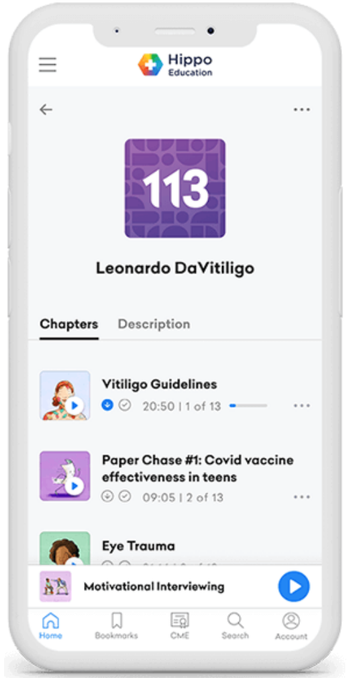
Twentyish questions to ask yourself to build an effective educational research question

Michael Cosimini, Associate Professor Pediatrics 1/14/26



MedEdGAMER.org

GAMER

Collaborative

Academic Pediatrics Podcast

Podcast

Academic Pediatrics Podcast

Academic Pediatrics

Who am I?

Generating Good Research Questions in Health Professions Education

C. Jessica Dine, MD, MSHP, associate program director, Internal Medicine Residency Program, Judy A. Shea, PhD, associate dean, Medical Education Research, and Jennifer R. Kogan, MD, assistant dean, Faculty Development, Perelman School of Medicine at the University of Pennsylvania

Identify an idea or problem

Perform a literature review

Generate a specific research question

Develop a study design

DOI: 10.1097/ACM.0000000000001413

Generating Good Research Questions in Health Professions Education

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Identify an idea or problem	**-Local problem** -Question from the literature
	

DOI: 10.1097/ACM.0000000000001413

Lapses in handoffs have been occurring at your institution. You are wondering how to improve handoff process

Residents are arriving late to noon conference and the APD is grumpy about this

Interesting interesting
or
Interesting impactful?

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Identify an idea or problem	-Local problem **-Question from the literature**

What literature should I be monitoring?

Good stuff

Good stuff

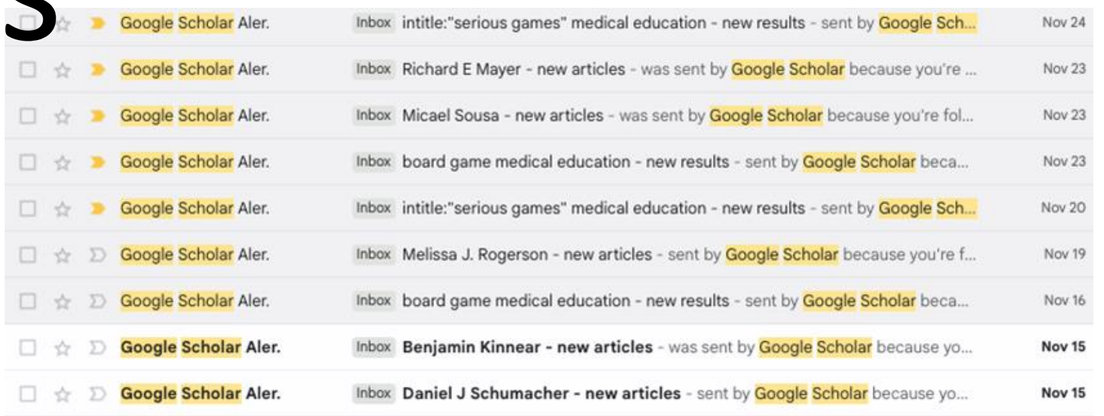
What literature should I be monitoring?

Email

-Google scholar alerts

-Journal TOC

-Specialty listservs



Journal or other podcasts

Podcasts

All of the below podcasts can be found on ***Medical Education's*** **iTunes page**, with new podcasts added each month! To receive them all, please subscribe.

2025

November (Volume 59, Issue 11)

Immersive virtual reality training: Addressing challenges and unlocking potentials
Read the **accompanying article**

From challenge to growth: Exploring physician narratives of patient complaints during residency
Read the **accompanying article**

October (Volume 59, Issue 10)

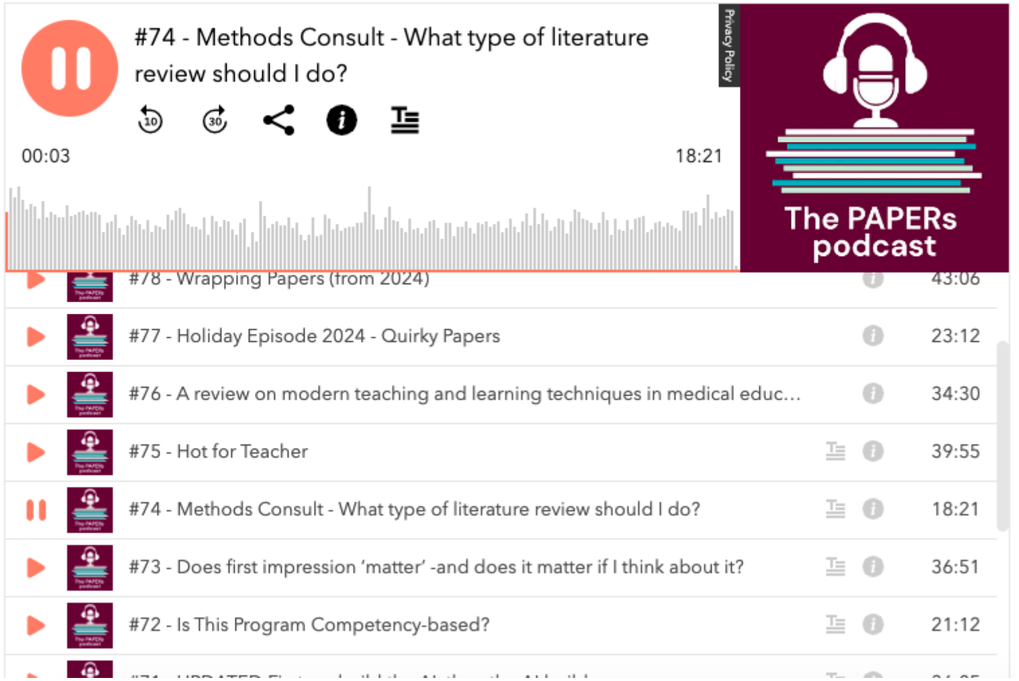
Artificial intelligence and gender equity: An integrated approach for health professional education by Margaret Bearman and Rola Ajjawi
Read the **accompanying article**

Uncertainty experienced by newly qualified doctors during the transition to internship by Molly Dineen
Read the **accompanying article**

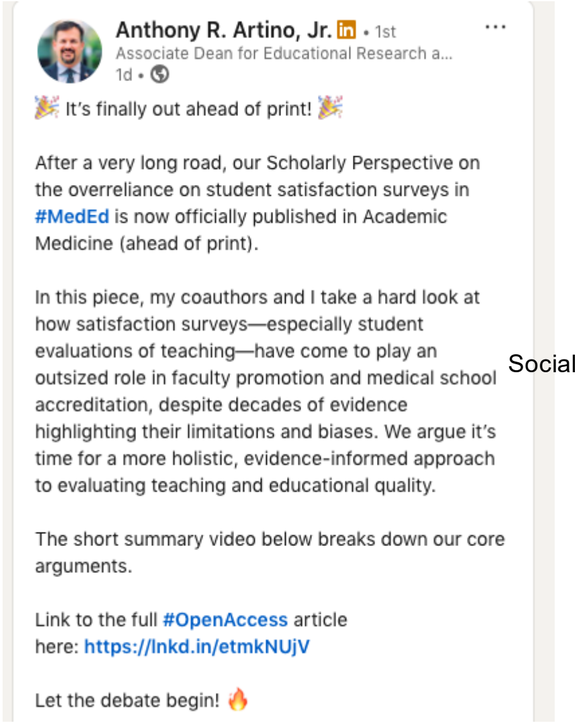
September (Volume 59, Issue 9)

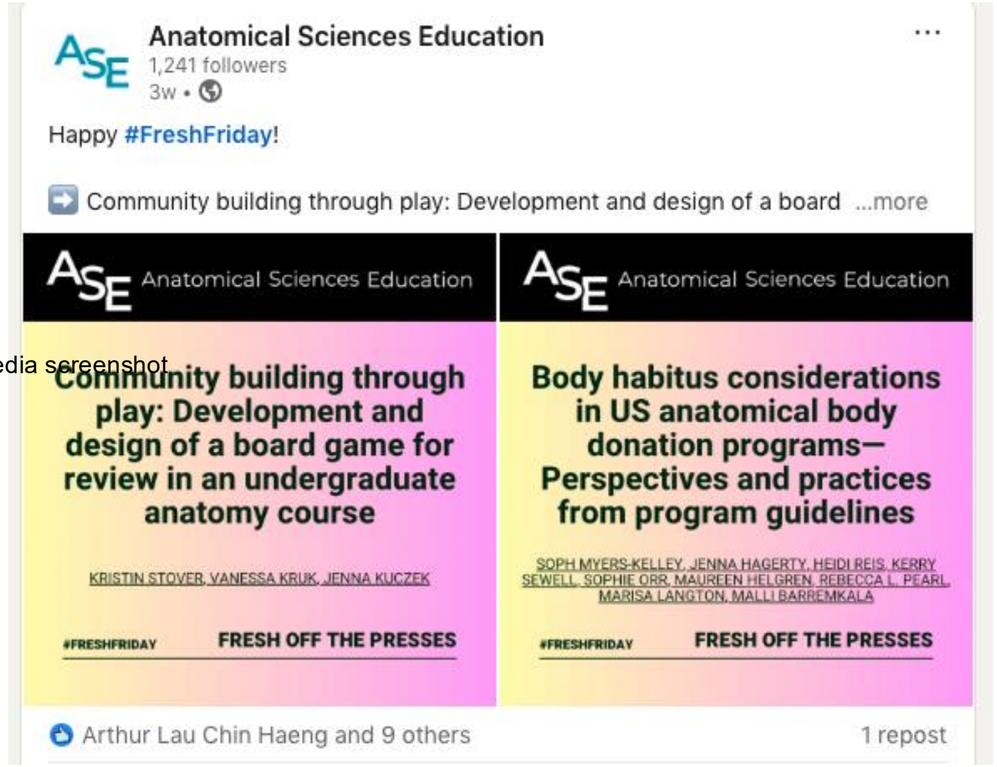
Seeking medical wisdom: Development of a physician-defined practical model of wise competence - An interview with James N. Woodruff

All episodes-list



Other social media





Social media screenshot

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Identify an idea or problem	
Perform a literature review	**-Review prior publications** -Conceptual framework

DOI: 10.1097/ACM.0000000000001413

How does this question fit into the literature?

