The Next Great Idea: Turning Your Educational Passion into Scholarship

Michelle Daniel, MD, MHPE

Vice Dean for Medical Education

Professor of Clinical Emergency Medicine

University of California San Diego School of Medicine

Clinical Skills
Preceptor

↓

Clinical Skills
Small Group Instructor

↓

Clinical Skills
Course Director

↓

Assistant Dean for
Curriculum

↓

Vice Dean for Medical
Education

Maastricht University

Aims

- To inspire you to produce educational scholarship
- To give you the tools to succeed

Objectives

- Describe 3 catalysts for success in publishing
- Review tools & resources to convert your ideas into meaningful scholarly outputs

Feeling alone on an island?

3 Catalysts

- Mentors
- Teams
- Advanced Training in Education


A mentor to encourage

Scholarship Pipeline*

Timeline	Scholarship	To Do
Ideas entering the pipeline	What projects do you have in mind?	Brainstorming; Literature Review
Development (design → IRB)	What projects are being developed?	Gather team; assign roles
Data Gathering	What projects are in the data gathering phase?	Email survey reminders to participants; conduct interviews of focus groups
Outcomes Analysis	What projects have outcomes to analyze?	Consult statistician; thematic analysis
Presentations	What projects are ready for presentation?	Abstract deadlines: AAMC, GEA, AMA, AMEE, IAMSE
Writing	What projects are in the writing phase?	Set deadlines
Submitted & Waiting	What projects are submitted and where?	Wait
Rewrite or Resubmit	What papers are rejected and need rewrite?	Resubmit revisions quickly
Accepted	Add to your CV…	Celebrate!

*** Adapted from Santen SA, Peterson W, Wolff M. Turning your educational work into scholarship. *AEM Educ Train.* 2018**

DR-ED

listserv@list.msu.edu

Perspective

Why Not Wait? Eight Institutions Share Their Experiences Moving United States Medical Licensing Examination Step 1 After Core Clinical Clerkships

Michelle Daniel, MD, MHPE, Amy Fleming, MD, MHPE, Colleen O'Conner Grochowski, PhD, Vicky Harnik, PhD, Sibel Klimstra, MD, Gail Morrison, MD, Arnyce Pock, MD, Michael L. Schwartz, PhD, and Sally Santen, MD, PhD

Research Report

Moving the United States Medi ensing Examination Step 1 Afte ips: An Outcomes An

Daniel Jurich, Ph

Perspective

Identifying and Supporting Students to Prevent USMLE Step 1 Failures When Testing Follows Clerkships: Insights From 9 Schools

Aubrie Swan Sein, PhD, EdM, Michelle Daniel, MD, MHPE, Amy Fleming, MD, MHPE, Gail Morrison, MD, Jennifer G. Christner, MD, Karin Esposito, MD, PhD, Arnyce R. Pock, MD, Colleen O. Grochowski, PhD, John L. Dalrymple, MD, and Sally A. Santen, MD, PhD

Research Report

edical Clerkships ce

ng, MD, MHPE,

Strategies From 11 U.S. Medical Schools for Integrating Basic Science Into Core Clerkships

Michelle Daniel, MD, MHPE, Gail Morrison, MD, Karen E. Hauer, MD, PhD, Arnyce Pock, MD, MHPE, Christine Seibert, MD, Jonathan Amiel, MD, Molly Poag, MD, Nadia Ismail, MD, MPH, MEd, John L. Dalrymple, MD, Karin Esposito, MD, PhD, Cathleen Pettepher, PhD, and Sally A. Santen, MD, PhD

Abstract

Calls for curricular reform in medical schools and enhanced integration of basic and clinical science have resulted in a shift toward preclerkship curricula that enhance the clinical relevance of foundational science instruction and provide students with earlier immersion in the clinical environment. These reforms have resulted in shortened preclerkship curricula, yet the promise of integrated basic science education into clerkships has not been sufficiently realized because of barriers such

instructional and assessment strategies to better integrate basic science into the clinical curriculum.

In this article, faculty and deans from 11 U.S. medical schools discuss the strategies they implemented and the lessons they learned to provide guidance to other schools seeking to enhance basic science education during clerkships. The strategies include program-level interventions (e.g., longitudinal sessions dedicated to basic science

Medical Science Educator
https://doi.org/10.1007/s40670-021-01237-7

COMMENTARY

The Optimal Timing of Step 1 in Medical Education Following the Transition to Pass/Fail: A Unique Perspective from Post-clerkship Step 1 Schools

Michelle Daniel[1,2] · Karen E. Hauer[3] · Latha Chandran[4,5] · Arnyce Pock[6] · Gail Morrison[7] · Sally A. Santen[8]

Accepted: 3 February 2021
© International Association of Medical Science Educators 2021

