

Objectives

After attending this session, you should be able to:

- Formulate a researchable educational problem.
- Discuss design options for scholarly projects.
- Develop a methodical research plan.

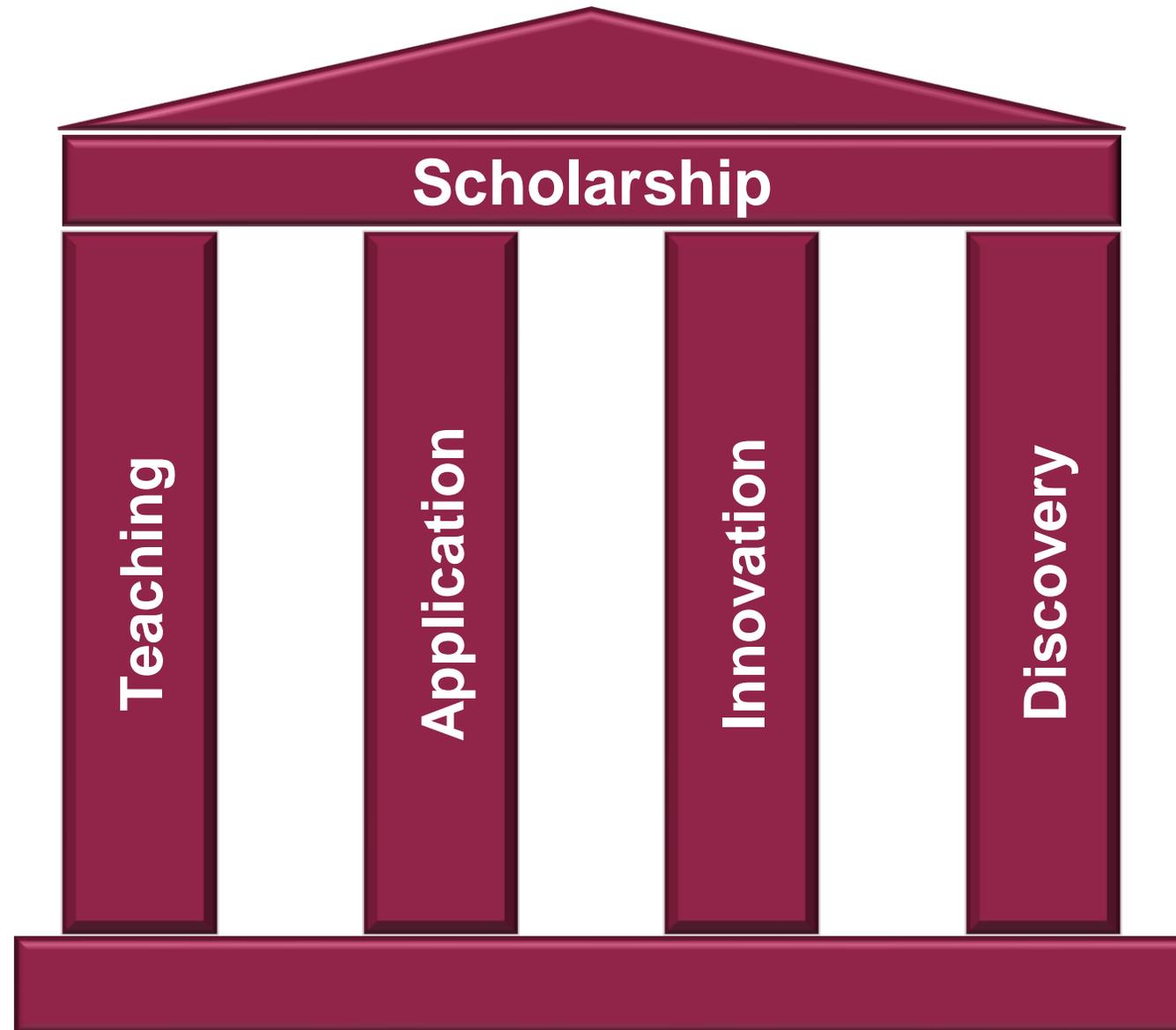


Agenda

- Brief introduction – 15 minutes
- Small group work – 15 minutes
- Whole group discussion – 15 minutes
- Closing remarks and Q&As



