



# MedEdMentor

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# Who are we?



# Disclosure

- MedEdMentor is a limited liability company
- Geoff and Greg are co-owners
- Our lifetime revenue is \$0
- Josiah Macy Jr. Foundation Grant

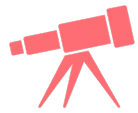


# Road Map

- Intro – Problem/Gap/Hook
- Quick Tour
- Case – Dr. Laurie Wolf, PhD, CPE, CSSBB
- Discussion



100%



# Problem (for others)

*“changes [in the field] have been made in the absence of supportive theory, or at least by a poor understanding of educational theory...”*

Gibbs T, Durning S, Vleuten CVD. Theories in medical education: Towards creating a union between educational practice and research traditions. *Med Teach*. 2011;33(3):183-187. doi:10.3109/0142159x.2011.551680

*“...the explicit use of theory within articles published in Medical Education has [remained] scant over these last 10 years.”*

Rees CE, Monrouxe LV. Theory in medical education research: how do we get there? *Medical Education*. 2010;4(44):334-339. doi:10.1111/j.1365-2923.2009.03615.x

*“Many academic faculty members are educators, yet few are familiar with key education theories that inform their practice.”*

Gottlieb M, Boysen-Osborn M, Chan TM, et al. Academic Primer Series: Eight Key Papers about Education Theory. *West J Emerg Medicine*. 2017;18(2):293-302. doi:10.5811/westjem.2016.11.32315





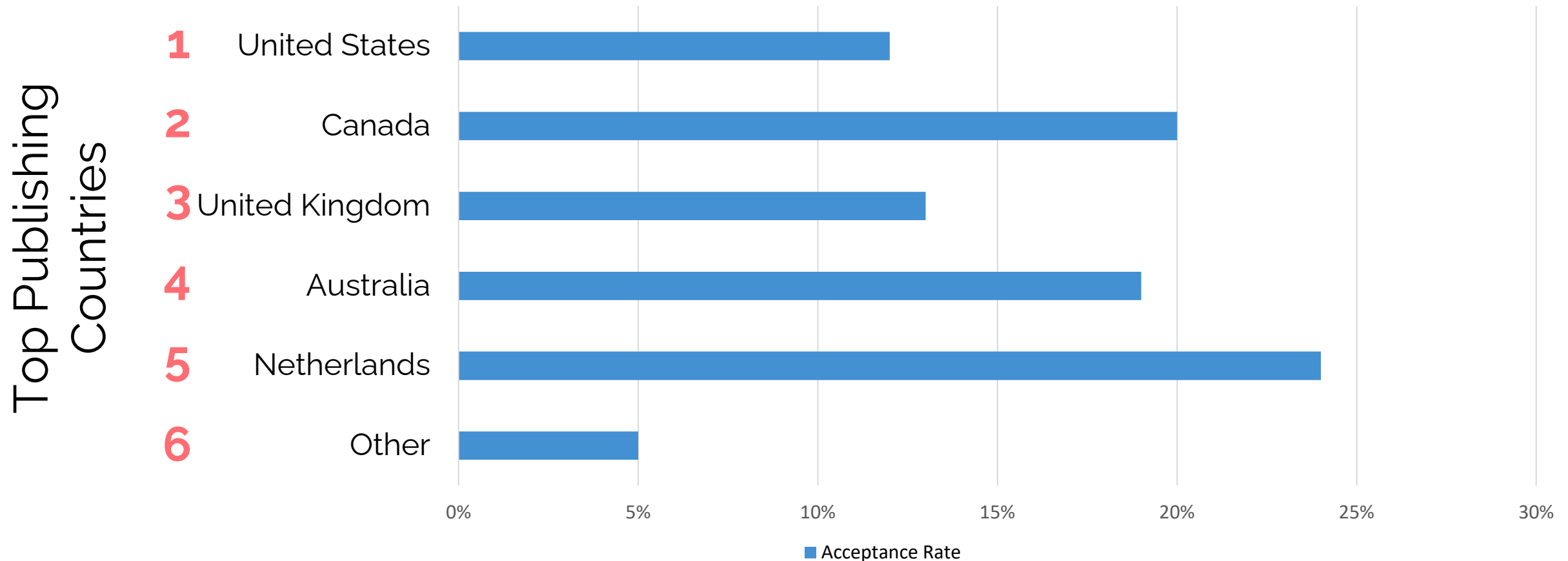
# Problem (for all of us)