Draft the introduction now!

Problem/Gap/Hook

Hey should we be starting with a lit review?

JGME Literature Review Series

This series provides an overview of 8 influential approaches to knowledge synthesis: Systematic Reviews, Realist Reviews, Narrative Reviews, Scoping Reviews, State-of-the-Art, Critical Reviews, Meta-ethnographic Reviews, and Integrative Reviews. For each literature review, 2 articles are provided: (1) an overview of the review type with background information on philosophical foundations, purposes, and expected products for readers and researchers, and (2) a short article with steps that outline the "nuts and bolts" of this type of review.

Introduction to the JGME Literature Review Series

Anna MacLeod, PhD; Robin Parker, MLIS; Lara Varpio, PhD

Literature Reviews: Key Considerations and Tips From Knowledge Synthesis Librarians

Robin Parker, MLIS; Lindsey Sikora, MISt

Understanding the Differences That Differentiate: A Model for Deciding Which Literature Review to Conduct

Lara Varpio, PhD; Robin Parker, MLIS; Anna MacLeod, PhD

Systematic Review

Systematic Reviews in Medical Education

Lauren A. Maggio, PhD; Anita Samuel, PhD; Elizabeth Stellrecht, MLS

A Reader's Guide to Medical Education Systematic Reviews

Elizabeth Stellrecht, MLS; Anita Samuel, PhD; Lauren A. Maggio, PhD

https://jgme.kglmeridian.com/page/jgme_literature_review_series

Objectivist or Subjectivist?

Objectivist research seeks to create knowledge that is not influenced by an individual's perceptions or understandings

"Are skills-based programs effective for reducing resident burnout?" - Systematic review

10.4300/JGME-D-24-00151.1

Subjectivist orientation aims to understand the meaning that people make about an experience or phenomenon

How theories of intersectionality could offer important insights into the literature on burnout - Critical review

10.4300/JGME-D-24-00151.1

Objectivist

Systematic: Synthesis of the evidence to answer a specific research question

Realist: Unpack the patterns of context-mechanism-outcome relationships: *“what works for whom under what circumstances”*

Narrative -Scoping: Map the depth and breadth of emerging topics

Subjectivist

Narrative - Critical: narrative synthesis critiquing literature based on outside theory or literature from another field.

Medical Science Educator (2025) 35:555–567
https://doi.org/10.1007/s40670-024-02206-6

REVIEW

ChatGPT and Other Large Language Models in Medical Education

Alexandra Aster[1] · Matthias Carl Laupichler[1] · Tamina Rockwell-Kollmann[1] · Gilda Masala[1] · Ebru Bala[1] · Tobias Raupach[1]

What is the extent of publications regarding LLMs in medical education 1 year after the release of the most prominent LLM, ChatGPT?

Scoping: Map the depth and breadth of emerging topics

RQ1: What is the extent of publications regarding LLMs in medical education 1 year after the release of the most prominent LLM, ChatGPT?

RQ2: What specific themes do publications exploring the utilization of LLMs in medical education focus on?

RQ3: What is the relation of empirical research to theoretical/conceptual publications regarding LLMs in medical education?

medical education

MEDICAL EDUCATION IN REVIEW | Open Access

Optimising the delivery of remediation programmes for doctors: [redacted]

Address the complexity of remediation for practising doctors by developing a theory of how remediation is supposed to work, for whom and the contexts that lead to different outcomes.

https://asmepublications.onlinelibrary.wiley.com/doi/10.1111/medu.14528

Unpack the patterns of context-mechanism-outcome relationships: *“what works for whom under what circumstances”*

Our aim was to address the complexity of remediation for practising doctors by developing a theory of how remediation is supposed to work, for whom and the contexts that lead to different outcomes.

MEDICAL EDUCATION IN REVIEW

Scoping reviews in medical education:

Lauren A. Maggio[1] | Kelsey Larsen[2] | Aliki Thomas[3] | Joseph A. Costello[4] | Anthony R. Artino Jr.[5]

What are the characteristics of the scoping reviews and how can they be improved?

Games for Health Journal > Vol. 13, No. 6

Review Article | NO ACCESS | Published Online: 10 December 2024

Effectiveness of Escape Room in Medical Education: [redacted]

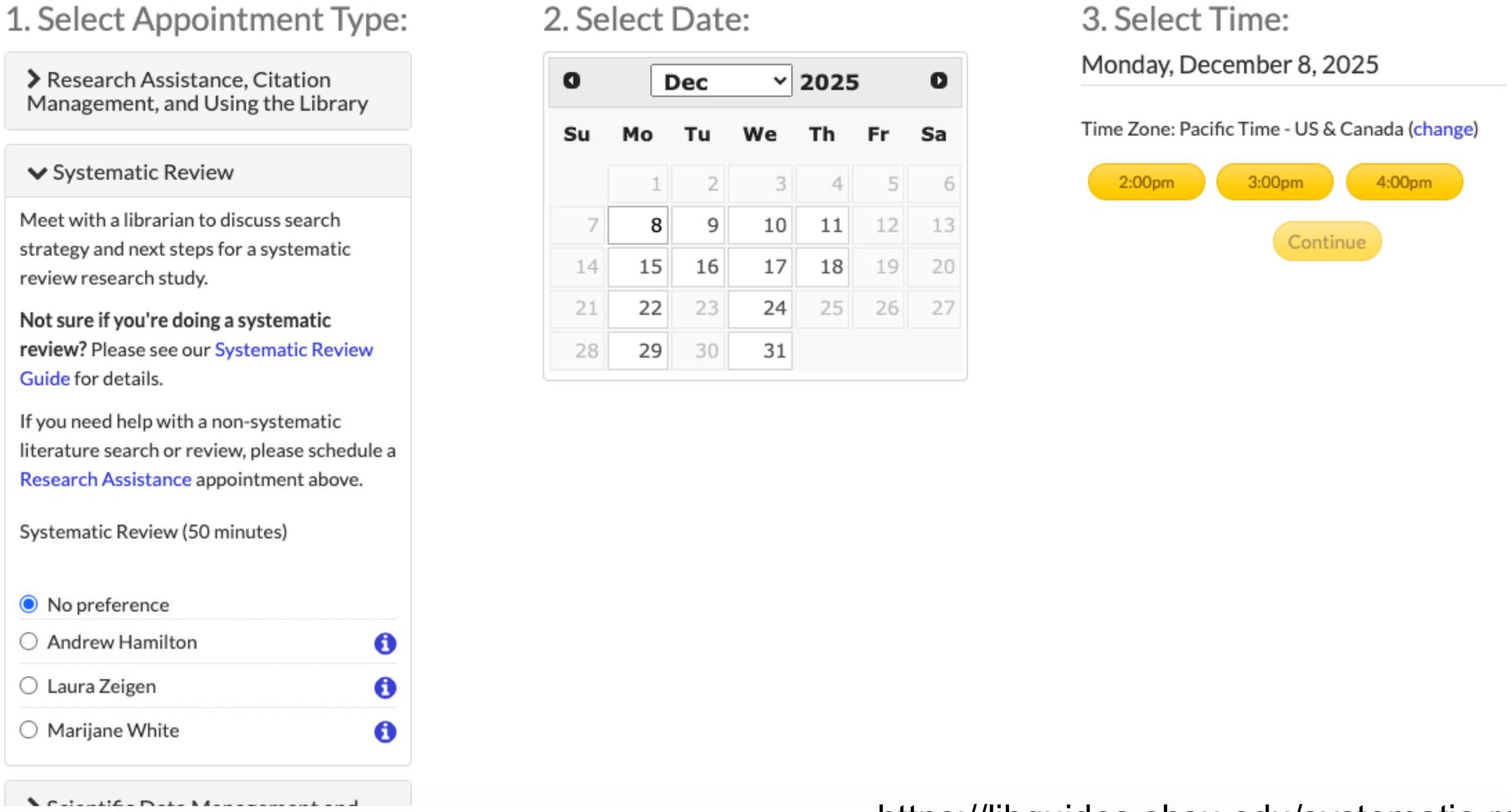
Authors: Yuxuan He, Xiaomei Chen, Huijuan Ma, Rongrong Zhao, Houxiu Zhou, and Yanni Yang | AUTHORS INFO & AFFILIATIONS

Publication: Games for Health Journal • https://doi.org/10.1089/g4h.2023.0070

Overall, escape rooms had a more significant positive effect than traditional learning on knowledge (standardized mean difference [SMD]: 0.84; 95% confidence interval [CI]: 0.36–1.33)

https://pubmed.ncbi.nlm.nih.gov/39093839/

Who can help?



https://libguides.ohsu.edu/systematic-reviews

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Identify an idea or problem	
Perform a literature review	-Review prior publication **-Conceptual framework**

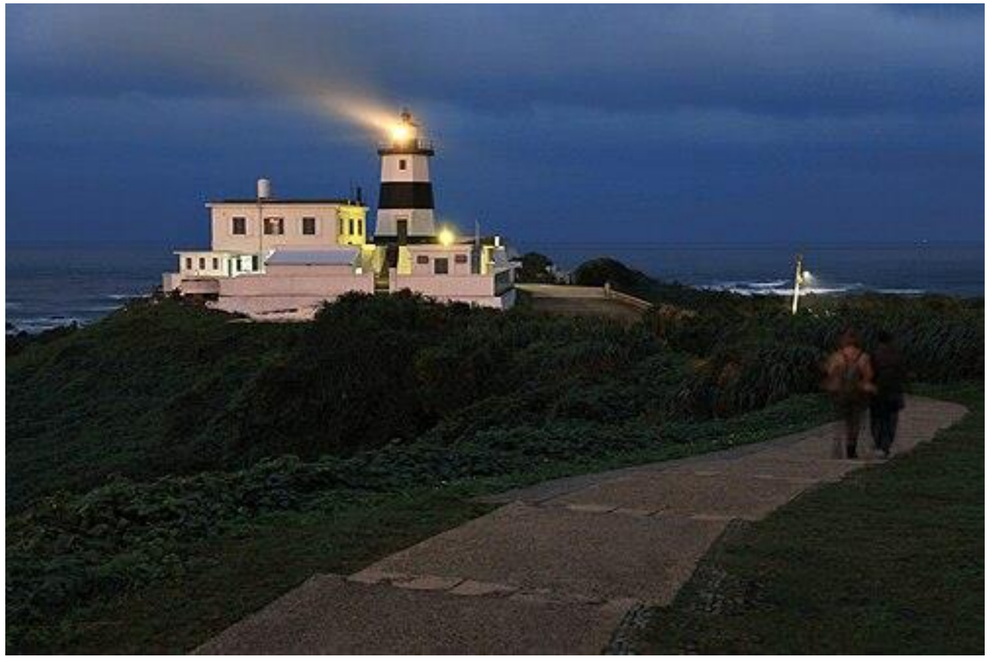
DOI: 10.1097/ACM.0000000000001413

Medical Education Flamingo, MD, ...
@MedEdFlamingo

It's the main reason why my papers are rejected by Kevin Eva: "With no conceptual framework (see Bordage, 2009) included in this paper it is difficult to determine what fundamental advance in knowledge is offered by the results."

