

Health Professions Education Research:

HEALTH PROFESSIONS EDUCATION CONFERENCE, Kisumu 2024

Ashti Doobay-Persaud MD (she/her/hers)
Associate Professor of Medicine and Medical Education
Co-Director, Center for Global Health Education,
Robert J. Havey, MD, Institute for Global Health
Northwestern University Feinberg School of Medicine
Academic Editor PLOS Global Health



Overview

Creating research questions

Conceptual Frameworks (from general idea to problem identification)

Tools for refining your research question

Planning your medical education research and scholarship

Steps to finalize research



Approach to studying a topic

Reproduced from an educational excellence series at the Feinberg Academy of Medical Educators by Aaron Calhoun, MD – simulation and peds critical care

Consider an education-related research question you have tried or would like to try to address.

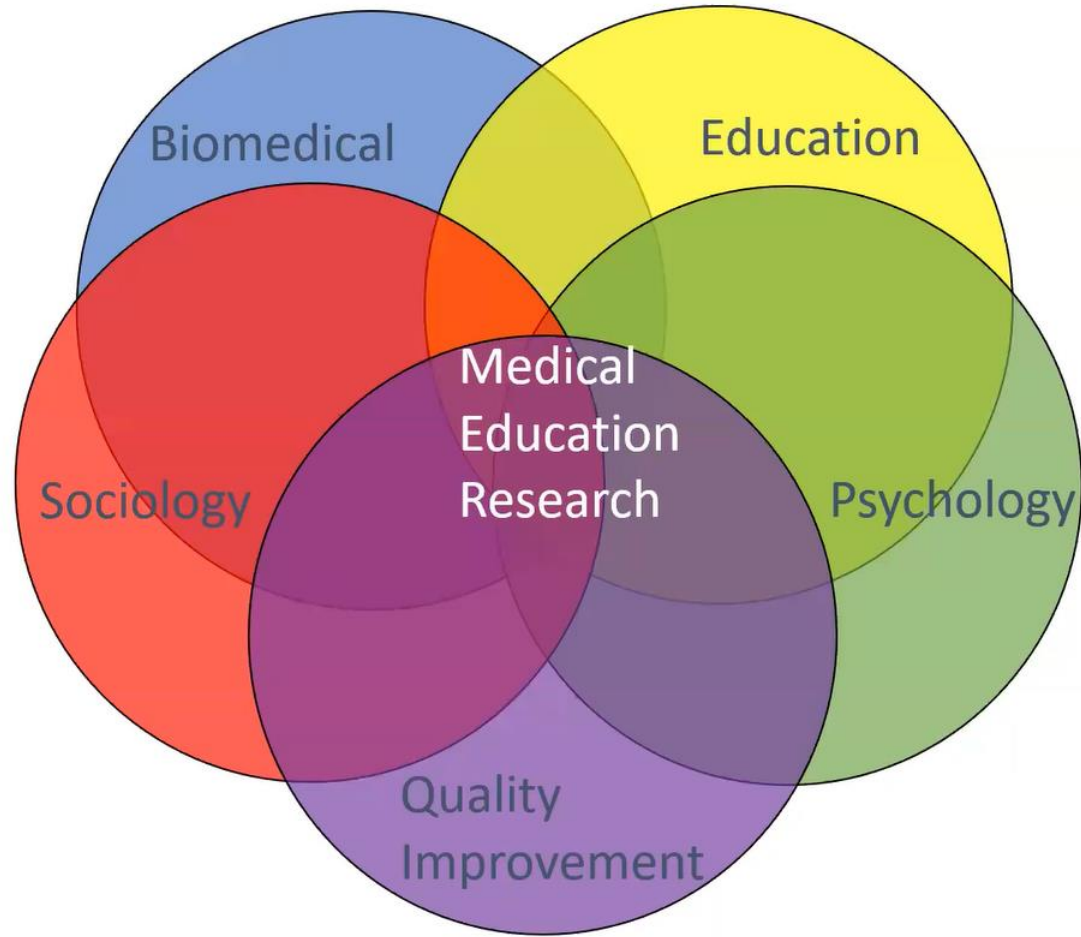
Were you successful?

What barriers did you encounter?