- Skopec M, Issa H, Reed J, Harris M. **The role of geographic bias in knowledge diffusion: a systematic review and narrative synthesis.** Res Integr Peer Rev. 2020;5(1):2. doi:10.1186/s41073-019-0088-0
- Madden C, O'Malley R, O'Connor P, O'Dowd E, Byrne D, Lydon S. **Gender in authorship and editorship in medical education journals: A bibliometric review.** Med Educ. 2021;55(6):678-688. doi:10.1111/medu.14427
- Ajjawi R, Crampton PES, Ginsburg S, et al. **Promoting inclusivity in health professions education publishing.** Med Educ. 2022;56(3):252-256. doi:10.1111/medu.14724
- Maggio LA, Haustein S, Costello JA, Driessen EW, Jr ARA. **Joining the meta-research movement: A bibliometric case study of the journal Perspectives on Medical Education.** Perspectives Medical Educ. 2022;11(3):127-136. doi:10.1007/s40037-022-00717-9
- Maggio LA, Costello JA, Ninkov AB, Frank JR, Artino AR. **The voices of medical education scholarship: Describing the published landscape.** Med Educ. 2023;57(3):280-289. doi:10.1111/medu.14959



# Problem (for all of us)

## Manuscript Acceptance Rate – *Medical Education*





# Gap

*Unequal distribution of resources, expertise, and mentorship is a primary driver of the lack of diverse voices in medical education literature*



# Hook



Account ▾

## Find clarity in your research journey

The AI-powered platform for medical education  
research.

Launch MedEdMENTOR



# Quick Tour

Role of Mentor	MedEdMentor Analogy
Orient to field	Lessons Glossary
Theoretical framing	Theory Database Theory Suggester
Provide relevant literature	Literature Search
Guidance	MedEdMentor AI



# Laurie Wolf, PhD, CPE, CSSBB

- Healthcare is a complex, dynamic, sociotechnical environment. When adverse events occur, the science of Human Factors Engineering can help to understand the factors that contributed to the event and help to implement strong, sustainable solutions.
- Goals:
  - Teach an interdisciplinary approach to conducting a Root Cause Analysis.
  - Provide an opportunity to customize solutions to real-world patient safety issues provided by the audience.
  - Applying human factors principles to patient safety problems to provide an opportunity for strong, sustainable, systems-based solutions.



# MedEdMentor AI



## MedEdMentor AI

By mededmentor.org 

The AI mentor for medical education research

How can I use theories in medical education r...

How does Cognitive Load Theory apply to we...

Can you explain the difference between theor...

 Message MedEdMentor AI...



ChatGPT can make mistakes. Consider checking important information.



# Project Summary

*This project aims to apply Human Factors Engineering principles to healthcare safety, teaching an interdisciplinary approach to Root Cause Analysis and developing customized, sustainable solutions for real-world patient safety issues identified by the audience.*



**Twelve tips for embedding health and safety education**

H. Vosper , S. Hignett , P. Bowler

**tldr** Professional guidance as to how approaches are offered to further learning in frontline healthcare practice.

[Expand](#)

**Teaching Root Cause Analysis**

Maya Aboumrad , Julia Neily , E. ... Development - 2019

**tldr** Experiential learning involves competency in QI/PS practices across interdisciplinary teams.

[Expand](#)

**A UK Perspective on Human Factors Curricula**

H. Vosper , S. Hignett - American

**tldr** The authors suggest a possible central structure around which patient safety teaching.

[Expand](#)

**What do nursing students learn about patient safety? an integrative literature review.**

Susanna Tella , Mari Liukka , David Jamookeeah , Nancy Smith , P. Partanen , H. Turunen - Journal of Nursing Education - 2013

**tldr** The identified content of patient safety was learning from errors, responsible individual and interprofessional team working, anticipatory action in complex environments, and patient safety-centered nursing.

[Expand](#)

**SAFETY: an integrated clinical reasoning and reflection framework for undergraduate nursing students.**

Bedelia Hicks Russell , Melissa J. Geist , Jenny House Maffett - Journal of Nursing Education - 2012

**Abstract** Nurse educators can no longer focus on imparting to students knowledge that is merely factual ... [Expand](#)

**Storytelling: An Authentic Approach to Patient Safety Nursing Education.**

K. Karlowicz - Nurse Educator - 2023

**tldr** Storytelling promotes reflective learning by prompting students to examine beliefs, challenge assumptions, transform their understanding of concepts, and connect theory to practice.