Conceptual frameworks

- Ways of thinking about a problem or a study
- Ways of representing how complex things work



https://commons.wikimedia.org/wiki/File:%E5%AE%88%E8%AD%B7%E6%B5%B7%E7%96%86_Fuguijiao_Lighthouse_at_night.jpg

https://commons.wikimedia.org/wiki/File:Magnifying_glass_on_the_page_of_a_book.jpg

https://asmepublications.onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2923.2009.03295.x

- Theories that been confirmed by observations or experiments
- Models derived from theories, observations or sets of concepts
- Evidence-based best practices derived from outcome and effectiveness studies

Where can I find a theory?

ALiEM Academic Life in Emergency Medicine

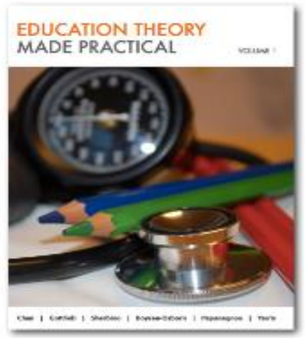
Academic Life

‹ Previous Next ›

Education Theory Made Practical (Volume 1): An ALiEM Faculty Incubator eBook Project

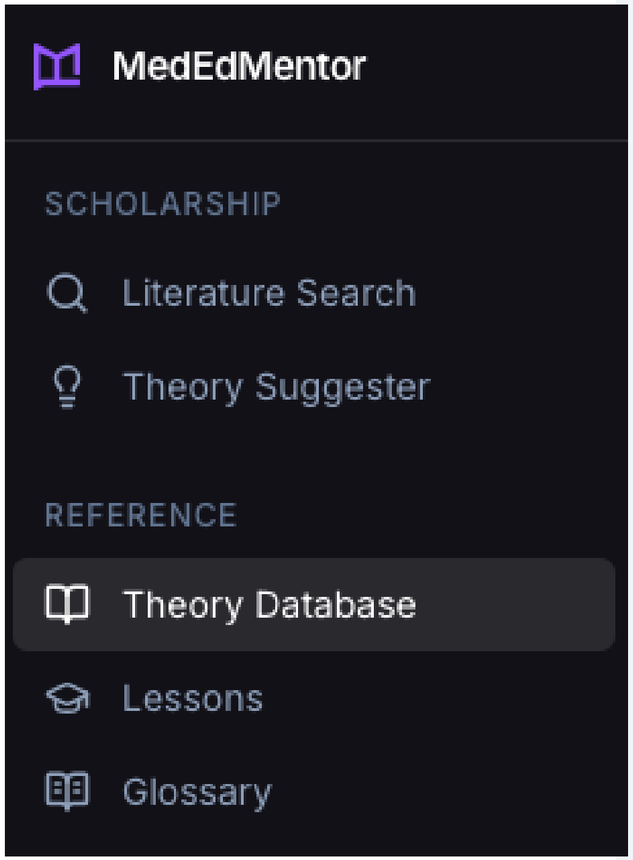
Aug 18, 2017 | Incubators, Medical Education, Professional Development
By: Teresa Chan, MD, MHPE

The ALiEM Team is happy to announce yet another eBook publication: the first volume in the *Education Theory Made Practical* series. This book was a labor of love written by the inaugural 2016-17 Faculty Incubator class. We are so very proud of all our Faculty Incubator alumni who made this happen. Their hard work has been compiled in this FREE, peer-reviewed eBook. We sincerely feel that it will be useful for all the educators out there, wrestling with the issue of integrating theory into practice.



www.aliem.com/education-theory-made-practical-volume-1

MedEdMentor



Theory Database / Filter & Explore / Educator's Portfolio Categories

Curriculum Development and Evaluation

This category involves the planning, implementation, and evaluation of educational curricula. It also includes revising existing curricula to meet new educational standards or needs.

12 Principles of Meaningful Learning

The 12 principles of meaningful learning emphasize the role of the brain, mind, and environment in shaping effective learning experiences.

14 Points for Motivation

Fourteen points for motivation theory emphasizes the importance of motivation in the learning process and provides a set of guidelines for educators to maximize student engagement.

3-P Model

The 3-P model highlights the interrelationship between presage, process, and product in the context of health professional education.

4-Component Instructional Design Model

MedEdMentor

Relevant Theories

Here are the top theories for your research phenomenon:

#1 Most Relevant Theory — 1 paper

Unlock top theory with Project Pass

Resilience Potentials — 1 paper

Serious Games Theory — 1 paper

Non-Technical Skills (NTS) — 1 paper

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**

lum

um

ith competing distractions

			scious attentional control.	
Cognitive load theory[12]	Sweller, Van Merrienboer, and Paas	Cognitive psychology	Careful attention to instructional design can be used to reduce the cognitive load in learners; heavy cognitive load can have a negative impact on task completion.	Use of low-fidelity simulation to focus on mastery of a specific task prior to practice in the clinical environment
Self-directed learning[13]	Knowles	Cognitive psychology	This process allows learners to take the initiative in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes.	Individualized learning plans Tracking of self-directed learning goals and attainment
Social cognitive theory[14]	Bandura	Cognitive psychology	People learn from one another by observing and imitating others' behavior: Pay attention. Retain what you observed. Reproduce the modeled behavior. Remain motivated to continue to imitate the behavior.	Shadowing program Tracking observed behaviors, incorporating them into practice, planning their use in the future
Self-regulated learning[15]	Zimmerman and Schunk	Cognitive psychology	Learners plan, monitor, and evaluate their own learning to achieve a goal.	Individualized learning plan Tracking self-directed learning goals and attainment
Reflective practice[16]	Schon	Cognitive psychology	*Reflection in action:* Experience and reflect on an experience during an event. Decide how to act. Act. *Reflection on action:* Reflect after an event. Think about what you might do differently. Use new perspectives to process feelings and actions.	Debriefings, reflective writing activities Assess for implementation of identified changes following debriefings
Self-determination theory[17]	Deci and Ryan	Cognitive psychology	People have 3 basic needs, which, if met, lead to enhanced self-motivation, performance, personal growth, and vitality. These needs are *competence*, *autonomy*, and *relatedness*.	Problem-based learning, small group learning activities Impact of hypothetical clinical scenario vs anchoring in shared experience
Experiential learning cycle[18]	Kolb	Cognitive psychology	Learning happens through a transforming experience via a 4-stage learning cycle: *concrete experience*, *reflective observation*, *abstract conceptualization*, and *active experimentation*.	Simulation-based curriculum Impact of a structured debrief followed by time for practice prior to further simulation
Situated learning—guided participation[19]	Vygotsky	Sociology	Instructors develop activities to promote more independent learning over time.	Workshops Learning following didactic vs interactive session

(continued on next page)

https://www.academicpedsjnl.net/article/S1876-2859(18)30514-X/abstract

Theoretical Frameworks for Studying the Impact of Escape Game Elements on Education

Framework	Why It Fits Escape Games in Education	How You Could Use It in a Study	Best For
Self-Determination Theory (SDT)	Escape games support autonomy (choice), competence (puzzles), and relatedness (teamwork), which drive intrinsic motivation.	Measure how escape-game elements satisfy SDT needs and how this predicts motivation, engagement, and learning.	Motivation, learner pers
Cognitive Load Theory (CLT)	Escape games add complexity, time limits, and problem solving—helping or hindering cognitive processing.	Identify which elements increase extraneous vs germane load; test cognitive load as a mediator between design and outcomes.	Cognitive p instructiona
Experiential Learning Theory (Kolb ELT)	Escape games provide hands-on, iterative problem solving aligned with the experiential learning	Map game activities to concrete experience → reflection → conceptualization →	Skills applic active learn

Kolb's Experiential Learning Theory

Kolb's Experiential Learning model involves four stages: concrete experiences, reflective observation, abstract conceptualization, & active experimentation. It suggests that individuals learn best when actively engaged in the process, rather than passively receiving information.

Written: February 2, 2022
Authors: Jennifer Fermin, MD; Tiffany Moadel, MD; Michael Cassara, DO
Editors: Geoffrey V. Stetson, MD

Noted Theory Originators

David A. Kolb

Summary

Experiential learning theory applies 4 steps to emphasize that learning is a process in which knowledge is continually shaped and evolved through experiences and is not simply static content

Described In

1. Kolb, D. (1984). *Experiential learning*. Prentice Hall.
2. Kolb, Alice, and David A. Kolb. *Kolb Learning Style Inventory: LSI Workbook*. HayGroup, 2013.

Applied In

1. Sheng, A. Y., Chu, A., Biancarelli, D., Drainoni, M. L., Sullivan, R., & Schneider, J. I. (2018). A Novel Web-Based Experiential Learning Platform for Medical Students (Learning Moment): Qualitative Study. *JMIR medical education*, *4*(2), e10657. https://doi.org/10.2196/10657
2. Tang Girdwood, S., Treasure, J., Zackoff, M., & Klein, M. (2019). Implementation, Evaluation, and Improvement of Pediatrics Residents-as-Teachers Elective Through Iterative Feedback. *Medical science educator*, *29*(2), 375–378. https://doi.org/10.1007/s40670-019-00715-3
3. DeCoux V. M. (1990). Kolb's Learning Style Inventory: a review of its applications in nursing research. *The Journal of nursing education*, *29*(5), 202–207. https://doi.org/10.3928/01484834-19900501-04
4. Schultz, K., McEwen, L., & Griffiths, J. (2016). Applying Kolb's Learning Cycle to Competency-Based Residency Education. Academic Medicine.