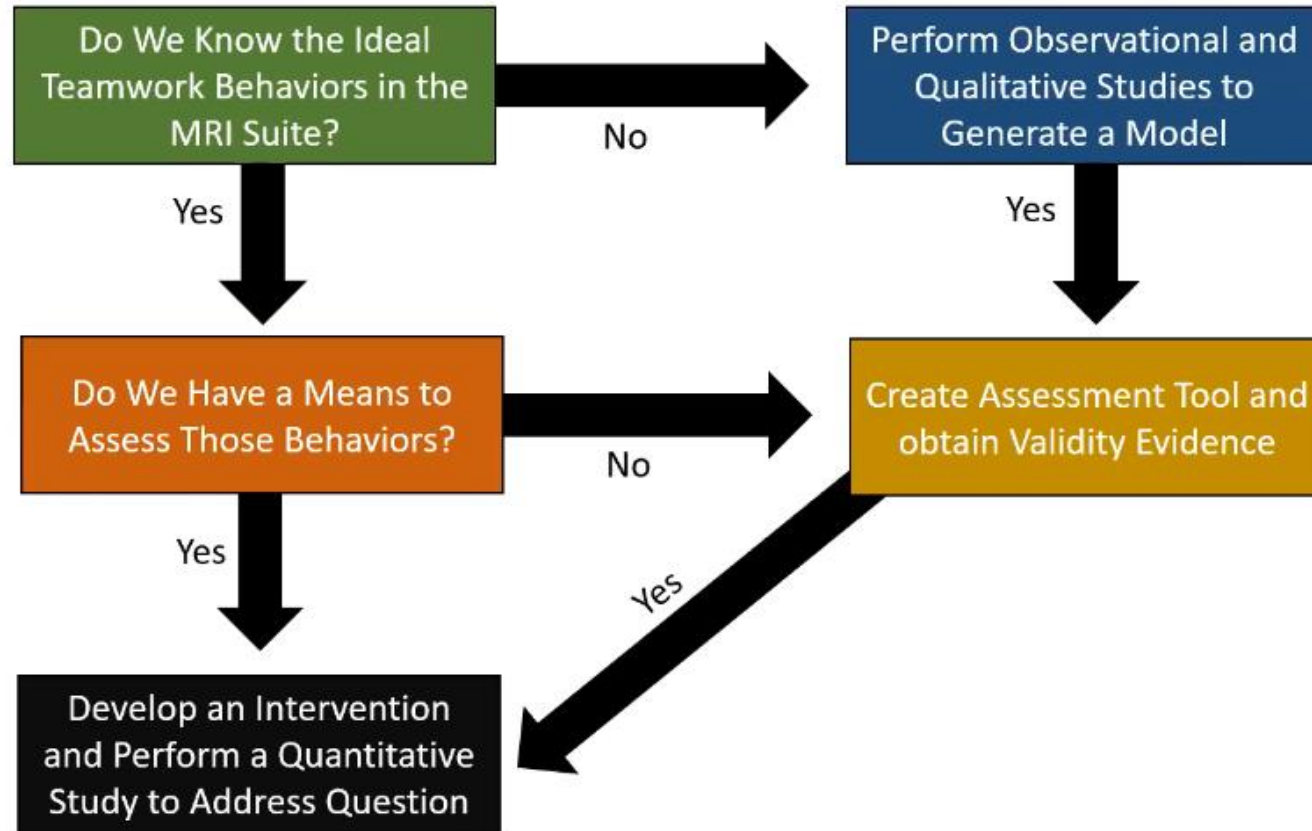
What barriers do you anticipate?

Are there other questions that may need to be addressed?

Dimensions of Medical Education Research



A Schematic Approach



Crafting your Research Question

General Research Question/Idea



Informed by experience
(something you are
interested in learning
more about)



May or may not be
specific or testable



No assessment tools may
exist

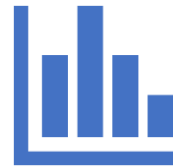


Example: Does a breaking
bad news curriculum
really improve medical
students' skills?

Focused Research Question/Hypothesis



Focused, definitive and predictive



Capable of being quantitatively assessed



Example: How many curricular hours (dosage) of a breaking bad news curriculum do medical students have to complete to meet an identified standard?