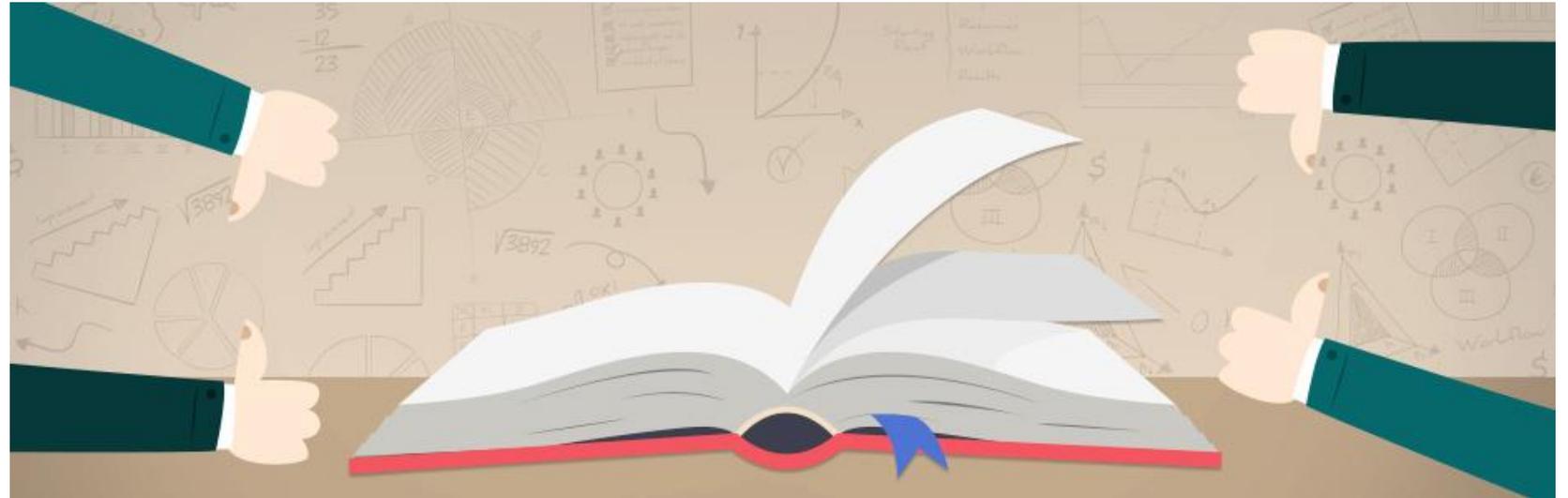
Boyer's Scholarship Redefined (1990)