[Expand](#)

[Expand](#)

[Expand](#)

m

safety is paramount has provided the work aims to apply this knowledge to

... sive wellness curriculum

... ysis to internal medicine residents ... porting system and fishbone

... aching

... ical Education - 2005

... presented using the real-life (non- ... nd students felt the experience ... nhanced their Understanding of health ... n professions and helped develop

... tem-Based Learning.

... 16

... CA process using problem-based ... ent course is described.



16,400  
Results

# Google Scholar Results

[PDF] From Theory to Real-World Practice: A Review of the Literature  
Beyond

G Dagliana, S Albolino, Z Muliss

... the key **issues** in **healthcare** and ergonomics community. ...

☆ Save Cite Cited by 4

Human error and patient safety

AR Wilson, PJ Fabri, J Wolfson

... **human factor engineers** to ... and **human error issues**, facilitat

☆ Save Cite Cited by 25

[BOOK] Patient Safety

A Agrawal - 2014 - Springer

... I believe that harnessing the ... **factors**. The second case study

☆ Save Cite Cited by 29

[HTML] ... Novel Theory-Based Vi  
Culture in the Department of Su  
Protocol for ...

LM Mazur, A Khasawneh, C Fenison... - J

... the **Human Factors Analysis** and Cla  
**patient safety** events, with ... scenarios t

☆ Save Cite Cited by 3 Related

[HTML] The challenges toward real-world  
approaches: narrative review

A Duffy, GJ Christie, S Moreno - JMIR Hu

... **concerns** over UCD brushing over hol  
**personalized health care** is built ... a dig

☆ Save Cite Cited by 23 Related

[BOOK] Health care comes home

, ... on the Role of **Human Factors** in Ho

... **multidisciplinary** Committee on the R  
on those **issues** and the ... experience of

☆ Save Cite Cited by 164 Related

[PDF] Medical teamwork and patient safety: the evidence-based relation

DP Baker, S Gustafson, J Beaubien, E Salas... - AHRQ ..., 2005 - researchgate.net

... relation between teamwork and **safety** in **real-world**, high-risk ... Second, **customized** versions of MedTeams are now being ... background information on **human factors principles**. The ...

☆ Save Cite Cited by 413 Related articles All 5 versions

Human factors and ergonomics in health care

P Carayon, K Wust, BZ Hose... - ... of **human factors** and ..., 2021 - Wiley Online Library

... ) **aims** to support the creation and **development** of **Patient** ... to allow users to **customize** the interface of **medical** devices. A ... **issue** in **health care**, which leads to **patient safety problems** as ...

☆ Save Cite Cited by 61 Related articles All 5 versions

[BOOK] Agile implementation: A model for implementing evidence-based  
**healthcare solutions** into **real-world** practice to achieve **sustainable change**

M Boustani, J Azar, CA Solid - 2020 - books.google.com

... I pursue these **goals** by leading the **development** of agile ... , and the very real **issue** of provider burnout. Some estimates ... serving the **personalized** and complex needs of **patients** and ...

☆ Save Cite Cited by 13 Related articles

[PDF] Patient safety research: a guide for developing training programmes

World Health Organization - 2012 - apps.who.int

... , **human factors** and the need to improve **patient safety** culture. ... to **analyse** local cases when **teaching root cause analysis** is ... on **problems** in the **real world**, as well as contributing to the ...

☆ Save Cite Cited by 45 Related articles All 2 versions

# MedEdMentor AI



## MedEdMentor AI

By mededmentor.org 

The AI mentor for medical education research

How can I use theories in medical education r...

How does Cognitive Load Theory apply to we...

Can you explain the difference between theor...

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ChatGPT can make mistakes. Consider checking important information.



# Learning Objectives

1	Define Human Factors Engineering and explain its relevance to patient safety in healthcare settings.	6	Develop sustainable, systems-based solutions to address identified patient safety issues using Human Factors Engineering principles.
2	Identify the key components of a comprehensive Root Cause Analysis in healthcare.	7	Evaluate the potential effectiveness of proposed safety interventions using Human Factors Engineering criteria.
3	Analyze a healthcare adverse event using Human Factors Engineering principles to determine contributing factors.	8	Design a plan to implement and sustain patient safety improvements in a healthcare setting.
4	Apply systems thinking to understand the complex interrelationships in healthcare environments that impact patient safety.	9	Articulate the benefits and challenges of applying Human Factors Engineering principles to healthcare safety problems.
5	Demonstrate the ability to conduct an interdisciplinary Root Cause Analysis, incorporating perspectives from various healthcare roles.	10	Create a customized approach to address a real-world patient safety issue from the participant's own workplace using the principles and methodologies learned in the session.