Medical Science Educator (2019) 29:375–378
https://doi.org/10.1007/s40670-019-00715-3

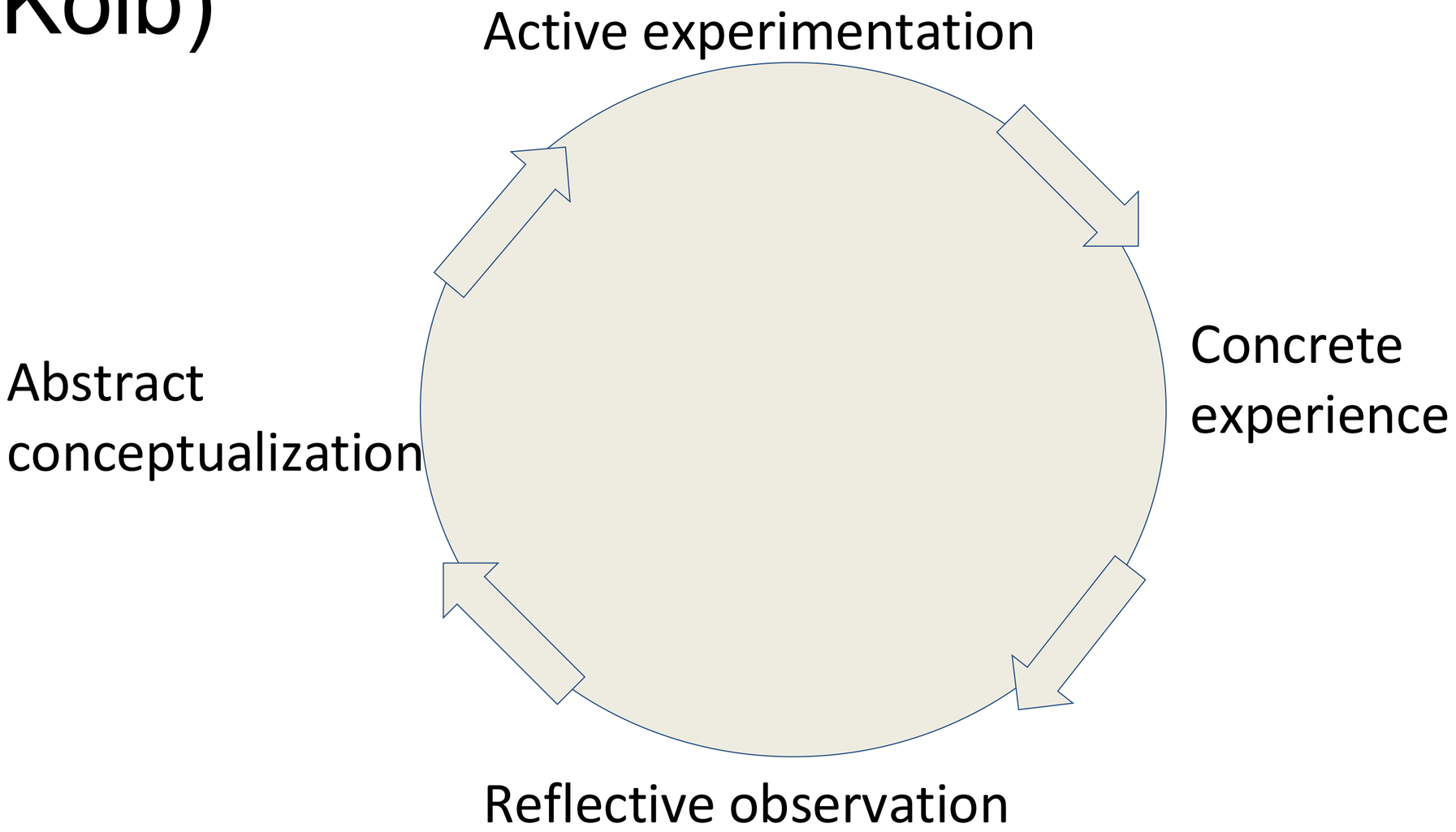
SHORT COMMUNICATION

Implementation, Evaluation, and Improvement of Pediatrics Residents-as-Teachers Elective Through Iterative Feedback

Sonya Tang Girdwood[1] · Jennifer Treasure[2] · Matthew Zackoff[3] · Melissa Klein[4]

- Residents as teacher curriculum
- Different teaching methods used
- Generally increased confidence post interventions

Residents as teachers (Kolb)



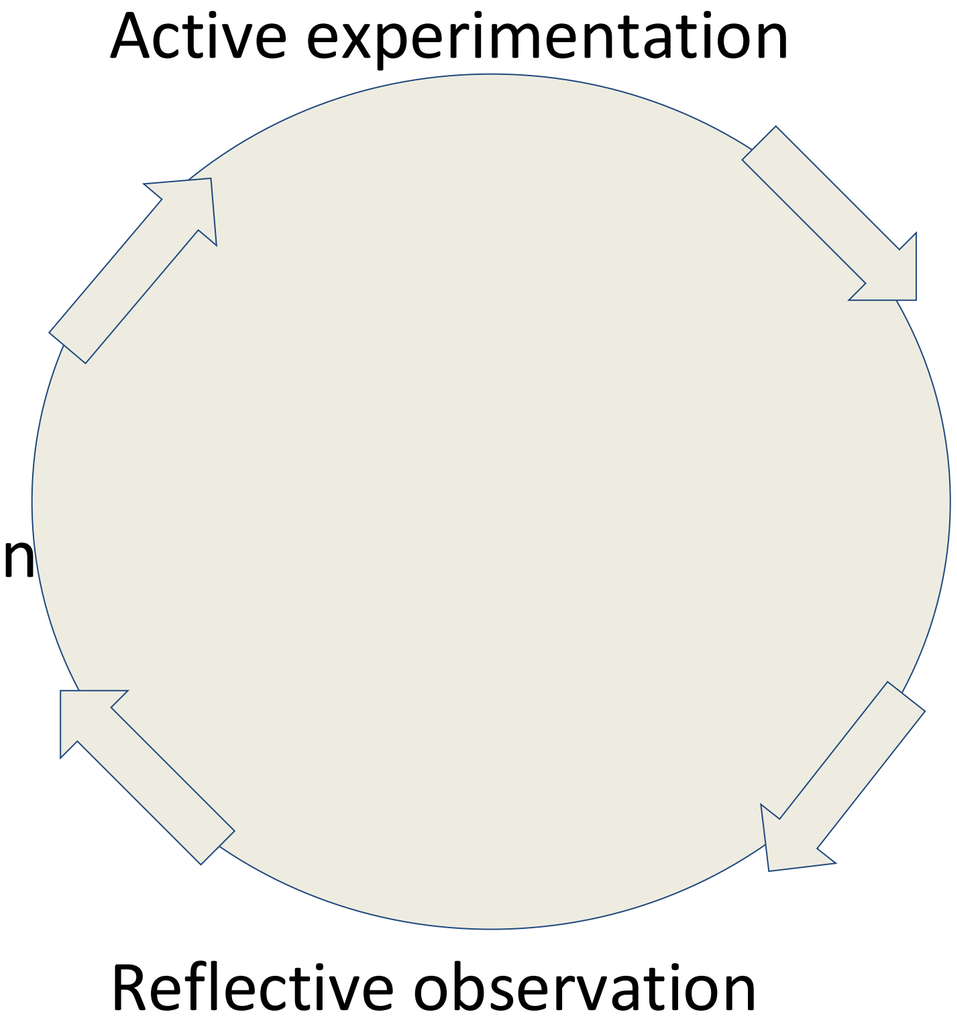
https://link.springer.com/article/10.1007/s40670-019-00715-3

Hypothesis

Curricular components with active experimentation would lead to increased self-assessed competence compared to components without active experimentation