Medical Science Educator (2021) 31:911–916
https://doi.org/10.1007/s40670-021-01255-5

COMMENTARY

Educational and Practical Implications of Step 1 Timing in the Context of COVID-19

Aubrie Swan Sein[1] · Michelle Daniel[2,3] · Karen E. Hauer[4] · Sally A. Santen[5,6]

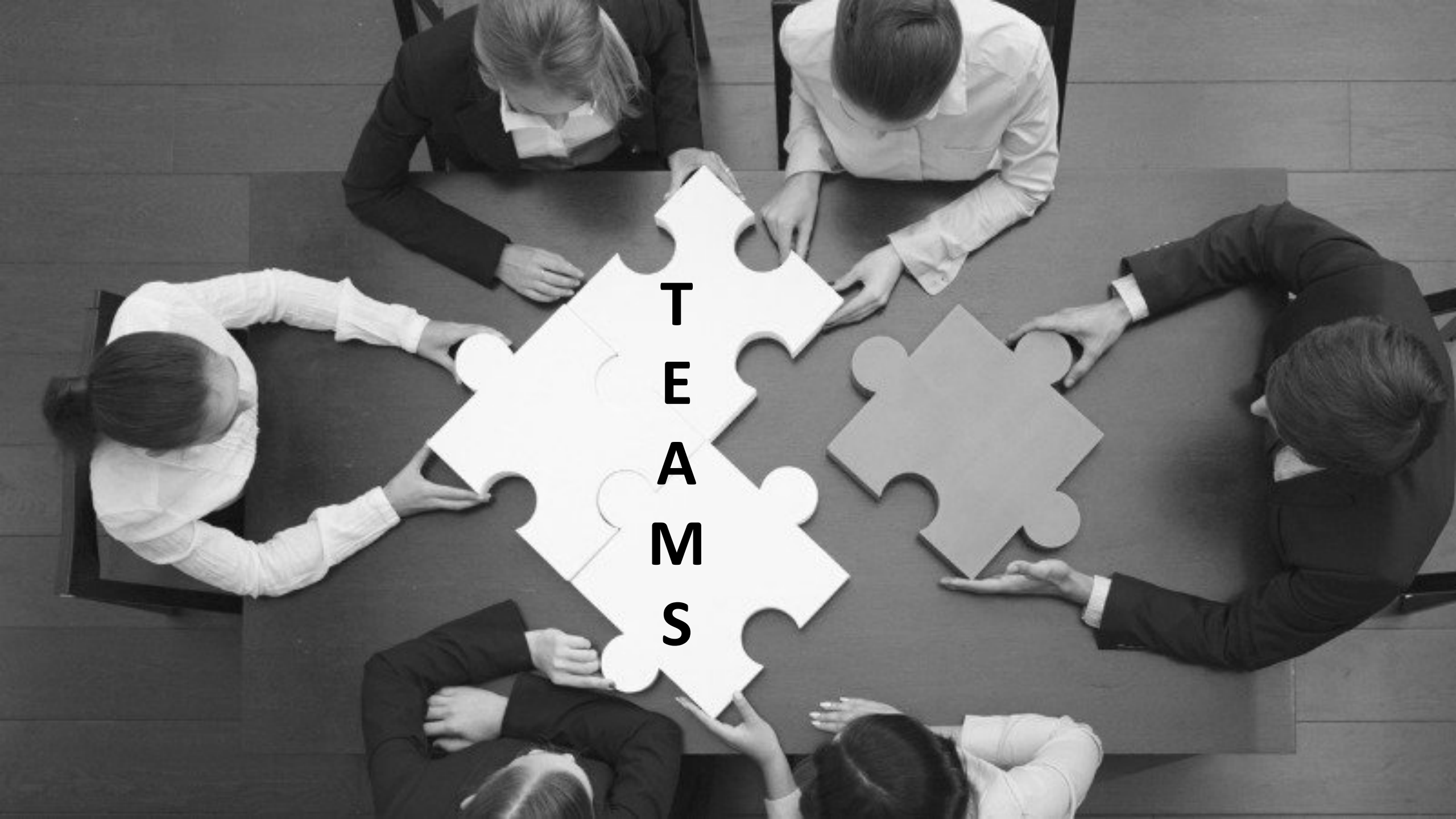
Routledge
Taylor & Francis Group

Check for updates

of Michigan
ine, San Francisco,
Madison, Wisconsin, USA;
York, New York, USA; [f]Department of
USA; [g]Department of Medicine, Harvard Medical
University School of Medicine, Nashville, Tennessee, USA;
hool of Medicine, Richmond, Virginia, USA

are considering the optimal timing of Step 1 of the United States Examination (USMLE). Two primary reasons for moving Step 1 after the clerkships are to promote deeper, more integrated basic science learning in clinical contexts and to better prepare students for the increasingly clinical focus of Step 1. Positioning Step 1 after the core clerkships leverages a major national assessment to drive