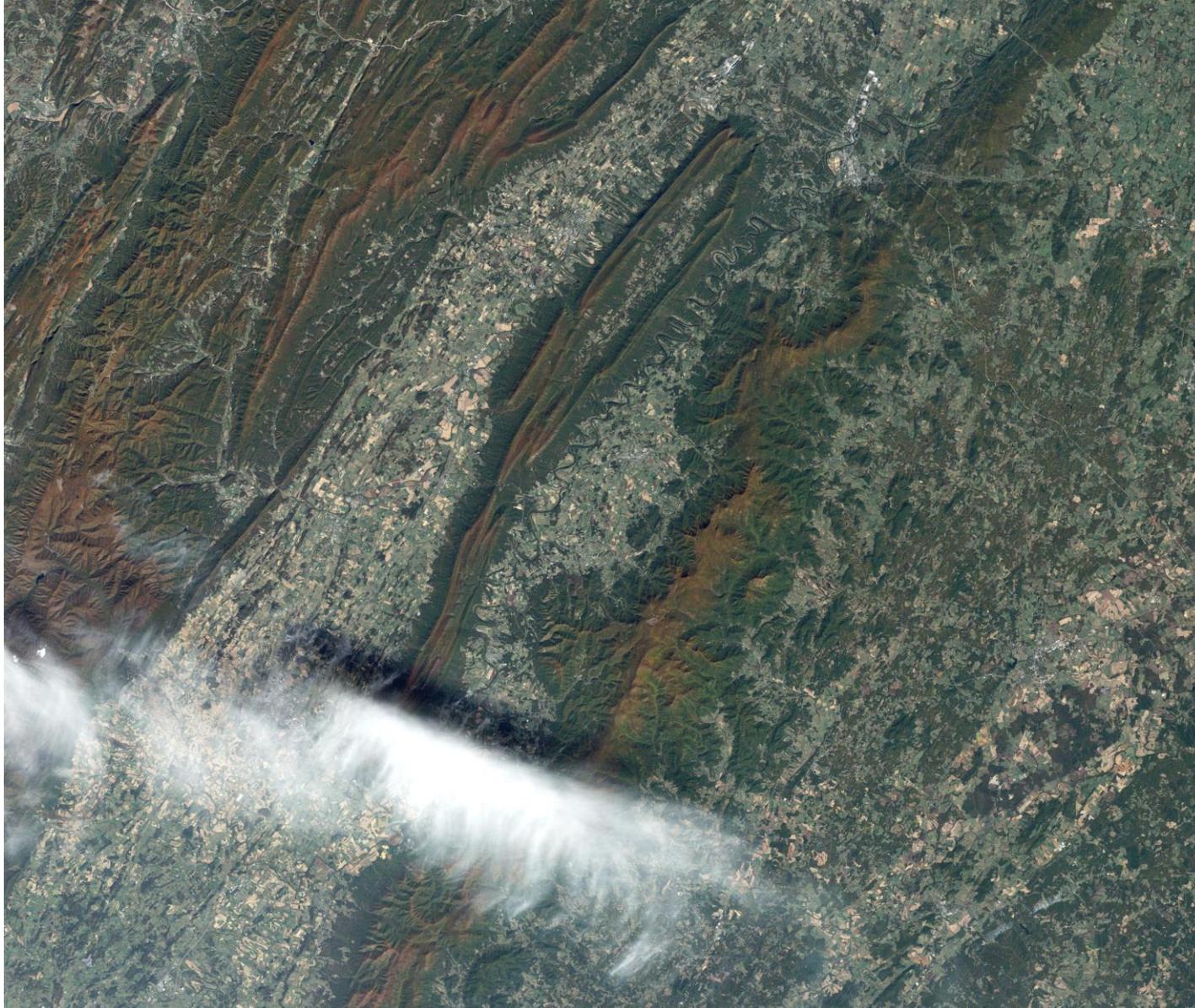


Scholarship of teaching

- Components made public
- Available for peer review
- Reproducible and built on by others

Pat Hutchings & Lee S. Shulman (1999) *The Scholarship of Teaching: New Elaborations, New Developments, Change.*