Precept a learner

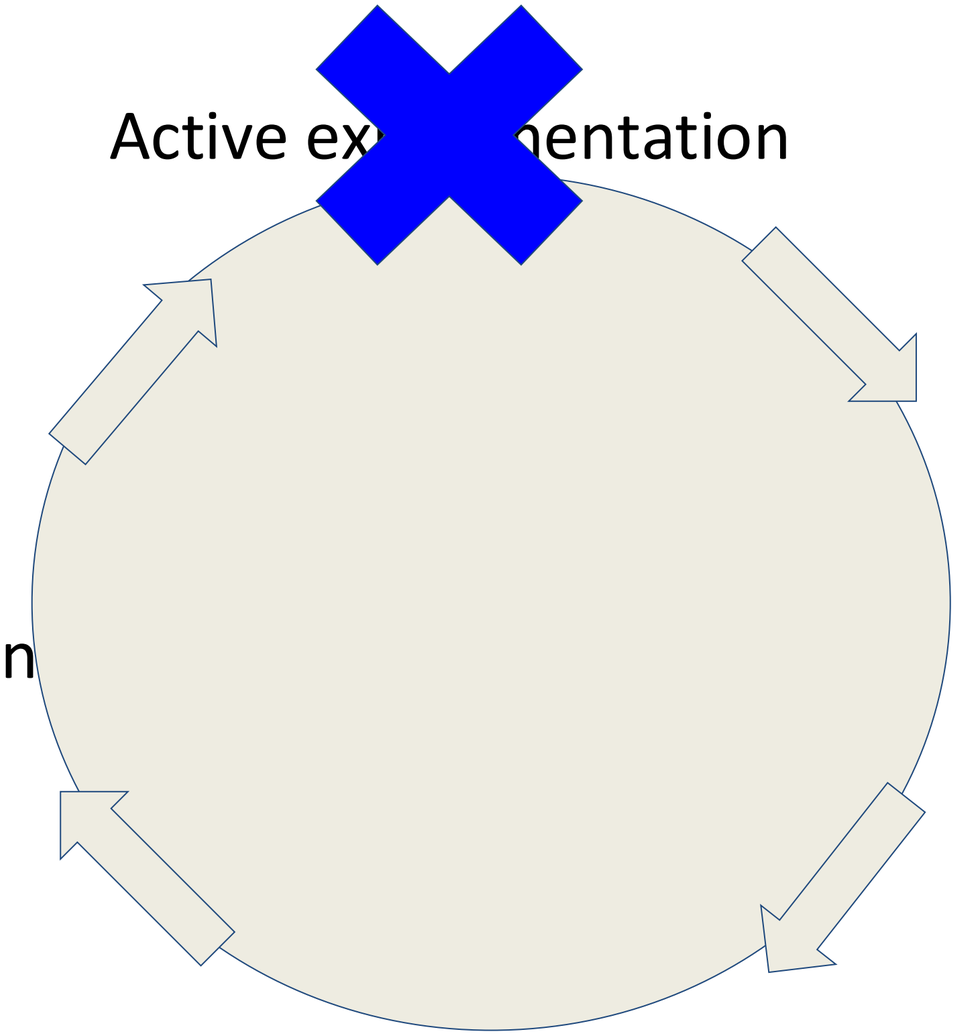
3. Precept students in primary care



1. Powerpoint

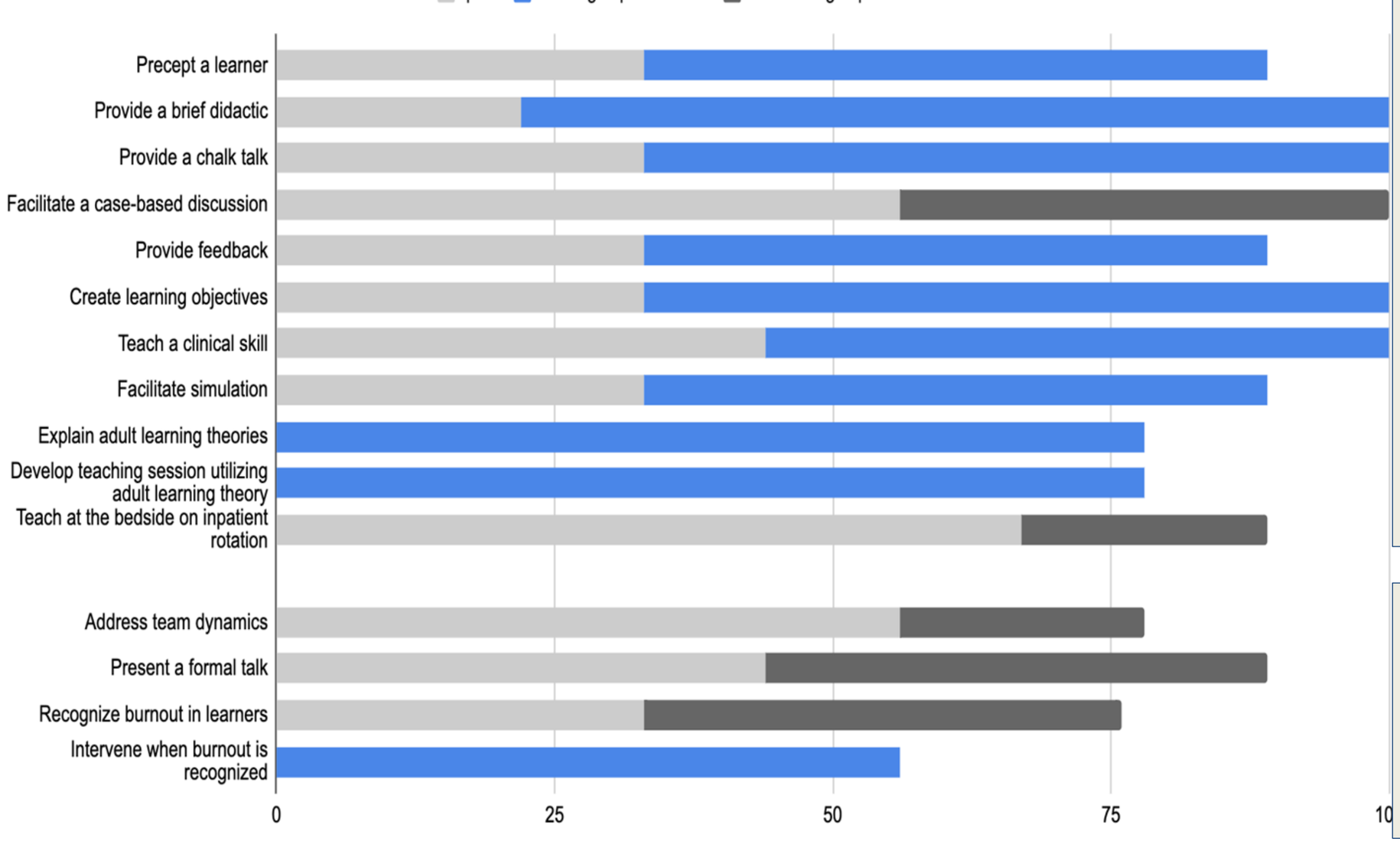
2. Faculty facilitated discussion session

Provide feedback



1. Powerpoint

2. Faculty facilitated discussion session



with active component

without active component

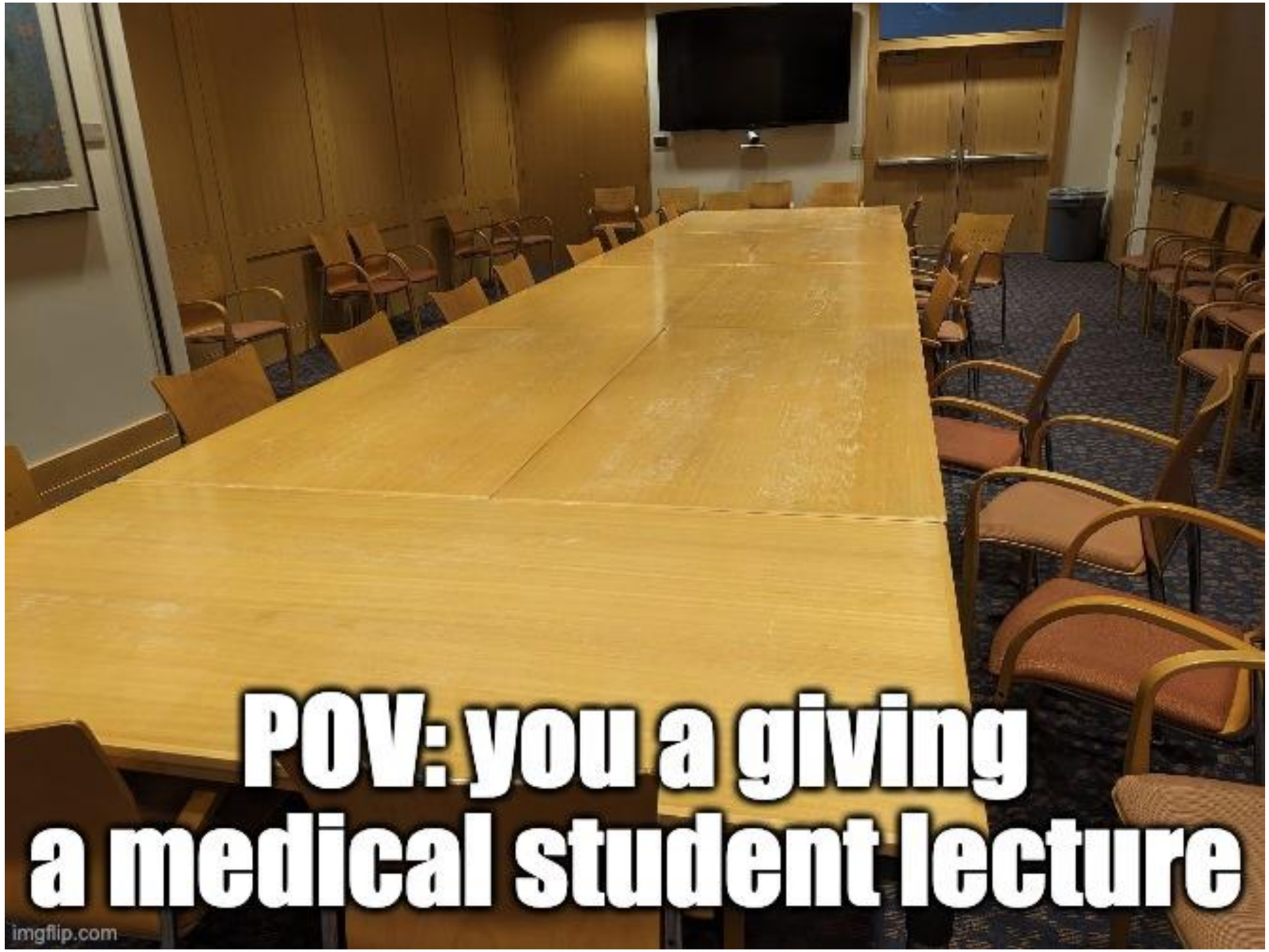
Statistically significant improvement

Not statistically significant improvement

for reference

- Theory: An abstract set of interrelated ideas and concepts that help to organize the complexities of our reality.
- Theoretical Framework: The application of that abstract mental model (i.e., theory) to a real-world problem. It is what happens when you "map" a theory onto a specific research question or phenomenon.
- Conceptual Framework: This is the rationale for applying a particular theory to a particular problem. It provides the argument, backed by literature review and methodology, to persuade an audience that the chosen approach is sound.

https://mededmentor.org/lessons/medical-education-research-beginners-guide/difference-between-theory-theoretical-conceptual-frameworks/


POV: you a giving
a medical student lecture
imgflip.com

Kern’s six steps

- problem identification
- needs assessment of the learners
- educational goals and objectives
- instructional strategies
- implementation
- evaluation and feedback.

Failure to assess the specific needs of the community doctors

Use of passive instructional strategies during the CPD activities.

https://asmepublications.onlinelibrary.wiley.com/doi/epdf/10.1111/j.1365-2923.2009.03295.x

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Identify an idea or problem	
Perform a literature review	
Generate a **specific** research question	-FINER

DOI: 10.1097/ACM.0000000000001413

Is this a research question or a research goal?

“How can support services for minority students entering college be improved?”

https://collegepublishing.sagepub.com/products/qualitative-research-design-3-234502

What data could I collect and what conclusions might I draw from these, that would help accomplish my goal?

“How do staff and administrators in the program believe that support services for minority students entering college can be improved?”

Feasible
Interesting and Important
Novel
Ethical
Relevant

Feasible

Is this question answerable with the resources you have available to you?