KEYWORDS
medical students; assessment; licensure; USMLE


TEAMS

Guidelines for Collaborative Research*

- Set clear goals for the study and collaboratively design the work
- Set clear expectations for contributions; agreeing on leadership & authorship roles
- Consider local contexts; Navigate IRB across institutions
- Set regular communication times & leverage technology for remote work (e.g., Zoom, Google Docs.)
- Maintain momentum with clear deadlines & deliverables

***adapted from the Society of Directors of Research in Medical Education. Guidelines for Multi-Institutional / Collaborative Research. *Acad Med.* 2014**

Teams as a tool for mentoring

MEDICAL TEACHER
https://doi.org/10.1080/0142159X.2020.1807484

BEME GUIDE

Developments in medical education in response to the COVID-19 pandemic: A rapid BEME systematic review: BEME Guide No. 63

Morris Gordon[a,b], Madalena Patricio[c], Laura Horne[a], Alexandra Muston[a], Sebastian R Alston[d], Mohan Pammi[e], Satid Thammasitboon[e], Sophie Park[f], Teresa Pawlikowska[g], Eliot L Rees[f,h], Andrea Jane Doyle[g] and Michelle Daniel[i]

[a]Blackpool Victoria Hospital, Blackpool, UK; [b]School of Medicine, University of Central Lancashire, Preston, UK; [c]Faculty of Medicine, University of Lisbon, Lisboa, Portugal; [d]Alabama College of Osteopathic Medicine, Dothan, AL, USA; [e]Texas Children's Hospital and Baylor College of Medicine, Houston, TX, USA; [f]UCL Medical School, University College London, London, UK; [g]RCSI University of Medicine and Health Sciences, Dublin, Ireland; [h]School of Medicine, Keele University, UK; [i]Medical School, University of Michigan, USA

ABSTRACT

Background: The novel coronavirus disease (COVID-19) was declared a pandemic in March 2020. This rapid systematic review synthesised published reports of medical educational developments in response to the pandemic, considering descriptions of interventions, evaluation data and lessons learned.

Methods: The authors systematically searched four online databases and hand searched MedEdPublish up to 24 May 2020. Two authors independently screened titles, abstracts and full texts, performed data extraction and assessed risk of bias for included articles. Discrepancies were resolved by a third author. A descriptive synthesis and outcomes were reported.

Results: Forty-nine articles were included. The majority were from North America, Asia and Europe. Sixteen studies described Kirkpatrick's outcomes, with one study describing levels 1–3. A few papers were of exceptional quality, though the risk of bias framework generally revealed capricious reporting of underpinning theory, resources, setting, educational methods, and content. Key developments were pivoting educational delivery from classroom-based learning to virtual spaces, replacing clinical placement based learning with alternate approaches, and supporting direct patient contact with mitigated risk. Training for treating patients with COVID-19, service reconfiguration, assessment, well-being, faculty development, and admissions were all addressed, with the latter categories receiving the least attention.

Conclusions: This review highlights several areas of educational response in the immediate aftermath of the COVID-19 pandemic and identifies a few articles of exceptional quality that can serve as models for future developments and educational reporting. There was often a lack of practical detail to support the educational community in enactment of novel interventions, as well as limited evaluation data. However, the range of options deployed offers much guidance for the medical education community moving forward and there was an indication that outcome data and greater detail will be reported in the future.

KEYWORDS
Best evidence medical education; undergraduate; postgraduate; medicine; methods

MEDICAL TEACHER
https://doi.org/10.1080/0142159X.2020.1864310

BEME GUIDE

An update on developments in medical education in response to the COVID-19 pandemic: A BEME scoping review: BEME Guide No. 64

Michelle Daniel[a], Morris Gordon[b,c], Madalena Patricio[d], Ahmad Hider[e], Cameron Pawlik[e], Rhea Bhagdev[b], Shoaib Ahmad[b], Sebastian Alston[f], Sophie Park[a], Teresa Pawlikowska[h], Eliot Rees[g,i], Andrea Jane Doyle[h], Mohan Pammi[j], Satid Thammasitboon[j,k], Mary Haas[e], William Peterson[e], Madelyn Lew[e], Deena Khamees[e], Maxwell Spadafore[e], Nicola Clarke[g] and Jennifer Stojan[e]