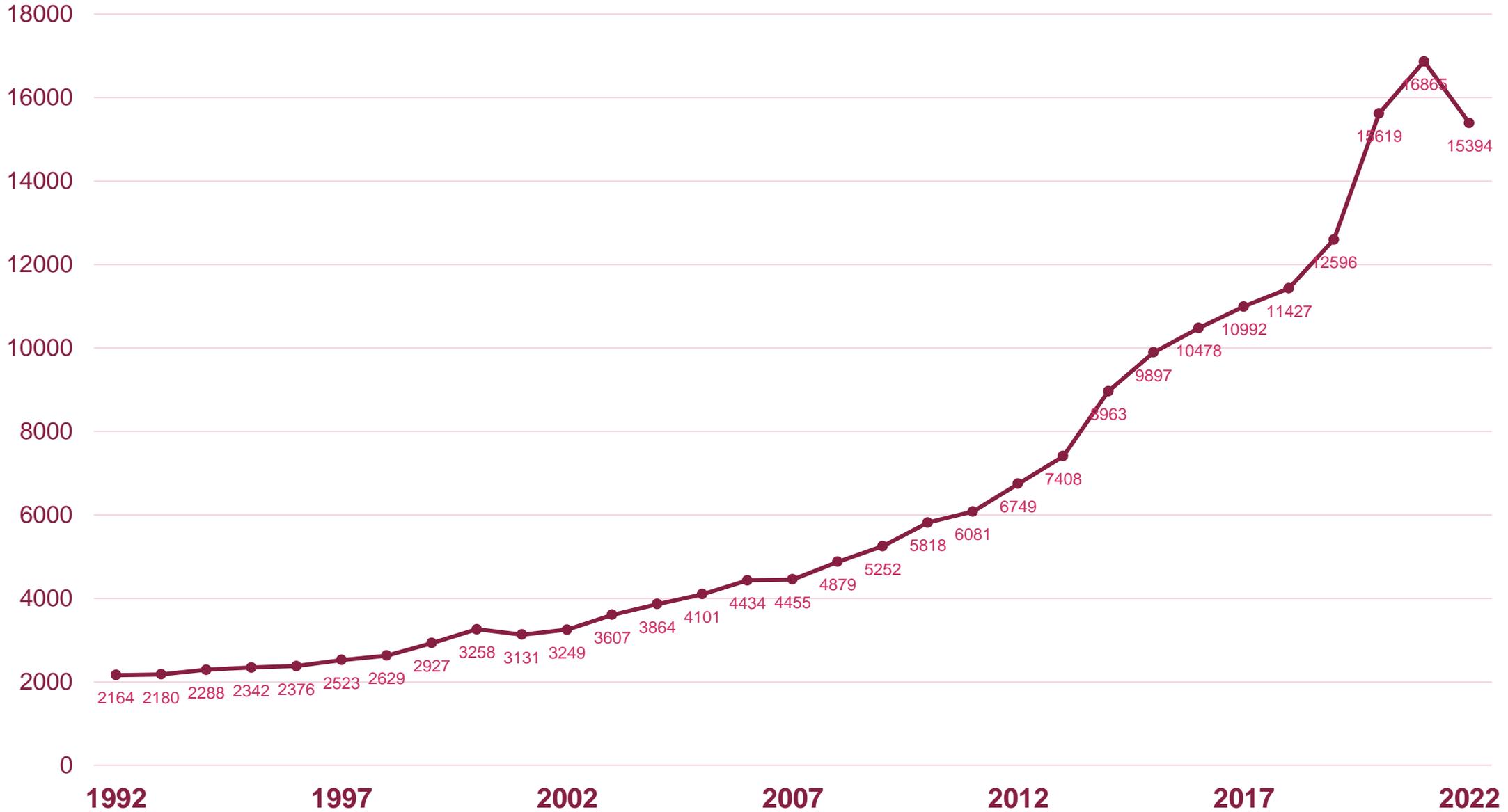




Lay of the land in MedEd scholarship

- Output
- Topics
- Characteristics

"Medical Education" in PubMed



Med Ed Research Topics 1988-2010

1. Issues in student assessment
Reliability; validity; MCQs; self-assessment; assessors; portfolios
2. Clinical skills training
3. Clinical clerkships
4. Problem-based learning
5. Community-based training
6. Clinical competence assessment
7. Teaching the clinical sciences
8. Communication skills training
9. Student characteristics
10. Objective structured clinical examination (OSCE)
11. Teaching the basic sciences
12. Nature of clinical reasoning
13. Professionalism in medicine
Attitudes; cultural competence; medical ethics teaching
14. Costs of medical education
15. Faculty development
16. Use of simulations
17. Admission to medical school
18. Medical licensing examination
19. Knowledge retention
20. Specialty choice
21. Patient safety
22. Scholarship in education
23. Humanities in medicine
24. Teaching through lectures
25. Interprofessional education
26. International medical graduates
27. Women's health
28. Underrepresented minority students
29. Computer-assisted instruction