What question could I ask from the data I already have?

There are natural experiments everywhere for those with the eyes to see

-William Ostler (maybe)

Interesting and Important

Is this question interesting to you as the investigator as well as to the general health professions education community?

What would be the reasons to cite the results of this paper?

What would you write in next steps?


If you are not going to cite this then who?

Does this fit into a larger program of research?

Novel

Does the question add to the current body of knowledge?

Ethical

Can you answer this question without putting anyone at risk

Relevant

Does the answer to your question matter not only at your institution but also at others

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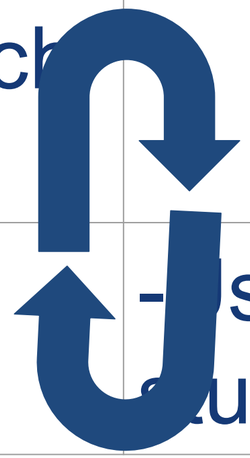
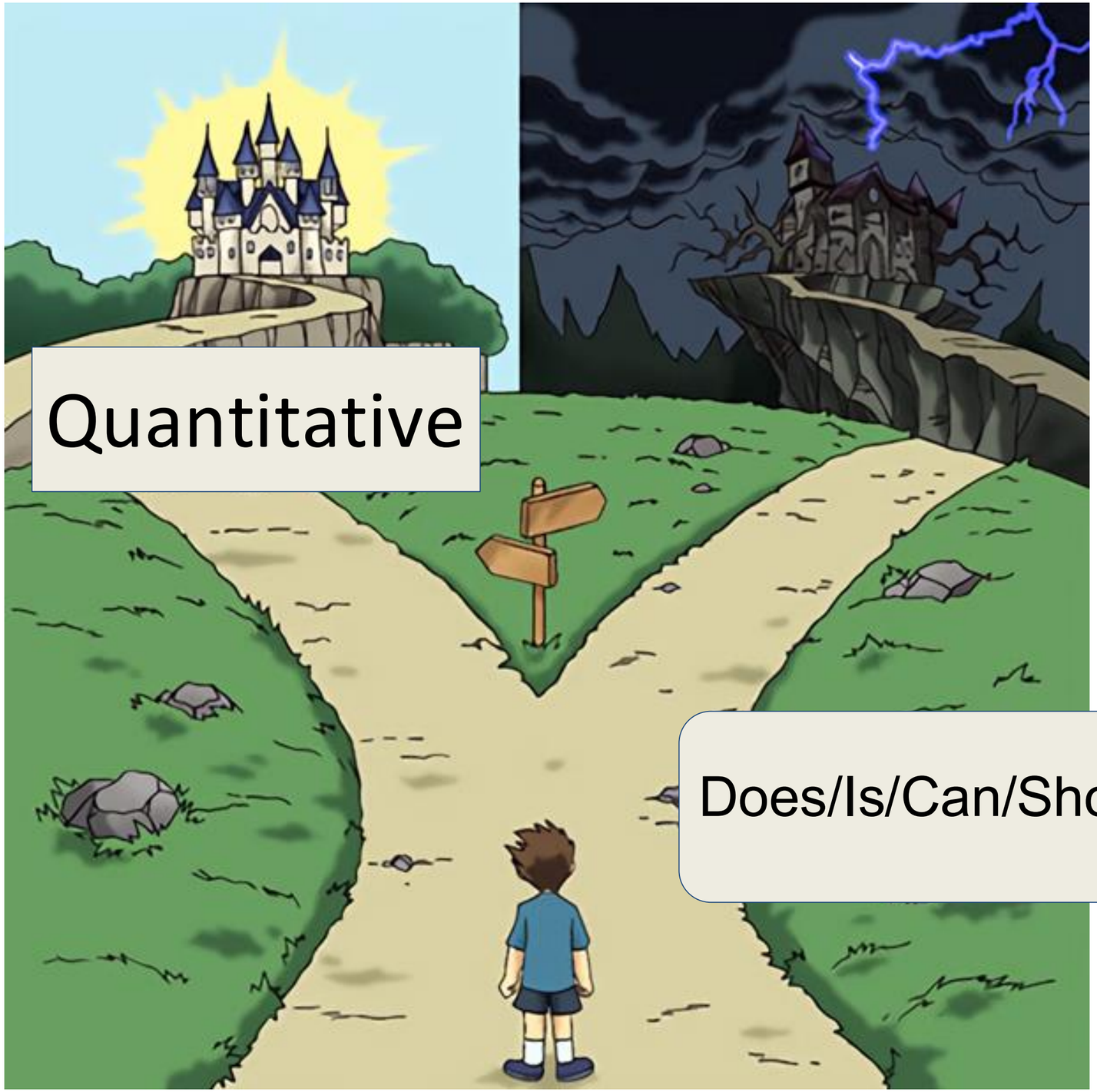
Identify an idea or problem	
Perform a literature review	
Generate a **specific** research question	
Develop a study design	- Use common educational study designs

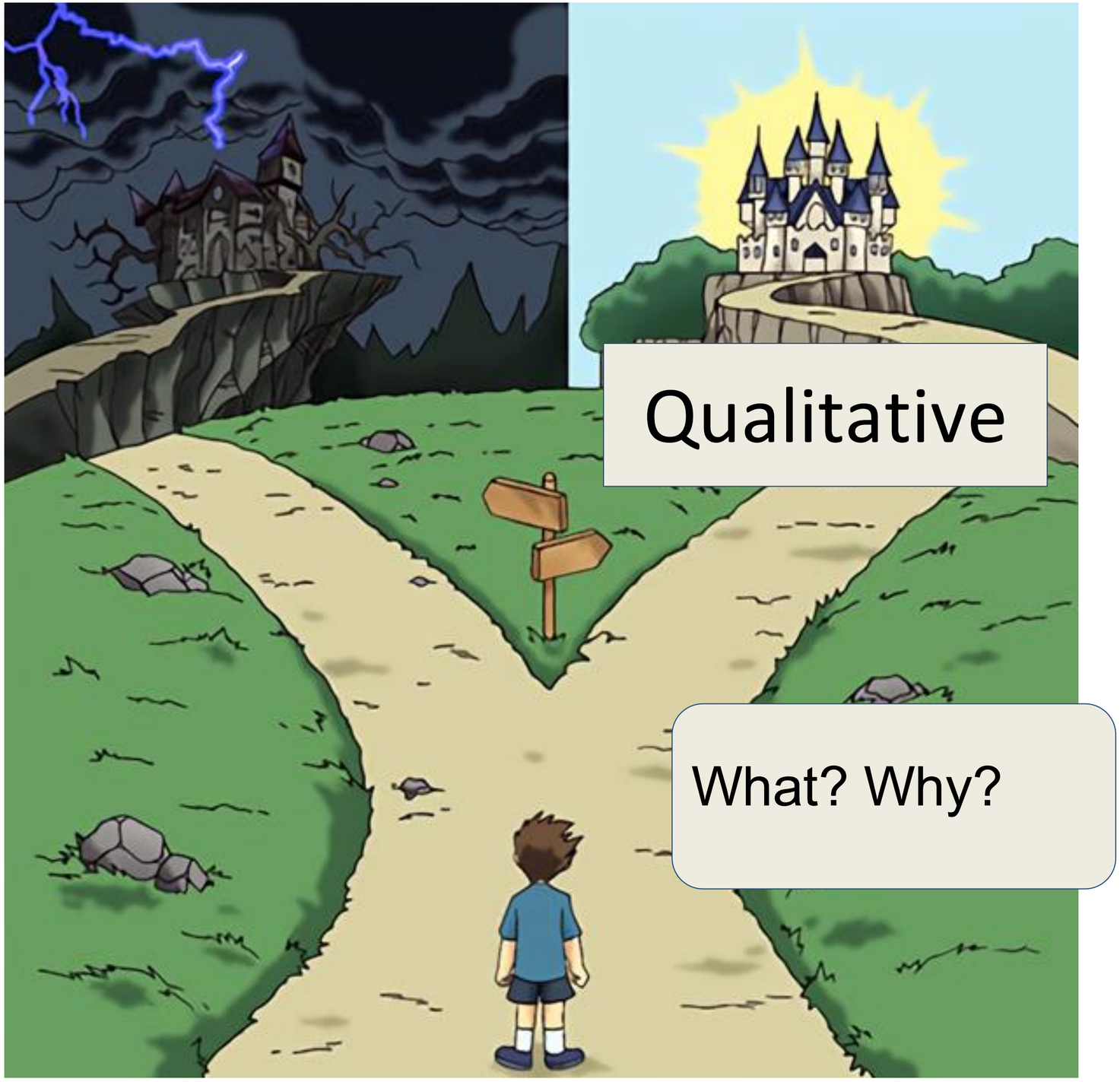


DOI: 10.1097/ACM.0000000000001413

Interrogative question or verb question?

DOI 10.1007/s12630-011-9635-y


Quantitative
Does/Is/Can/Should?


Qualitative
What? Why?


Mixed
Quantitative
Qualitative
How?

Does self-debriefing in crisis resource management improve performance among anesthesiology residents?

Randomized Controlled Trial > Crit Care Med. 2011 Jun;39(6):1377-81.
doi: 10.1097/CCM.0b013e31820eb8be.

Looking in the mirror: self-debriefing versus instructor debriefing for simulated crises

10.1097/CCM.0b013e31820eb8be

What are ICU healthcare professionals' perceptions regarding the way acute medical crises affect team interactions?

J Interprof Care. 2009 May;23(3):273-85. doi: 10.1080/13561820802697818.

Interprofessional intensive care unit team interactions and medical crises: a qualitative study

Can learning style predict student satisfaction with different instruction methods and forecast academic achievement in medical education?

› Adv Physiol Educ. 2010 Dec;34(4):192-6. doi: 10.1152/advan.00075.2010.

Can learning style predict student satisfaction with different instruction methods and academic achievement in medical education?

What questions have similar methods asked?