Challenges: Research Question in HPE



Biomedical Domain:

(fairly easy) relies on basic physiology or pathophysiology



In social sciences/education:

(not as straightforward) no clear physiology/receptor physiology



Educational studies tend to be less cohesive → can be vague, needs specificity

How can we get specific?
What can be used to support
the theory of a research study?



Conceptual or theoretical framework

“Theories that elucidate why and how learning happens.” –
Zackoff et al., *Academic Pediatrics*, 2019

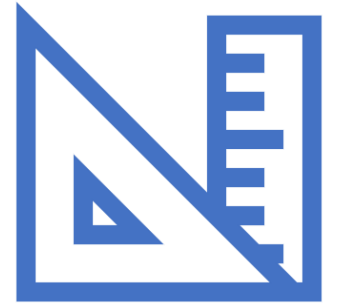
PERSPECTIVE

Enhancing Educational Scholarship Through Conceptual Frameworks: A Challenge and Roadmap for Medical Educators

*Matthew W. Zackoff, MD; Francis J. Real, MD, MEd; Erika L. Abramson, MD, MS;
Su-Ting T. Li, MD, MPH; Melissa D. Klein, MD, MEd*; Maryellen E. Gusic, MD**

Conceptual or theoretical framework

- Your choice of conceptual framework will influence your:
 - Goals and objectives (research question/tandem)
 - Choice of educational or programmatic strategies
 - Evaluation and feedback plan



What conceptual frameworks have
you used?

Or ... you know of?

Examples of Conceptual Frameworks in HPE



Kolb's model of experiential learning

Deliberate Practice (Ericsson)

Bandura's social cognitive theory

Cognitive load theory

Schon's theory of reflective practice

Automaticity and skill expertise (Fitts and Posner)

The MedEd Mentor's Theory Database & Suggester

<https://mededmentor.org/pages/theory-database/>

<https://mededmentor.org/ai-mentor/theory-suggester/>

📍 AI Mentor /

Theory Suggester

Use AI to suggest education theories for your research

Theory Suggester leverages over **50,000 medical education abstracts** to suggest theories.

Please note that these are only suggestions – a starting point for deeper investigation.

Research phenomenon:

Submit

Free while in testing.

Powered by MedEdMentor AI.

Crafting a Research Question/Hypothesis

- If you get this right → you are setting yourself up for success
- If it is unfocused, poorly worded or ambiguous, you will have a lot of trouble
- State your hypothesis:
 - What are you going to do to address the problem and what do you expect find?
- Clear focus: Need to delineate all the parameters and boundaries → be clear about what you are going to address and what you cannot or will not.

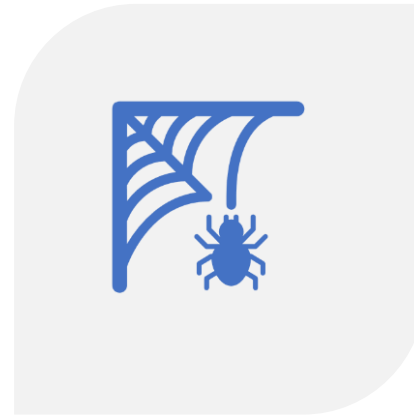
What are some of these parameters?



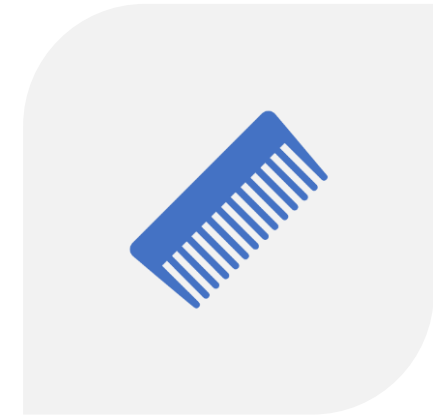
Tools to help you with parameters



PICO/T – FORMULATING CLINICAL
RESEARCH QUESTIONS



SPIDER – TOOL FOR DEVELOPING
RESEARCH QS IN QUALITATIVE
STUDIES



FINER – EVALUATING RESEARCH
QUESTIONS

Does a breaking bad news curriculum really improve medical students' skills?