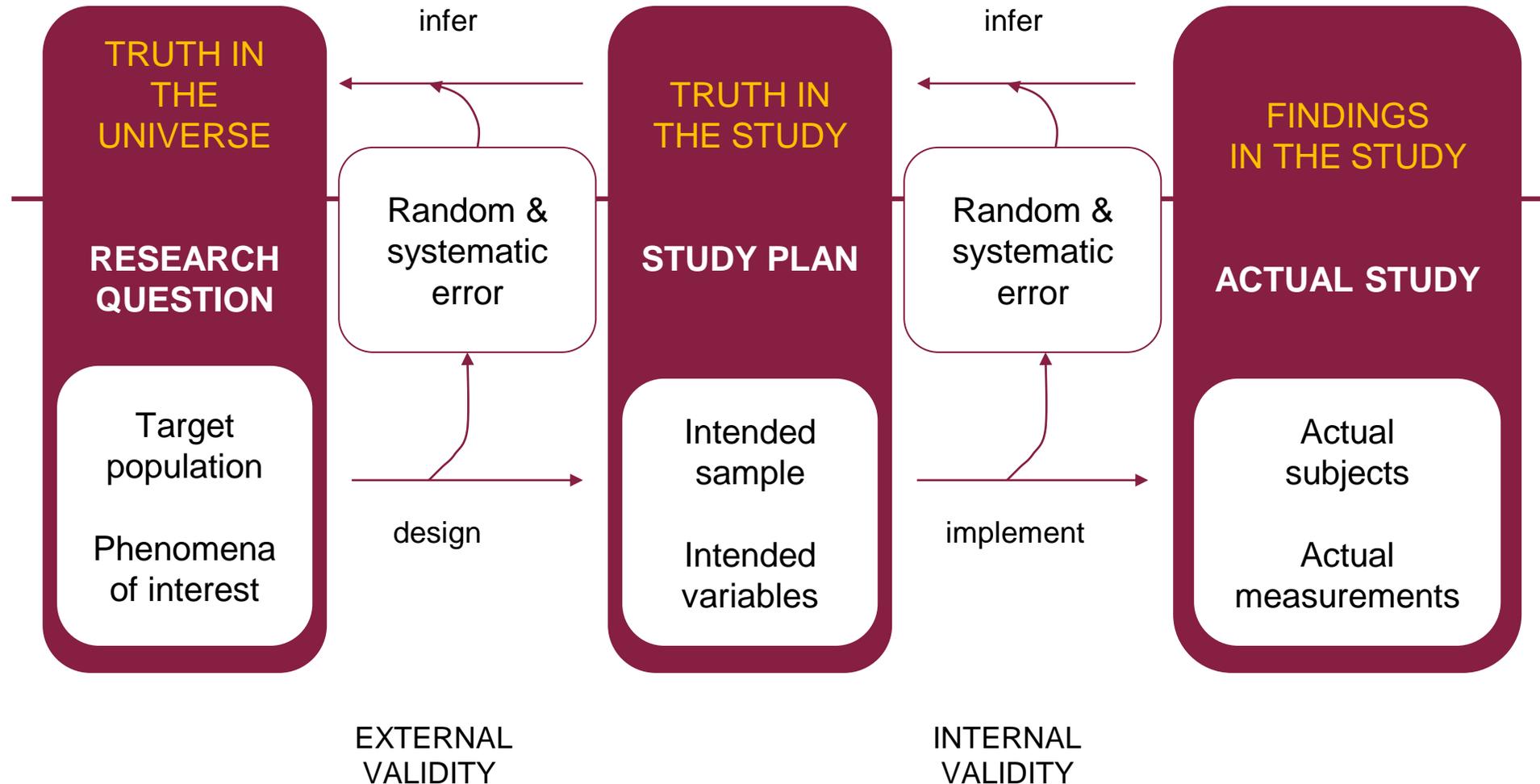
What is Educational Research?

... examines education and learning processes and the human attributes, interactions, organizations, and institutions that shape educational outcomes.

... seeks to describe, understand, and explain how learning takes place...

... embraces the full spectrum of rigorous methods appropriate to the questions being asked...