[a]Emergency Medicine, School of Medicine, University of California San Diego, La Jolla, CA, USA; [b]Blackpool Victoria Hospital, Blackpool, UK; [c]School of Medicine, University of Central Lancashire, Lancashire, UK; [d]Faculty of Medicine, University of Lisbon, Lisbon, Portugal; [e]University of Michigan Medical School, Ann Arbor, MI, USA; [f]Division of Clinical Sciences, Alabama College of Osteopathic Medicine, Dothan, AL, USA; [g]Primary Care and Population Health, University College London Medical School, London, UK; [h]Health Professions Education Centre (HPEC), Royal College of Surgeons University of Medicine and Health Sciences, Dublin, Ireland; [i]School of Medicine, Keele University, Keele, UK; [j]Department of Pediatrics, Texas Children's Hospital, Houston, TX, USA; [k]Baylor College of Medicine, Houston, TX, USA

ABSTRACT

Background: COVID-19 has fundamentally altered how education is delivered. Gordon et al. previously conducted a review of medical education developments in response to COVID-19; however, the field has rapidly evolved in the ensuing months. This scoping review aims to map the extent, range and nature of subsequent developments, summarizing the expanding evidence base and identifying areas for future research.

Methods: The authors followed the five stages of a scoping review outlined by Arskey and O'Malley. Four online databases and MedEdPublish were searched. Two authors independently screened titles, abstracts and full texts. Included articles described developments in medical education deployed in response to COVID-19 and reported outcomes. Data extraction was completed by two authors and synthesized into a variety of maps and charts.

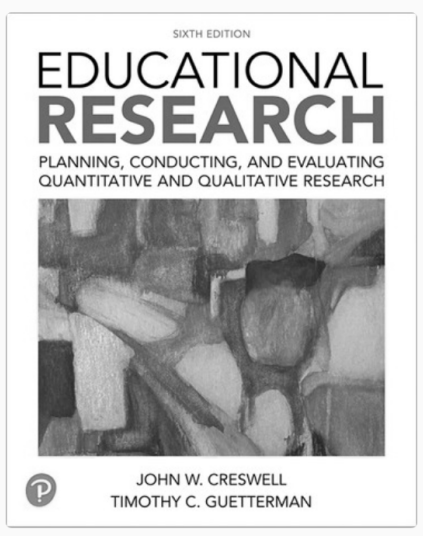
Results: One hundred twenty-seven articles were included: 104 were from North America, Asia and Europe; 51 were undergraduate, 41 graduate, 22 continuing medical education, and 13 mixed; 35 were implemented by universities, 75 by academic hospitals, and 17 by organizations or collaborations. The focus of developments included pivoting to online learning ($n = 58$), simulation ($n = 24$), assessment ($n = 11$), well-being ($n = 8$), telehealth ($n = 5$), clinical service reconfigurations ($n = 4$), interviews ($n = 4$), service provision ($n = 2$), faculty development ($n = 2$) and other ($n = 9$). The most common Kirkpatrick outcome reported was Level 1, however, a number of studies reported 2a or 2b. A few described Levels 3, 4a, 4b or other outcomes (e.g. quality improvement).

Conclusions: This scoping review mapped the available literature on developments in medical education in response to COVID-19, summarizing developments and outcomes to serve as a guide for future work. The review highlighted areas of relative strength, as well as several gaps. Numerous articles have been written about remote learning and simulation and these areas are ripe for full systematic reviews. Telehealth, interviews and faculty development were lacking and need urgent attention.

KEYWORDS
Best evidence medical education; undergraduate; postgraduate; continuing

Advanced Training in Education


Episodic CME
Mini-Teaching Fellowships / Certificate Programs
1-2 Year Medical Education Fellowships
Masters in Health Professions Education
PhD in Medical Education

