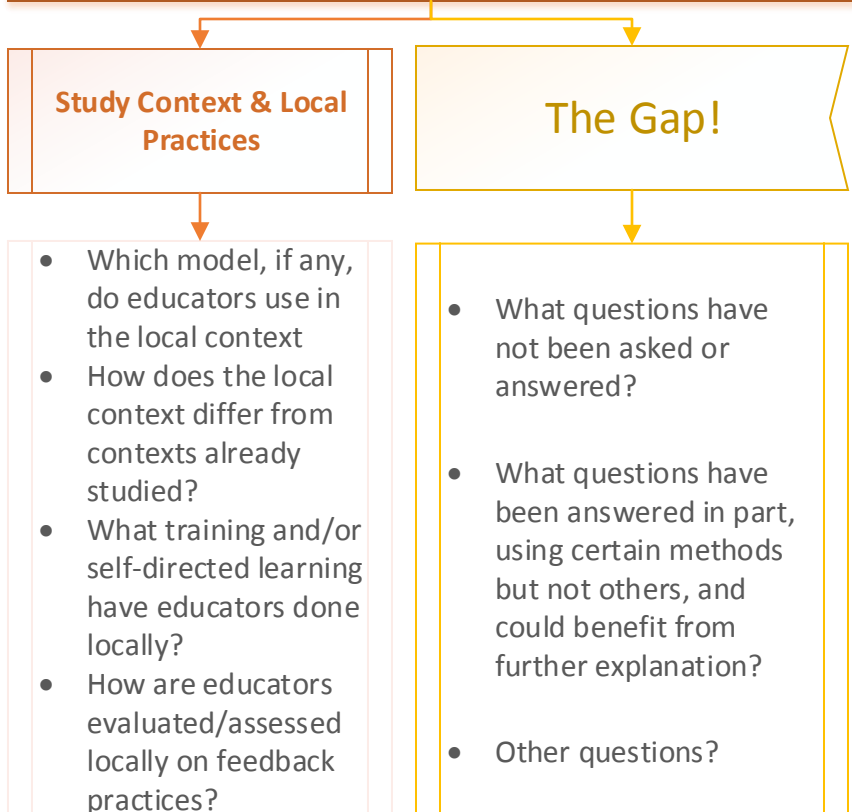
- Confounding variables
- Limitations
- Implications
- Control variables
- The need to address validity or reliability standards

**Other questions or issues?**

## Sample of a Literature Review Map Constructive Feedback in Medical Education



## Funds of Knowledge Map What you know and need to know about local practices to address the specific research question



## Questions a Lit Review Might Raise

- Were there any flaws in the methodologies used? Limitations?
- How were these addressed?
- How do these studies inform your choice of methods?
- How will you address challenges or limitations?
- Which feedback model is used or preferred in the setting you propose to study? Why?
- Will you study what is happening in relation to the ideal model? Or will you propose an educational “intervention” that uses the preferred model?
- Will you design a study that compares what’s being done with what the preferred model?
- What are the challenges with either design?
- How would you propose to address these?

## Questions a Funds of Knowledge Review Might Raise

- Who do I need to involve (educators, participants...)?
- Which setting would yield the most relevant data?
- What timeline would be optimal for gathering data?
- Which methods would best address the research question in the local context?