# 4-Hour Workshop

*This is an excellent list of learning objectives. I particularly like that they get more complex as we go down the list. Can you outline a 4-hour comprehensive hands-on learning session including interdisciplinary learners that covers these objectives?*



# 4-Hour Workshop

**Certainly! Here's an outline for a 4-hour comprehensive hands-on learning session that covers all the learning objectives:**

## **1.Introduction and Overview (30 minutes)**

1. Welcome and introductions
2. Brief Overview of Human Factors Engineering in Healthcare
3. Explanation of session structure and objectives

## **2.Human Factors Engineering and Root Cause Analysis Basics (45 minutes)**

1. Interactive lecture on Human Factors Engineering principles
2. Introduction to Root Cause Analysis Methodology
3. Q&A session



# 4-Hour Workshop

- 3. Interdisciplinary Team Formation (15 minutes)**
  1. Divide participants into diverse teams
  2. Assign roles within teams (e.g., physician, nurse, administrator)
- 4. Case Study Introduction (15 minutes)**
  1. Present a complex healthcare adverse event scenario
  2. Provide background information and initial data
- 5. Root Cause Analysis Exercise (60 minutes)**
  1. Teams conduct RCA on the case study
  2. Apply Human Factors Engineering principles
  3. Use tools like fishbone diagrams or the "5 Whys" technique



# 4-Hour Workshop

## **BREAK (15 minutes)**

### **6. Systems Thinking Workshop (30 minutes)**

1. Interactive exercise on mapping healthcare system components
2. Identify interconnections and potential failure points

### **7. Solution Development (45 minutes)**

1. Teams develop sustainable, systems-based solutions
2. Apply Human Factors Engineering principles to proposed interventions

### **8. Implementation Planning (20 minutes)**

1. Teams create high-level implementation plans for their solutions
2. Consider potential barriers and how to overcome them





# 4-Hour Workshop

## 9. Presentations and Peer Feedback (30 minutes)

1. Each team presents their analysis and solutions
2. Other teams provide constructive feedback

## 10. Real-World Application (15 minutes)

1. Participants individually brainstorm how to apply learned principles to issues in their own workplaces

## 11. Reflection and Closing (20 minutes)

1. Guided reflection on key learnings
2. Discussion on challenges and benefits of the approach
3. Final Q&A and closing remarks



# 4-Hour Workshop = 5 Hours + 40 Minutes

This structure allows for a mix of theoretical learning and practical application, covering all the learning objectives through various interactive activities. The interdisciplinary nature of the teams ensures that participants gain experience in collaborative problem-solving across healthcare roles.

To make this session more engaging and effective, you could consider:

1. Using multimedia presentations for the lecture portions
2. Providing handouts or digital resources for reference during exercises
3. Using a real-time collaborative tool for team exercises
4. Having facilitators circulate during group work to provide guidance and answer questions

Would you like me to elaborate on any specific part of this outline or suggest ways to adapt it for different time constraints or participant backgrounds?

## Thoughts?



# 4-Hour Workshop (Take 2)

*This is Excellent!!!!!! Thank you!!! Well done.*

*My only issue with this is it is not 4 hours. It is 5 hours and 40 minutes, meaning it is much too long. Can you make a new curriculum similar to this but meets the time requirement of 4 hours? You will need to make judicious decisions to cut less relevant material or condense material or sections of the curriculum.*



# 4-Hour Workshop (Take 2)

*I apologize for the oversight in timing. You're absolutely right, and I appreciate your attention to detail. Let's create a revised 4-hour curriculum that maintains the core elements while making necessary adjustments:*

## Revised 4-Hour Curriculum:

### 1. Introduction and Overview (20 minutes)

1. Welcome and brief introductions
2. Overview of Human Factors Engineering in Healthcare and Session Objectives

### 2. Human Factors Engineering and Root Cause Analysis Basics (30 minutes)

1. Concise, interactive lecture on key principles
2. Introduction to RCA methodology

### 3. Interdisciplinary Team Formation and Case Study Introduction (15 minutes)

1. Divide into diverse teams
2. Present healthcare adverse event scenario

### 4. Root Cause Analysis Exercise (50 minutes)

1. Teams conduct RCA on the case study
2. Apply Human Factors Engineering principles

### 5. Systems Thinking Mini-Workshop (20 minutes)

1. Quick exercise on mapping healthcare system components

## BREAK (10 minutes)

### 6. Solution Development and Implementation Planning (45 minutes)

1. Teams develop solutions and create high-level implementation plans
2. Consider potential barriers and how to overcome them