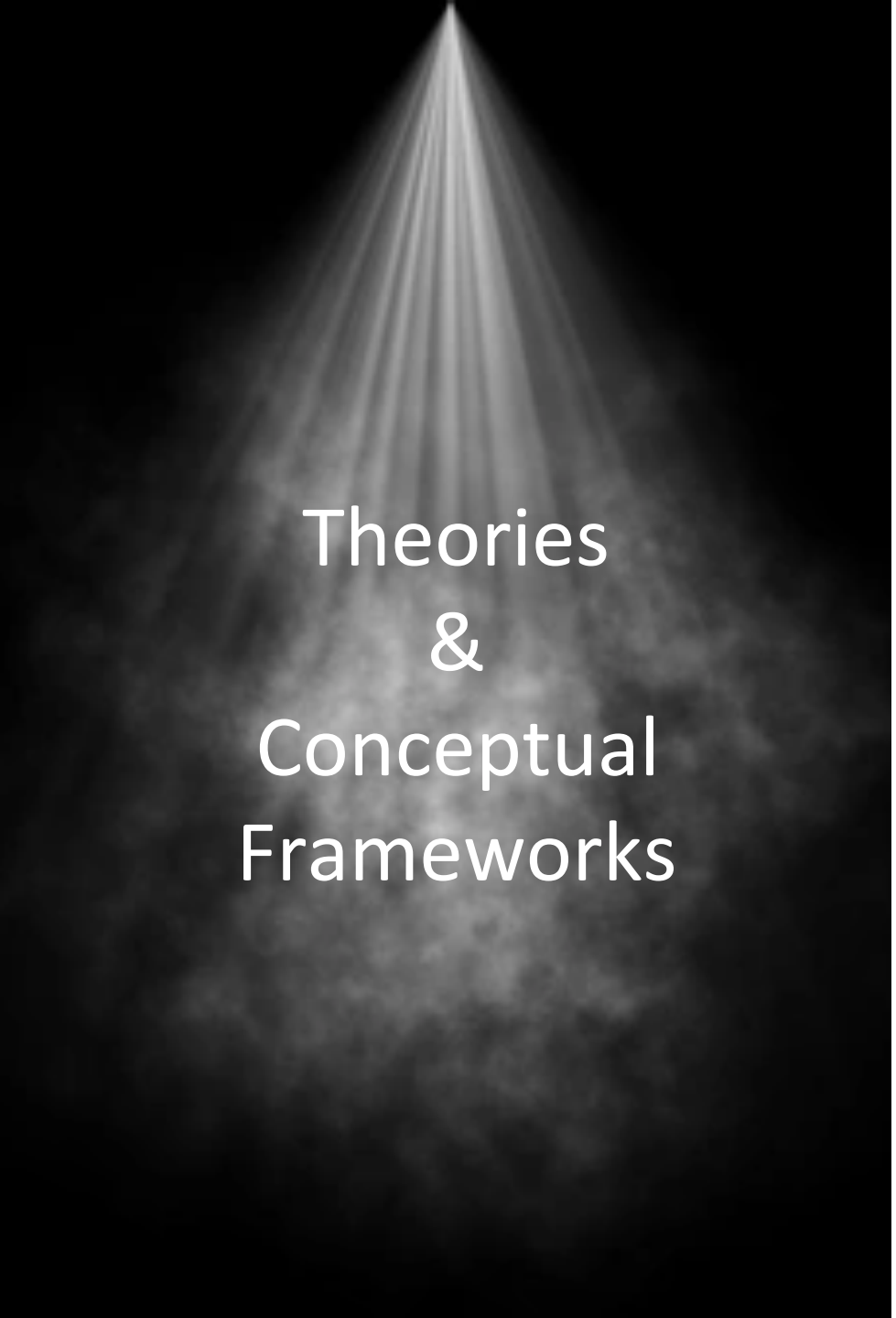


Books

Journals (Sign up for “what’s new in…”)

Podcasts (https://keylimepodcast.libsyn.com)

To enhance scholarly productivity, what are the “highest yield” areas to focus on?



- A **theory** is a set of principles or ideas that has explanatory power for why something works.

- A **conceptual framework** provides a way of thinking about a problem.

Torre DM, Daley BJ, Sebastian JL, Elnicki DM. Overview of current learning theories for medical educators. *Amer J Med.* 2006;119(10):903-7.

Bordage G, Lineberry M, Yudkowsky R. Conceptual frameworks to guide research and development in health professions education. *Acad Med.* 2016; 91(12):13.

Scholarly Writing

- Get to know the work of Lorelei Lingard
- Attend a writing workshop (by her!)
- Use her problem-gap-hook approach

Story, Not Study: 30 Brief Lessons to Inspire Health Researchers as Writers by Lorelei Lingard and Chris Watling