Jane
Journal/Author Name Estimator

Insert your title and/or abstract here: (or, click here to search using keywords)

PurposeIntroduction: Serious games are increasingly used in medi
actively engage learners. Analog serious games are a non-digital
serious games with specific purposes that go beyond entertainmen
design, creation, and affordability makes the analog format appr
educators. This scoping review intends to scan and describe the l
literature pertaining to analog serious games over the last ten y

Methods: We conducted a scoping review following the Arksey and O'M
framework, searching three databases (Ovid MEDLINE, Embase, and CINAHL
studies of analog serious games designed for physician-track learners publis
from January 2013 to December 2022. designed or used to change their knowledge,
skills, and attitudes were included. The authorship team met to calibrate, and
then used two reviewers to screen the titles and abstracts, with discrepancies
resolved by a third reviewer. After a calibration exercise, six reviewers
independently completed extraction, with a request for a second look when cases
were uncertain. The extracted data were analyzed for relevant themes and trends
using simple descriptive statistics and then mapped to provide an overview of
the field over the past decade.

Results: The search retrieved 3401 records. After excluding 773 duplicates, 2628

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Similarity	Citation
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	Landry-Wegener BA, Kaniecki T, Gips J, Lebo R, Levine RB **Drama Training as a Tool to Teach Medical Trainees Communication Skills: A Scoping Review.** Academic medicine : journal of the Association of American Medical Colleges. 2023
	Moniz T, Golafshani M, Gaspar CM, Adams NE, Haidet P, Sukhera J, Volpe RL, de Boer C, Lingard L **How Are the Arts and Humanities Used in Medical Education? Results of a Scoping Review.** Academic medicine : journal of the Association of American Medical Colleges. 2021
	Muzyk A, Smothers ZPW, Andolsek KM, Bradner M, Bratberg JP, Clark SA, Collins K, Greskovic GA, Gruppen L, MacEachern M, Ramsey SE, Ruiz Veve J, Tetrault JM **Interprofessional Substance Use Disorder Education in Health Professions Education Programs: A Scoping Review.** Academic medicine : journal of the Association of American Medical Colleges. 2020

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Description, Clarification, or Justification?

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Description, justification and clarification: a framework for classifying the purposes of research in medical education

David A Cook, Georges Bordage, Henk G Schmidt

First published: 08 January 2008 | https://doi.org/10.1111/j.1365-2923.2007.02974.x |

VIEW METRICS

Description (What was done?)

Describes what was done or presents a new conceptual model. There is no comparison group. May be a description without assessment of outcomes, or a ‘single-shot case study’ (single-group, post-test only experiment)

Justification (Did it work?)

Makes comparison with another intervention with intent of showing that 1 intervention is better than (or as good as) another. Any experimental study design with a control (including a single-group study with pre- and post-intervention assessment) can do this.

Generally lacks a conceptual framework or model that can be confirmed or refuted based on results of the study

Clarification (How or Why did it work?)

Clarifies the processes that underlie observed effects. Often a controlled experiment, but could also use a case–control, cohort or cross-sectional research design. Much qualitative research also falls into this category.

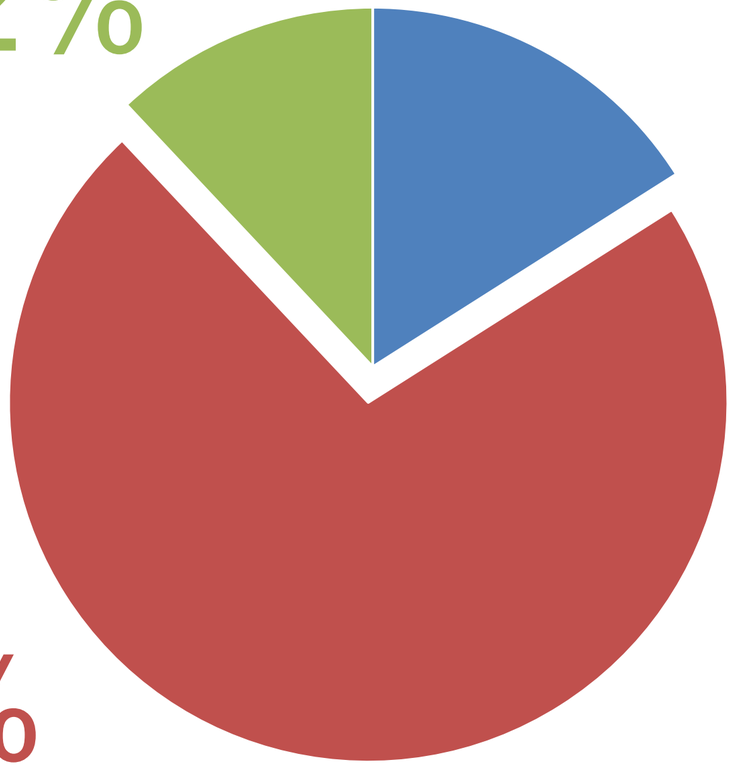
Its hallmark is the presence of a conceptual framework that can be confirmed or refuted by the results of the study

https://asmepublications.onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2007.02974.x

Experimental studies published in MedEd journals in 2003-04

Description 16%

Clarification 12%



Justification 72%

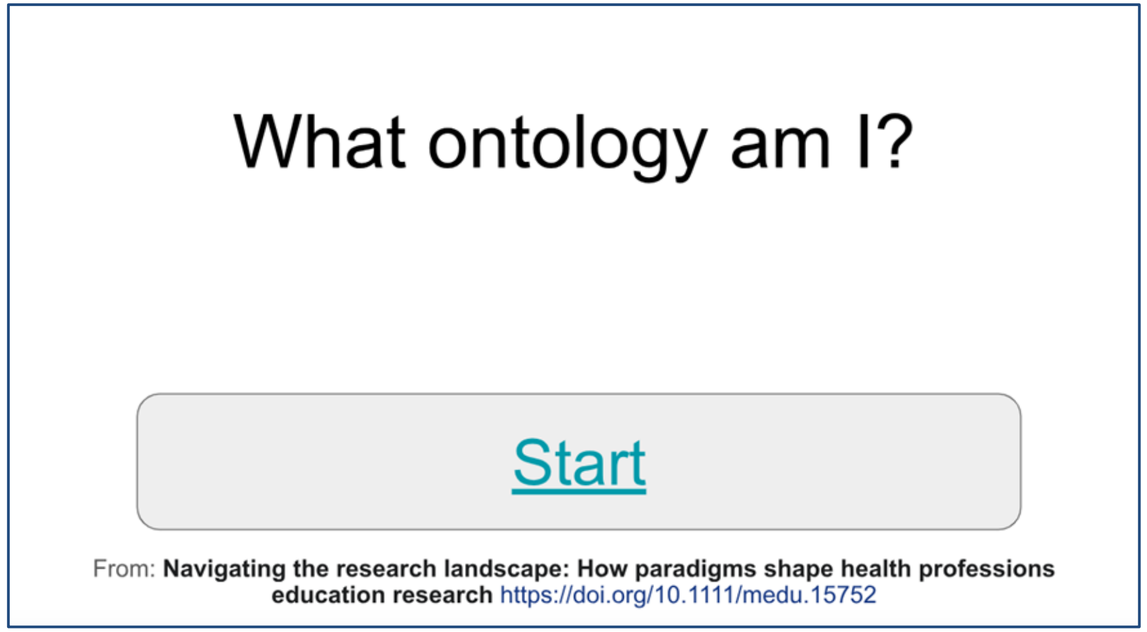
https://asmepublications.onlinelibrary.wiley.com/doi/10.1111/j.1365-2923.2007.02974.x

Homework!

[] Go to your favorite journals web page and sign up for TOC alerts in your email e.g. Medical Education

[] Play What Ontology Am I?

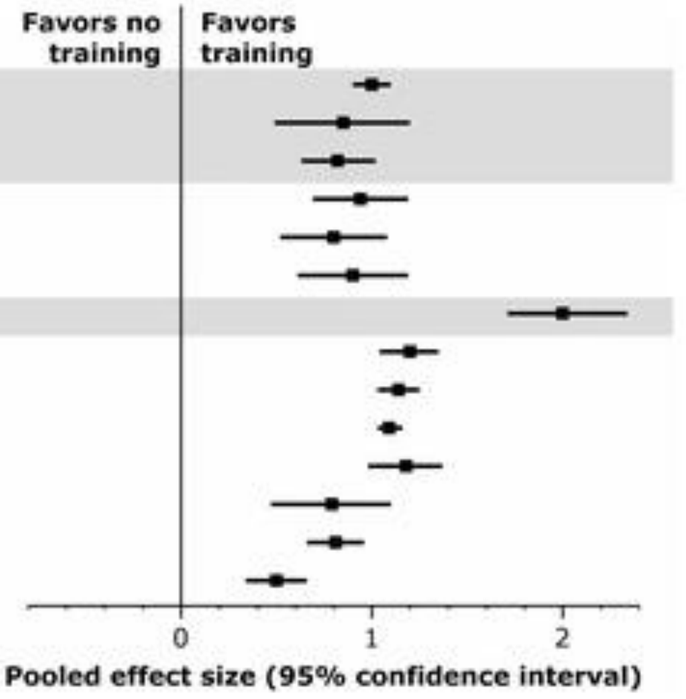
[] Subscribe and give the Academic Pediatrics Podcast a five star review on apple podcasts



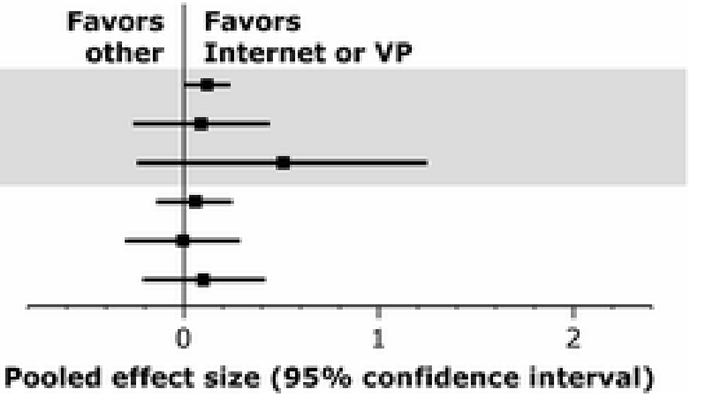
Compared to what?