Research Process

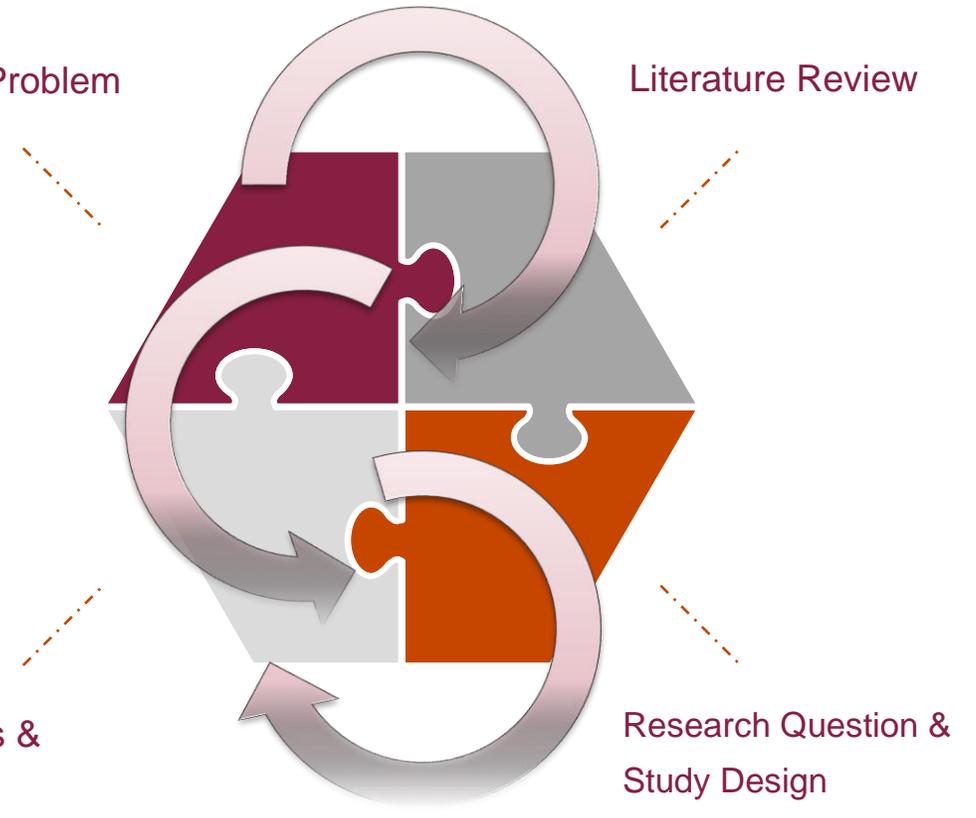


Educational Research Process

- Have you noticed a performance gap?
- Has this been addressed previously?
- What can be done about it?
- How can it be done?
- How to test whether it worked?
- What are the potential implications?

Educational Problem

Literature Review



Educational gap

Sample problems/gaps...

- MS2 students seem to struggle with interpreting ECGs ...
- During inter-professional simulation sessions, some teams seem more efficient and effective than others...
- Only a few residents actively identify adverse events and near misses and report them to their supervisors...

Identify educational problem/gap

Based on your observations:

- Describe what learners demonstrate now and what they should be able to
- Elaborate on symptoms of the problem, things that make you stop and wonder if something is wrong

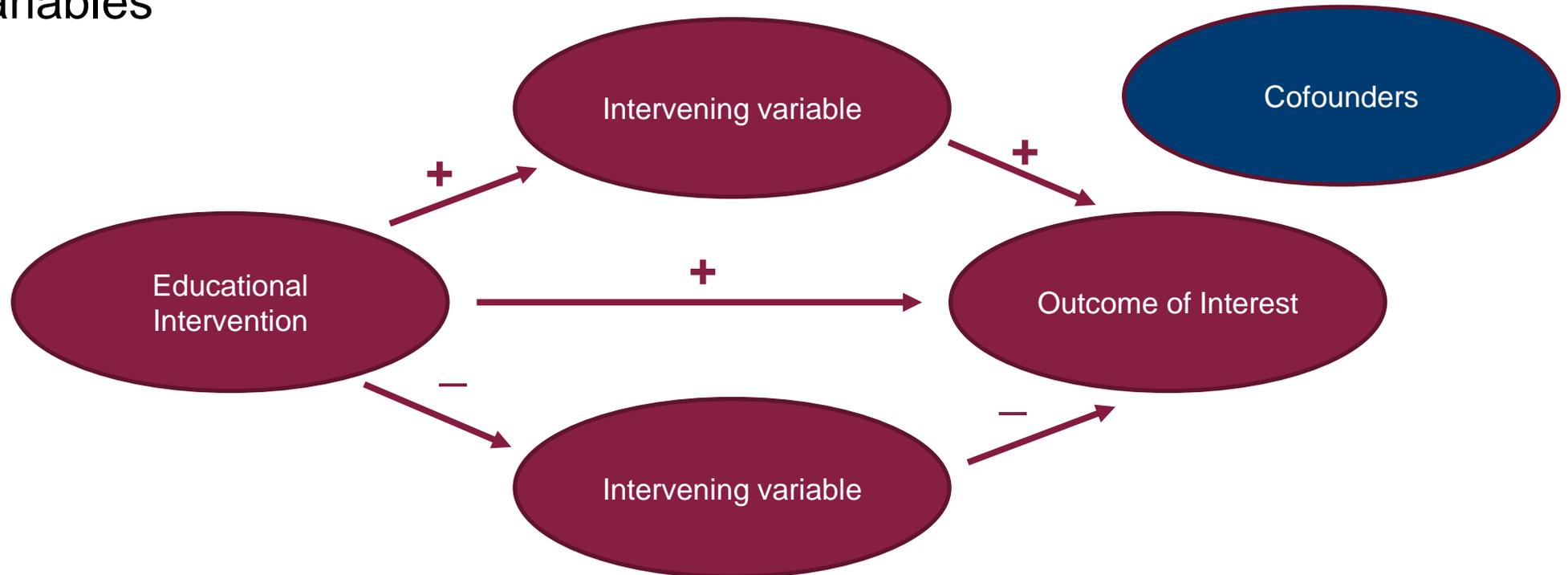
Also, briefly address:

- The environment within which the educational gap exists
- Consider the gap in terms of knowledge, skills, attitude, motivation, constraints
- Why do you think this problem can be addressed by instruction?

Literature review

What is already known?

- Gap in understanding
- Theoretical frameworks
- Relevant variables
- Measures



Research question & Study design

“Finer” questions..

FINER Criteria for good research questions:

- Feasible
- Interesting
- Novel
- Ethical
- Relevant

PICO(T) Criteria

P opulation	Who are the learners?
I ntervention	How will you improve outcomes?
C omparison	What is the alternative to compare with the intervention?
O utcome	What do you hope to improve?
T ime	What are the appropriate time points to assess the outcome?

Haynes, R. B. (2006). Forming research questions. *Journal of clinical epidemiology*, 59(9), 881-886.

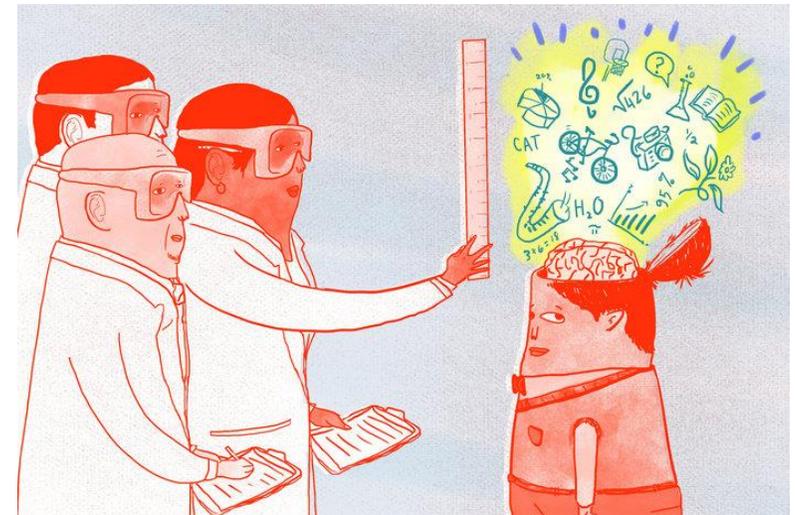
Study design

<p>Quantitative research often start with hypotheses related to relationships between variables of interest</p>	<p>Descriptive Correlational Quasi-experimental Experimental</p>
<p>Qualitative research in depth study of a phenomenon with open-ended questions permitting</p>	<p>Narrative Ethnography Phenomenology Grounded theory</p>
<p>Mixed methods research</p>	<p>Incorporates both quantitative and qualitative approaches</p>

Educational Measurement



http://mindbodymusings.blogspot.com/2012_06_01_archive.html



Subjective

Objective



Qualitative

Quantitative

Outcome



Assessment



Outcome



Assessment



Move beyond self-report data

The degree to which the targeted patient outcomes occur as a result of the training

Results

The degree to which learners apply what they learned when they are back on the job

Behavior

The degree to which learners acquire the intended knowledge, skills, attitude, confidence

Learning

The degree to which learners find the training favorable, engaging, and relevant

Reaction

Kirkpatrick's – 4-step training evaluation model

Small group activity

Report back

Briefly talk about:

- Educational gap
 - Significance and relevance
- Literature on this topic
- Research question
 - FINER & PICO
- Study design
 - methodology, participants, measures, etc.

In closing

Conducting Educational Research



- Real educational need
- Research question drives the methods
- Intervention:
 - learner-focused,
 - authentic,
 - appropriate in duration and scope
- Move beyond self-report

Medical Education Scholarship

- Describe a novel curriculum or innovative educational modality
- Provide a perspective on a relevant/timely issue
- Review of relevant literature
- Propose/validate a novel assessment framework
- Assess the efficacy of an educational intervention