The **Writer's Craft** in *Perspectives on Medical Education*

Academy of Medical Educators

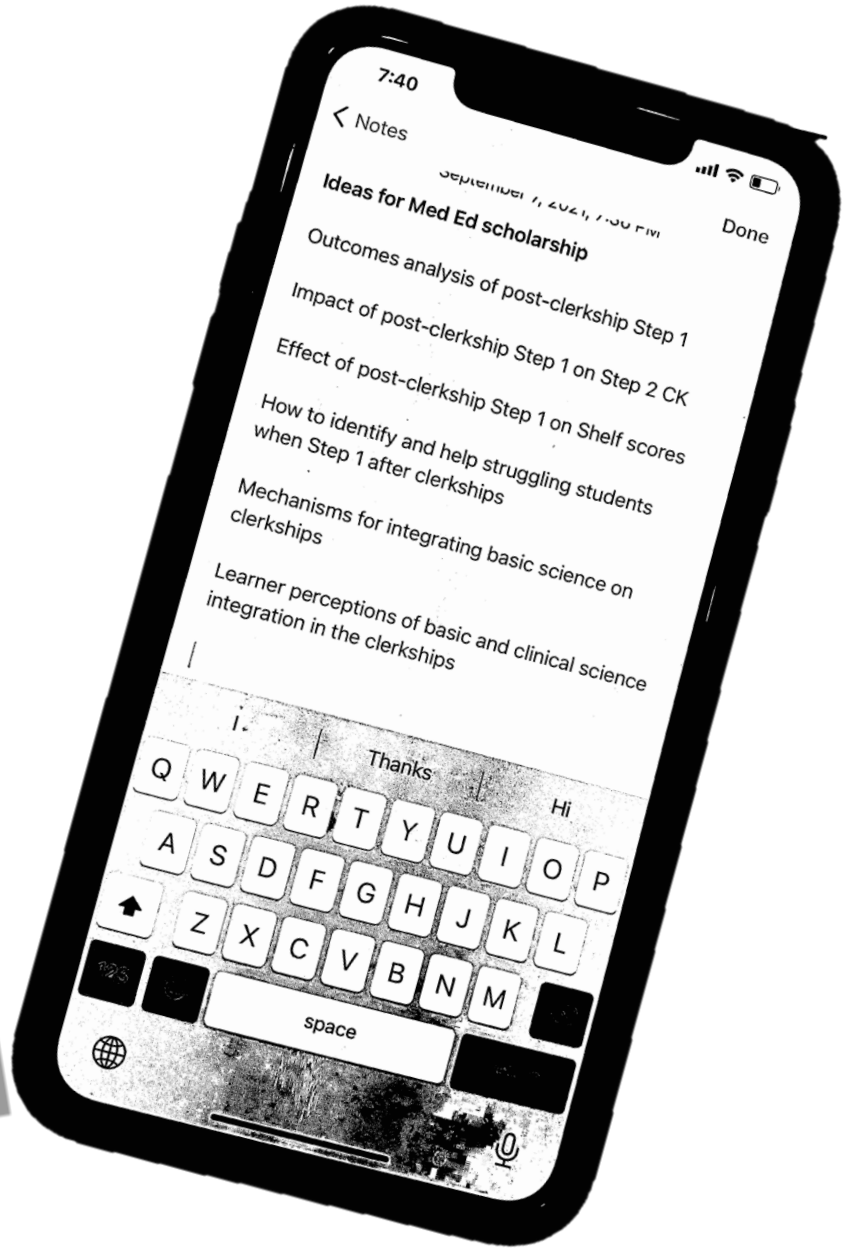
3 Catalysts

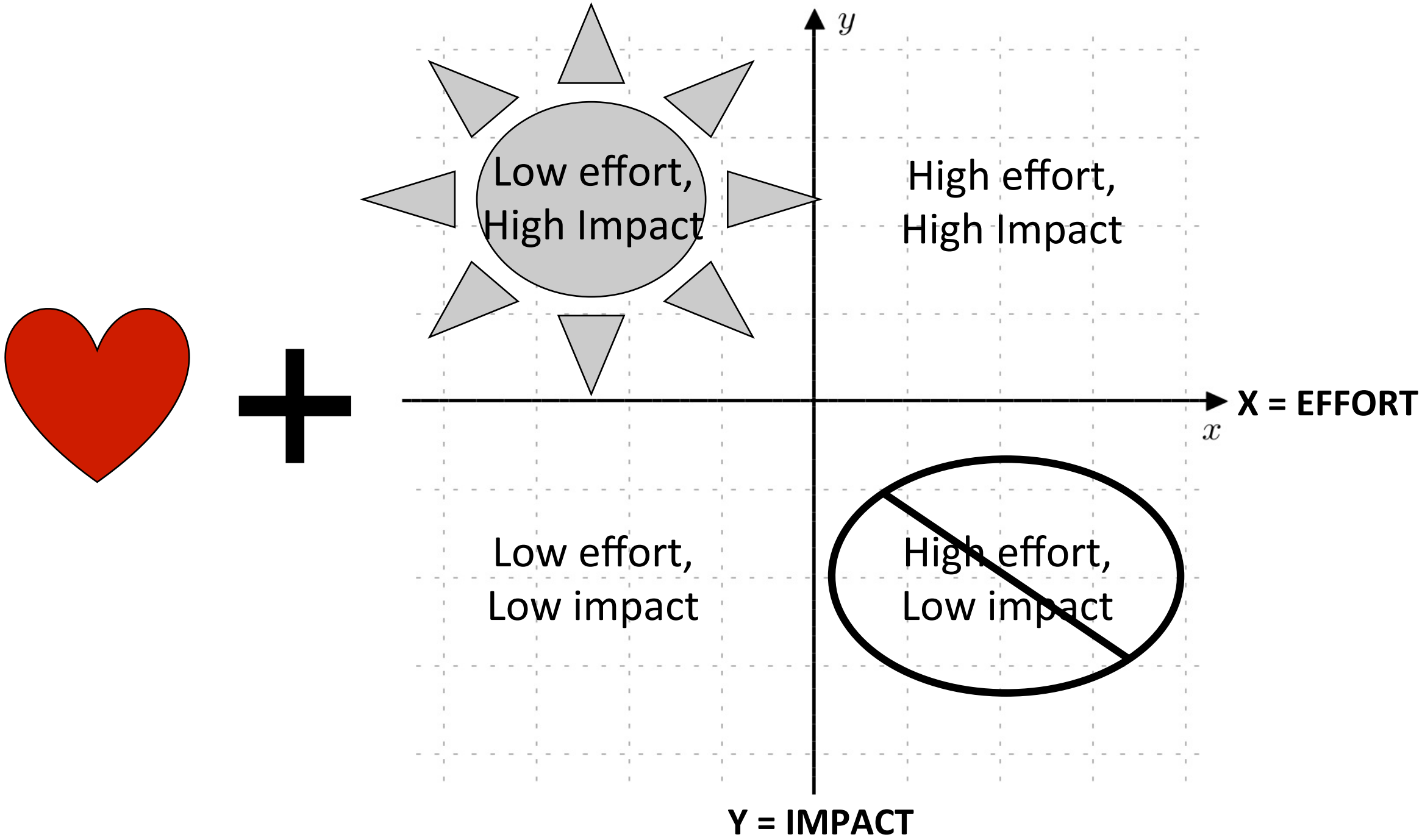
- Mentors
- Teams
- Advanced Training in Education