Fig. 1

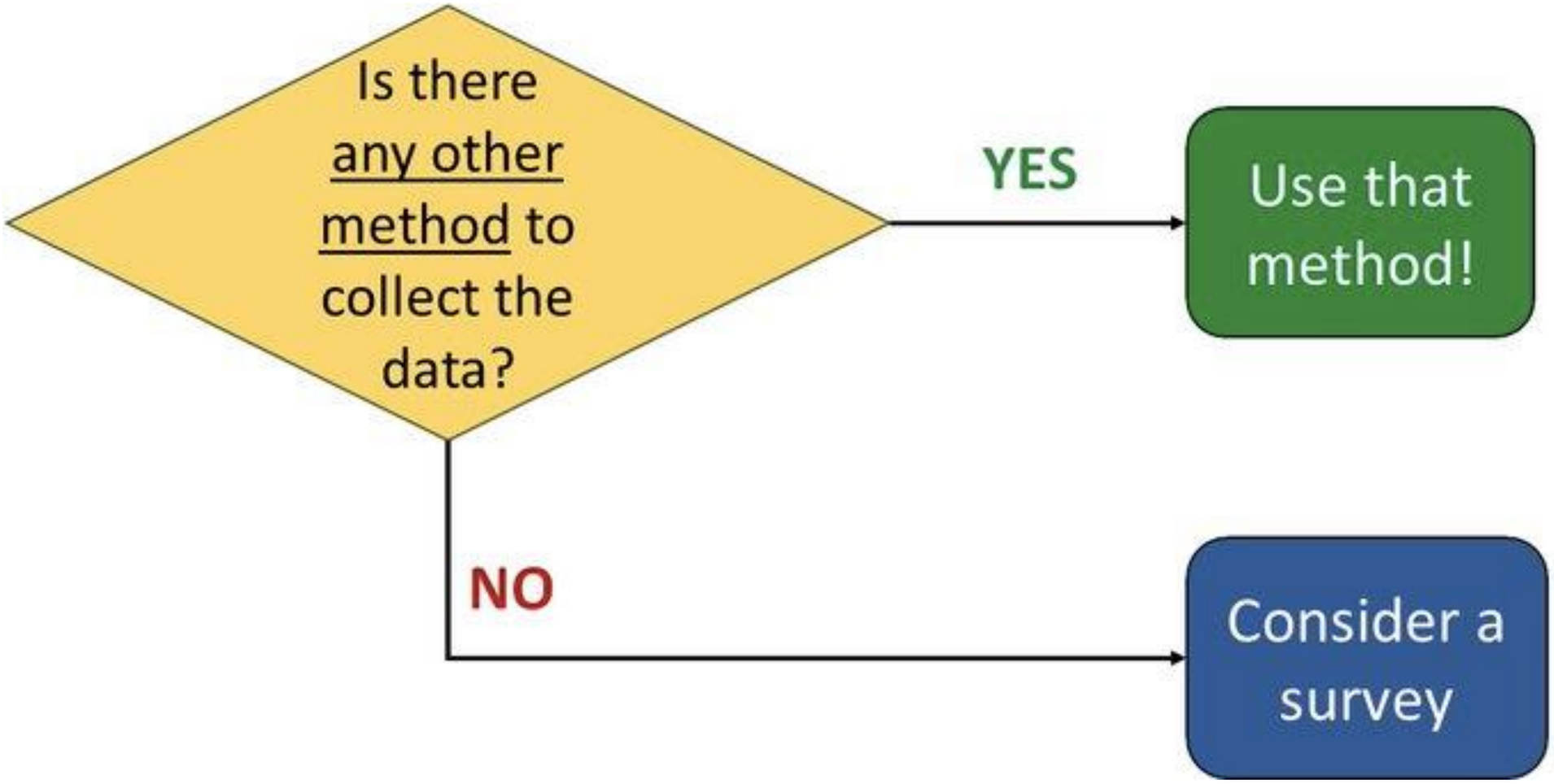
Publication	Outcome	No. of studies
Internet-based instruction (Cook)	Knowledge	126
Internet-based instruction (Cook)	Skill	16
Internet-based instruction (Cook)	Behaviors	32
Virtual patients (Cook)	Knowledge	11
Virtual patients (Cook)	clinical reasoning	5
Virtual patients (Cook)	Other skills	9
Simulation-based instruction (McGaghie)	Skill	14
Simulation-based instruction (Cook)	Knowledge	118
Simulation-based instruction (Cook)	Time skills	210
Simulation-based instruction (Cook)	Process skills	426
Simulation-based instruction (Cook)	Product skills	54
Simulation-based instruction (Cook)	Time behaviors	20
Simulation-based instruction (Cook)	Other behaviors	50
Simulation-based instruction (Cook)	Patient effects	32



Publication	Outcome	No. of studies
Internet-based instruction (Cook)	Knowledge	63
Internet-based instruction (Cook)	Skill	12
Internet-based instruction (Cook)	Behaviors	32
Virtual patients (Cook)	Knowledge	5
Virtual patients (Cook)	clinical reasoning	10
Virtual patients (Cook)	Other skills	11



Should I do a survey?



When is this due?

Systematic review, clinical trial you are pre-registering your question

Qualitative study you might be working from provisional questions refined in the process to develop a hypothesis.

Quantitative:

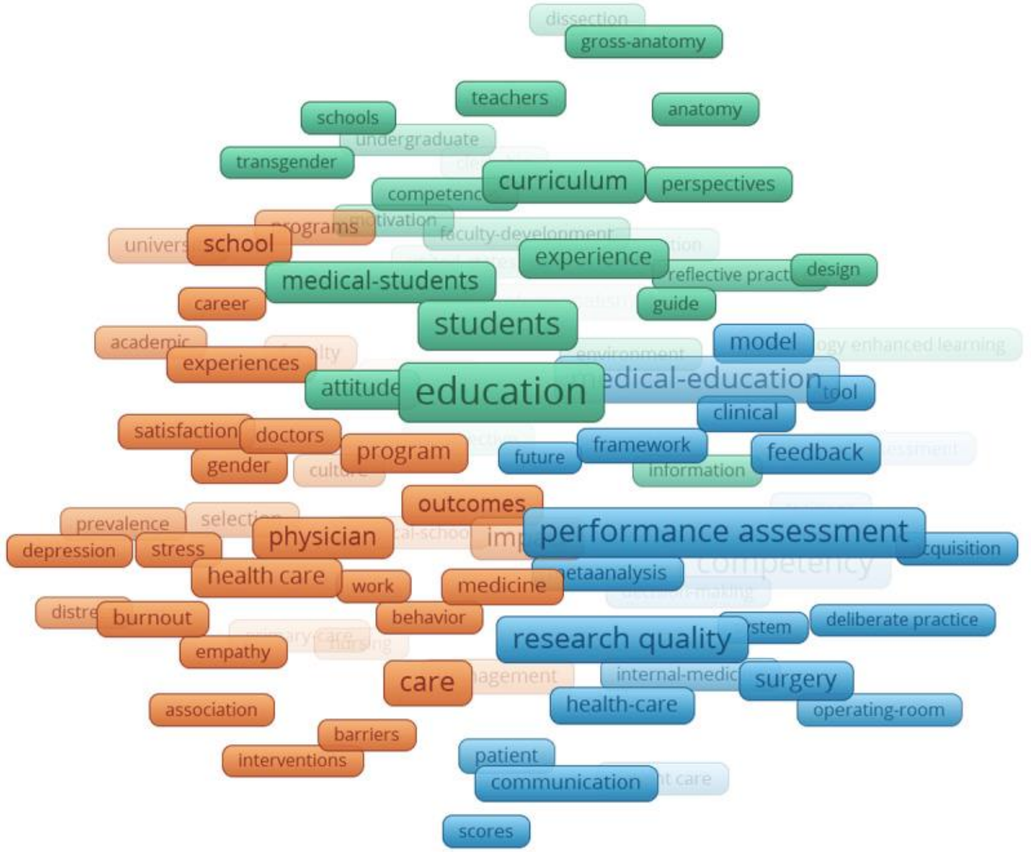
- Survey
- Post course design
- Before and after studies
- Controlled before and after
- Randomized controlled
- Longitudinal

Qualitative:

- Ethnography
- Phenomenology
- Grounded theory
- Case studies
- Action research

Are you going to publish this? Where?

The first was teaching and learning (green), which consisted of indicating words such as: students, model, faculty development, instruction. The second cluster was the quantitative or positivist (blue), which consisted of words such as: checklist, costs, performance assessment, and competency. Finally, there was also a psychosocial cluster (red), which consisted of words such as: attitude, behaviour, stress, and depression.



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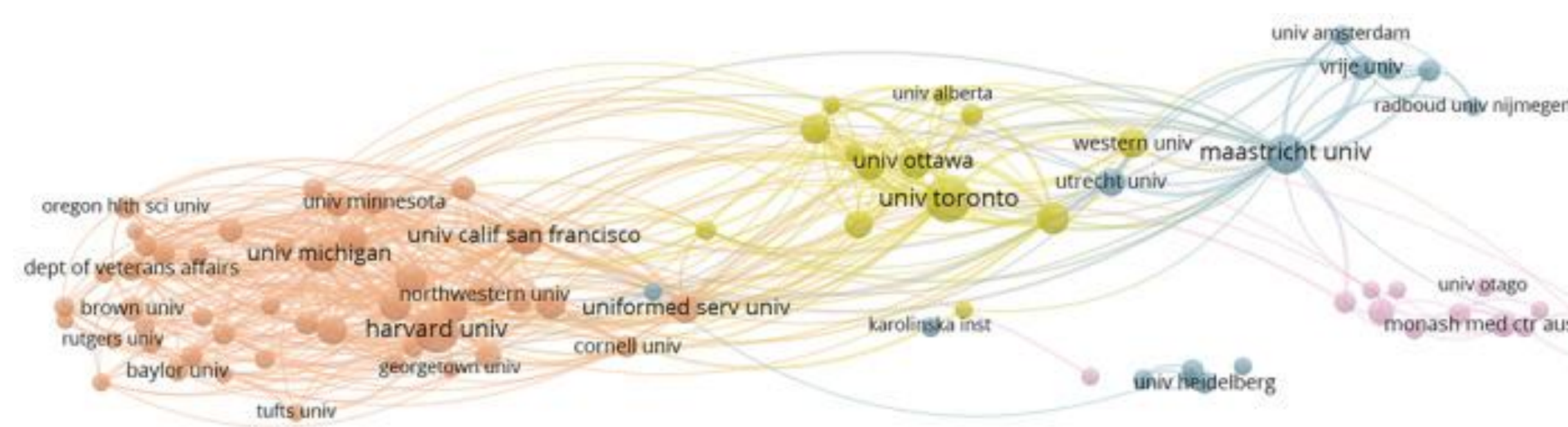
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