Refine the Question: Try PICOT and SPIDER

Think-Pair-Share (and write down)

PICOT (clinical- therapy or intervention)

- Population, patient, or problem – [among ____? (Who/What)]
- Intervention or exposure – [does _____? (What)]
 - (observational studies don't have a formal one)
- Comparison/Control (versus _____?)
- Observation or Outcome – [(affect _____?)
When, How, Why?]
- Time-limited [for how long?]

Does a breaking bad news curriculum really improve medical students' skills?

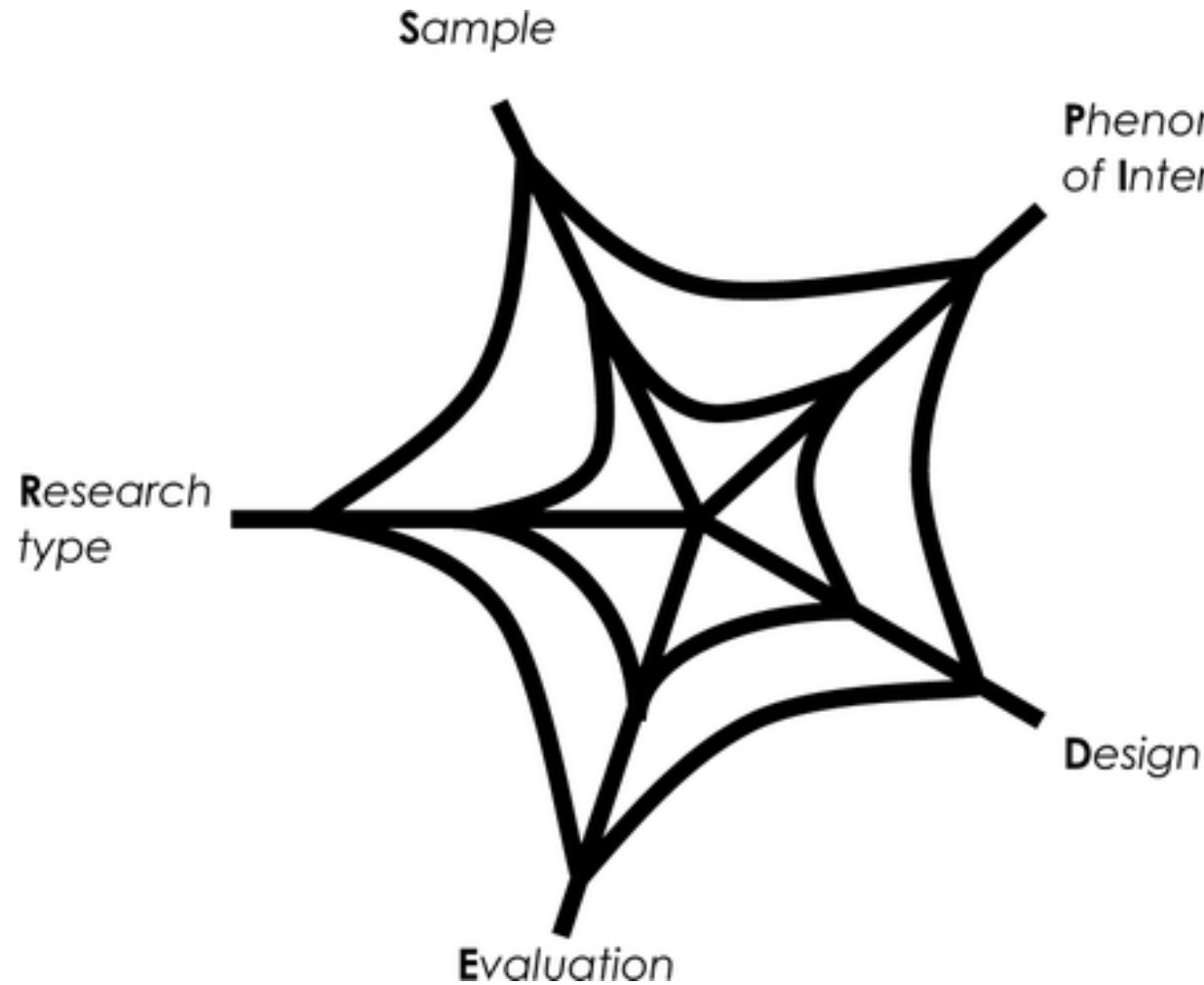
Refine the Question: Try PICOT and SPIDER

Think-Pair-Share (and write down)

Using PICO/T

“In medical students, does an interactive breaking bad news curriculum (intervention) lead to better communication skills and increased patient satisfaction (outcomes) compared to traditional lecture-based teaching (comparison) over a 6-month period (time)?”