08:15

Capturing Ideas

Scholarship Pipeline




Low effort,
High Impact
High effort,
High Impact
Low effort,
Low impact
High effort,
Low impact
y
x
X = EFFORT
Y = IMPACT

Idea → Research Question

Steps	Explanation
1. Select an idea or a problem	**Use local issues to formulate a general question** • Challenge, interest or change @ your institution **Gather ideas from reading medical education journals**
2. Perform a literature review	**Review prior publications** • Identify prior methodologies, gaps in understanding and areas for elaboration **Identify theories / conceptual frameworks** • Informs your research including the selection of study variables and interpretation of results
3. Refine your question	**Narrow your general research question to a more specific question** • Use the FINER framework • Ensure the question is answerable with implications for educational practice, policy and research

Adapted from: Dine CJ, Shea JA, Kogan JR. Generating Good Research Questions in Health Professions Education. *Acad Med.* 2016; 91(12): 14.

FINER* Research Question

F **Feasible?**	Time, money & resources needed for project? Scope possible? Plan to acquire skills, engage team members/mentor?
I **Interesting?**	Why are you interested? Will others be interested? (UME/GME/CME/ educators/accreditors/patients/admin) and why?
N **Novel?**	Has this been done before? (hint: consult literature) How will you make this unique? (method, population, application, etc.)
E **Ethical?**	Do you need IRB approval? Any issues related to trainees, equipoise, etc.?
R **Relevant?**	How does this proposed project relate to the current climate of medical education? Does the answer to the question matter not only at your institution but also at others?

* Adapted from: Hulley S, Cummings S. ed. Designing Clinical Research. Baltimore, MD: Williams & Wilkins; 2007.

Choose your methods, fit for purpose

	Quantitative paradigm	Qualitative paradigm
?s	Investigates relationships between defined variables. How many, how often, to what level & in what direction?	Explores, describes, understands complex phenomena in context. How and why things work.
Analysis	Deductive using statistics	Inductive by researchers
Data	Ordinal or cardinal data (e.g. demographics, survey data, and test scores)	Normative data (e.g. interviews, focus groups and observations)
Strengths	Provides generalizable findings • when sample sufficiently sized / random • when tested in different institutions / populations	Provides rich descriptions of real situations Provides details of people's experiences Allows in-depth, comprehensive analysis

See: Castillo-Page L, Bodilly S, Bunton S. Understanding qualitative and quantitative research paradigms in academic medicine. 2012; 87(3):19.

Quantitative

Descriptive
Cross-sectional survey

Quasi-experimental
Intervention only
pre-post design

Non-experimental
Cohort study

Quasi-experimental
Non-equivalent parallel groups
pre-post design

Experimental
Randomized groups

Mixed methods

Qualitative

Case-studies

Ethnography (observations)

Grounded Theory

Interviews / Focus groups

Phenomenology

Discourse analysis

Kirkpatrick (Learner) Outcomes

Level 1:	Impact on Learner Satisfaction / Reaction
Level 2:	Impact on Learner Knowledge, Skills, Attitudes
Level 3:	Impact on Learner Behavior
Level 4:	Impact on Learner Organizational Practice / Patient Care

Other outcomes? (e.g., teacher outcomes?)

Medical Education Research Certificate (MERC)

- Data Management and Preparing for Statistical Consultation
- Formulating Research Questions and Designing Studies
- Hypothesis-driven Research
- Measuring Educational Outcomes with Reliability and Validity
- Introduction to Qualitative Data Collection Methods
- Program Evaluation and Evaluation Research
- Questionnaire Design and Survey Research
- Searching and Evaluating the Medical Education Literature
- Scholarly Writing: Publishing Medical Education Research

AAMC

Great… now that I've done all this work, where do I get published?