### 7. Presentations and Peer Feedback (30 minutes)

1. Teams present analysis, solutions, and implementation plans
2. Brief peer feedback

### 8. Real-World Application and Reflection (15 minutes)

1. Individual brainstorming on applying principles to their own workplace
2. Guided reflection on key learnings

### 9. Closing Discussion (5 minutes)

6. Final Q&A and closing remarks

**TOTAL TIME: 4 HOURS** 



# 4-Hour Workshop (Take 2)

## Key changes:

1. Shortened introduction and lecture portions
2. Combined team formation with case study introduction
3. Integrated systems thinking into a mini-workshop
4. Merged solution development with implementation planning
5. Condensed presentation time
6. Combined real-world application with reflection
7. Removed separate closing session

**This revised curriculum maintains the hands-on, interdisciplinary approach while fitting within the 4-hour timeframe. It still covers all learning objectives, albeit with less depth in some areas. The focus remains on practical application and teamwork.**



# 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.*



# Theory Suggester

## Research phenomenon:

This project aims to apply Human Factors Engineering principles to hea

**Submit**

Free while in testing.

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# Theory Suggester



Here are some theories for you to consider:

- Human Factors Theory - 2 papers
- Interprofessional Education - 2 papers
- Human Factors/Ergonomics Theory - 1 paper
- Experiential Learning - 1 paper
- Institute for Healthcare Improvement Modules - 1 paper
- Agency for Healthcare Research and Quality Definitions - 1 paper
- Root Cause Analysis - 1 paper
- Quality Improvement - 1 paper
- Human-Centred Systems Engineering - 1 paper
- Patient Safety - 1 paper
- Interactive Learning - 1 paper
- Storytelling - 1 paper
- Systems Thinking - 1 paper
- Constructivist Educational Model - 1 paper
- Competency-Based Education - 1 paper
- Patient Safety Education - 1 paper
- Systems theory - 1 paper



# Theory Suggester

## Research phenomenon:

This project aims to apply Human Factors Engineering principles to hea

**Submit**

Free while in testing.

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# Theory Suggester

Here are some theories for you to consider:

- Resilience Theory - 3 papers
- Professional Identity Formation - 2 papers
- Social Learning Theory - 2 papers
- Self-Determination Theory - 1 paper
- Constructivist Grounded Theory - 1 paper
- Critical Pedagogy - 1 paper
- Stereotype Threat - 1 paper
- Microaggressions - 1 paper
- Behavioral Science - 1 paper
- Empowerment Theory - 1 paper
- Social Power Theory - 1 paper
- Ethical Decision-Making Theory - 1 paper
- Stress and Coping Theory - 1 paper
- Learning Theory - 1 paper
- Communities of Practice Theory - 1 paper
- Sociocultural Theory - 1 paper
- Hidden Curriculum - 1 paper
- Emotion Work - 1 paper
- Social Support Theory - 1 paper
- Emotional Intelligence - 1 paper
- Emotional Labor - 1 paper
- Wisdom-based Education - 1 paper
- Conceptual Model - 1 paper
- Socialization Theory - 1 paper



Role of Mentor	MedEdMentor Analogy
Orient to field	Lessons <sup>+</sup>
<i>Outlining research questions</i>	<i>Research Question Companion</i>
Theoretical framing	Theory Database <sup>+</sup> Theory Suggester <sup>+</sup>
Relevant literature	Literature Search <sup>+</sup>
<i>Methodologic guidance</i>	<i>Methodology Suggester</i>
General guidance	MedEdMentor AI <sup>+</sup>
Networking	<i>Online Community</i>
Publishing	<i>Journal Suggester</i> <i>Writing Coach</i>



# Making an impact

MedEdMentor Stats as of 6/30/2024 (Launched 9/2023)	
Registered users	1500+
Countries with users	80
Page views	40,000+
Minutes spent on site	10,000+
Searches (since 11/1/23)	5000+
Theory Suggester (since 1/31/24)	1000+



# What can you do?

- Sign up
  - ([www.mededmentor.org](http://www.mededmentor.org))
- Tell 5 friends
- Use it
- Please give us feedback
  - ([info@mededmentor.org](mailto:info@mededmentor.org))
- Reach out to help or for help





# Questions?