SPIDER



Phenomenon of Interest:
What aspect of the breaking bad news curriculum are we interested in studying? (e.g., effectiveness, learner satisfaction, communication skills)

Slides reproduced with permission from Dr. K. Cameron and Dr. M. Adler from Feinberg Academy of Medical Educators at Northwestern University Feinberg School of Medicine

Cooke A, Smith D, Booth A. Beyond PICO: The SPIDER Tool for Qualitative Evidence Synthesis. *Qualitative Health Research*. 2012;22(10):1435-1443

4/3/2024

Using SPIDER

“Among medical students (Sample), how effective is the breaking bad news curriculum (Phenomenon of Interest) when evaluated using a mixed-methods design (Design) that includes pre- and post-intervention surveys, standardized patient assessments, and qualitative interviews (Data) in improving learner communication skills and patient satisfaction (Evaluation)?”

What impact does a breaking bad news curriculum have on learners?

Feasible?

Interesting?

Novel?

Ethical?

Relevant?

Think-Pair-Share (and write down)

What will you measure?


What impact does a breaking bad news curriculum have on learners?

Quant/Qual


Studying a breaking bad news curriculum

Question	Quantitative?	Qualitative?
How many hours of an existing breaking bad news curriculum is required to meet an identified standard?		



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What are learners' attitudes and perceptions about participating in breaking bad news curriculum?		

Studying a breaking bad news curriculum

Question	Quantitative?	Qualitative?
How many hours of an existing breaking bad news curriculum is required to meet an identified standard?	✓	
How do learners describe what they learned during a breaking bad news curriculum?		✓
What are learners' attitudes and perceptions about participating in breaking bad news curriculum?	✓	✓

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Validity



How to be sure you are measuring what you think you are measuring for the population you are studying



NOT the characteristic of the tool



Depends on the decision you are trying to make



Many tools exist, may need to tweak or may need to make one...

Consider multiple data sources

- Surveys (both ratings and comments)
- Focus groups
- Interviews
- Test scores and grades
- Direct observations of learner or environment
- Administrative records (attendance rates, online user data)
- Career outcomes (specialties/placements)
- Patient outcomes



Let's put it all together

1. Research topic/idea?
2. What are your outcome measures?
3. What is your research question?
the intervention?
(if you have one)
4. How are you measuring your variables?
5. Have you piloted/checked measurement quality?
6. What quantitative /qualitative analyses are you using?
7. Did you get IRB approval?
8. Create the study protocol
9. Conduct the study
10. Analyze results



Now...

*identify a journal...and look up some articles too

WRITE, WRITE, WRITE...



Final steps

11. What lessons were learned?
12. Have you had your draft peer reviewed by other than co-authors?
13. Have all the authors given final approval of the abstract?
14. Are you ready to submit?

Journals for Educational Scholarship (peer-reviewed)

[Journal of Graduate Medical Education](#)

graduate medical education community to improve the quality of graduate medical education.

[Academic Medicine](#)The journal's areas of focus include: education and training issues; health and science policy; institutional policy, management, and values; research practice; and clinical practice in academic settings.

[BMC Medical education](#)

a special focus on curriculum development, evaluations of performance, assessment of training needs and evidence-based medicine.

[The Clinical Teacher](#) (online only) online journal for clinical educators, sections on specific teaching approaches, reports and evaluation of innovative learning activities

[Medical Education](#)

undergraduate education, postgraduate training, continuing professional development, interprofessional education.

[Medical Education Online](#)

education and training of physicians and other health care professionals.

[Medical Teacher](#)

innovation and research in medical education, case studies, survey articles, practical guidelines, reviews of current literature and book reviews (AMEE)

[MedEdPORTAL](#)

MedEdPORTAL Publications is a free, peer-reviewed publication service provided by the AAMC. They accept health education teaching and assessment resources.

[Teaching and Learning in Medicine](#)

TLM is an international, peer-reviewed journal for teaching and learning in the health professions.



Scan me!

SCOHPPE:
recruiting HPE
leadership for
interviews.