Top Medical Education Journals

	Academic Medicine	Medical Education	Teaching & Learning in Medicine	Medical Teacher
Aims	Fosters the exchange of ideas, information, and strategies to address the major challenges facing the academic medicine community	Seeks to be the pre-eminent journal in the field of education for health care professionals. Publishes material of high quality, reflecting world-wide or provocative issues & perspectives.	International forum for scholarship on teaching and learning in the health professions. Provide the theoretical foundations and practical analysis needed for effective educational decision making.	Provides accounts of new teaching methods, practical guidance on structuring courses and assessing achievement. Serves as a forum for communication between medical teachers and educators.
Scope	Education & training, health & science policy, institutional management & values, research & clinical practice in academia.	All aspects of health professional education including undergraduate education, postgraduate training, continuing professional dev, and IPE.	All aspects of health professional education across the continuum from premedical to postgraduate and continuing education.	Addresses the needs of teachers and administrators throughout the world involved in health professions training.
Types of Submissions	• **Articles:** scholarly descriptions of programs, curricula, etc. • **Research Reports**: original quantitative or qualita • **Perspectives:** scholarly opinions • **Invited Commentaries** • **Innovation Reports** • **Literature Reviews** • **Special Features:** Cover art, Last Page (1-page infographic), Medicine & the Arts, Teaching & learning moments, Letters to the editor)	• **Research Articles**: qualitative or quantitative studies • **Review Articles** • **Cross-Cutting Edge:** nic of relevance typically published outside of med ed • **Focus on Research Methods** • **Mythology**: clarify the extent to which common beliefs stand up to scientific scrutiny • **Really Good Stuff:** short reports of research in progress or innovations • **Commentaries** • **When I say…** Brief article aimed at clarifying important terminology • **Letters to the Editor**	• **Groundwork:** original qualitative studies of a phenomena of interest or original quantitative research • **Investigations:** Studies that formally test theoretical explanations of learning and performance • **Validation:** assessment instruments with validity evidence • **Educational Case Reports**: in depth process & outcomes of curriculum innovations (single-institution) or practitioner's personal experiences with teaching and learning • **Observations:** scholarly opinions / diverse perspectives	• **Articles:** scholarship / research • **Short Communications:** brief report of topical interest, work in progress • **Systematic Reviews / BEME guides** • **Twelve Tips:** practical advice in the form of 12 tips in a select area • **Personal View:** reflect author's personal experience / perspective • **How We…** implementation of an idea, or reflection on experience • **Around the World:** looks at countries / regions • **Commentaries** • **Letters to the Editor**

Annotated Bibliography for Educational Scholarship

https://www.aamc.org/media/38166/download

AAMC

Digital Publication Portals

	MedEdPORTAL	Multimedia Educational Resource for Learning and Online Teaching (MERLOT)	MedEdPUBLISH
Website	www.mededportal.org	www.merlot.org/merlot/index.htm	https://www.mededpublish.org
Sponsor	Association of American Medical Colleges (AAMC)	California State University	Association for Medial Educators in Europe (AMEE)
Submissions	**Educational Summary Report:** a required component of all submissions - the concise and scholarly representation of the educational activity, structured using the headings of Introduction, Methods, Results, and Discussion. **Special templates** ➢ **Simulation** ➢ **Standardized patients** ➢ **Team-based learning** ➢ **Assessment** **Appendices:** Contain all the materials for implementation (e.g., Powerpoints, videos, handouts, etc.) All content must adhere to copyright laws.	• **Materials are web-base (MERLOT does not host materials on its site – it provides links to the sites that host materials)** • **Assessment tools** • **Assignments** • **Collections** • **Development tools** • **E-portfolios** • **Open journal articles** • **Open textbooks** • **Presentations** • **Quizzes and tests** • **Simulations** • **Workshops and training materials**	• **Research Articles** • **Brief Reports** • **Data Notes**: brief descriptions of datasets that promote the potential reuse of research data • **New Educational Methods** • **Research Methods** • **Registered Reports** • **Software Tool Articles** • **Case Studies** • **Study Protocols** • **Systematic Reviews** • **Correspondence** • **Open Letters:** policies, guidelines, white. papers • **Editorials** • **Practical Tips** • **Opinion Articles**: authors' perspective on a topical issue.

Summary

3 catalysts for success

- Mentoring
- Teams
- Advanced training in education

Tools and resources

- The effort / impact grid
- The FINER research question
- Methods fit for purpose
- Kirkpatrick's or other outcomes
- Medical education journals and digital publication portals


ANY
QUESTIONS
?