

# Linking Medical Education Research and Practice

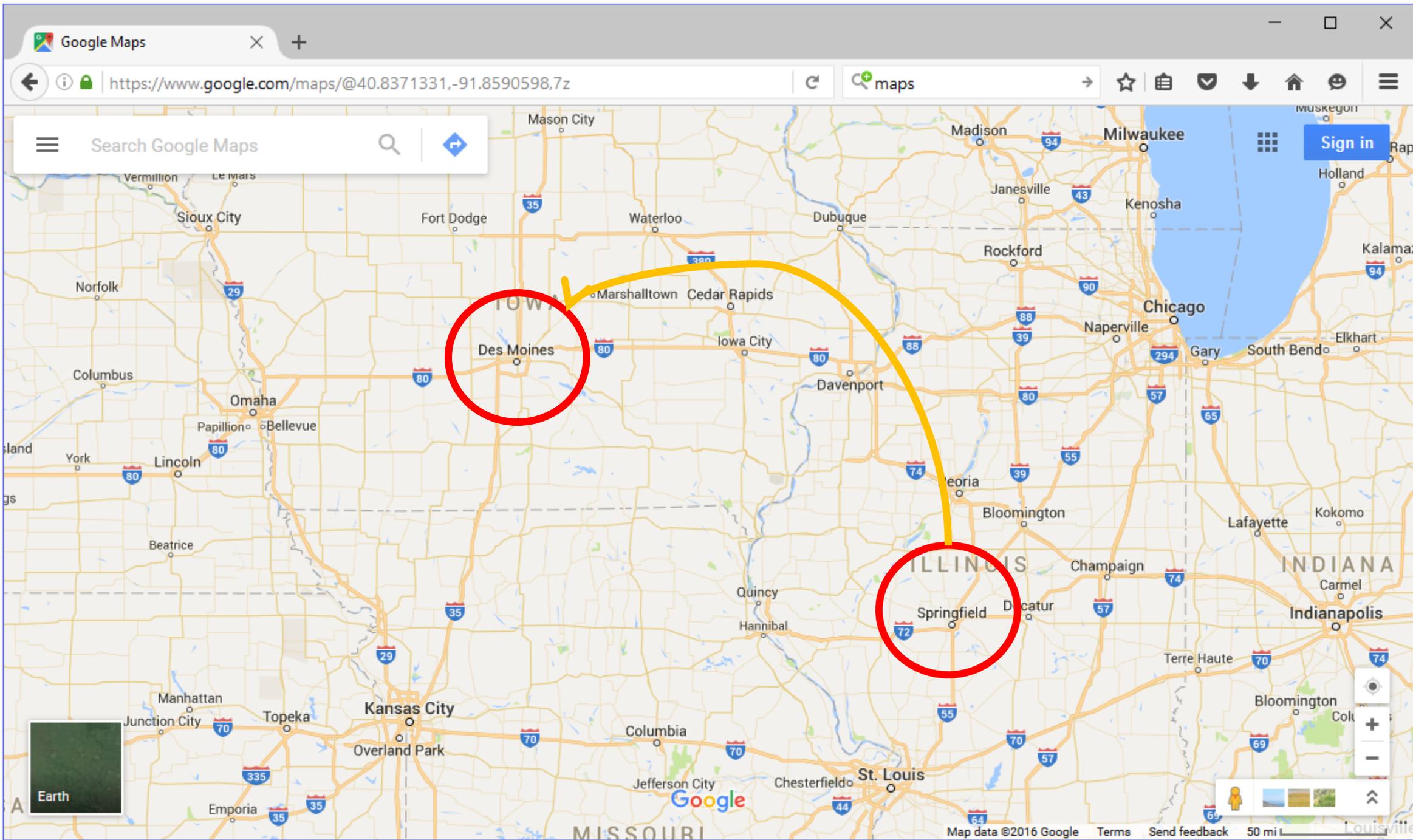
Heeyoung Han, PhD

Department of Medical Education  
Southern Illinois University School of Medicine

July 28, 2016



*Dr. Han indicated she has no financial relationships to disclose relevant to the content of this CME activity.*



# Mission of Des Moines University

*To improve lives in our global community by educating diverse groups of highly competent and compassionate health professionals*

# Southern Illinois University School of Medicine

- Mission
  - improving the health of the people of central and southern Illinois through its four-fold mission of education, clinical care, research, and community service.
- Learners & Faculty
  - Medical students – 290
  - Residents and fellows – 338
  - MEDPREP: 62 students (100% minority)
  - Faculty - 338 full-time, 37 part-time and 956 volunteers (all sites)



# Southern Illinois University School of Medicine

## Innovative Medical Education



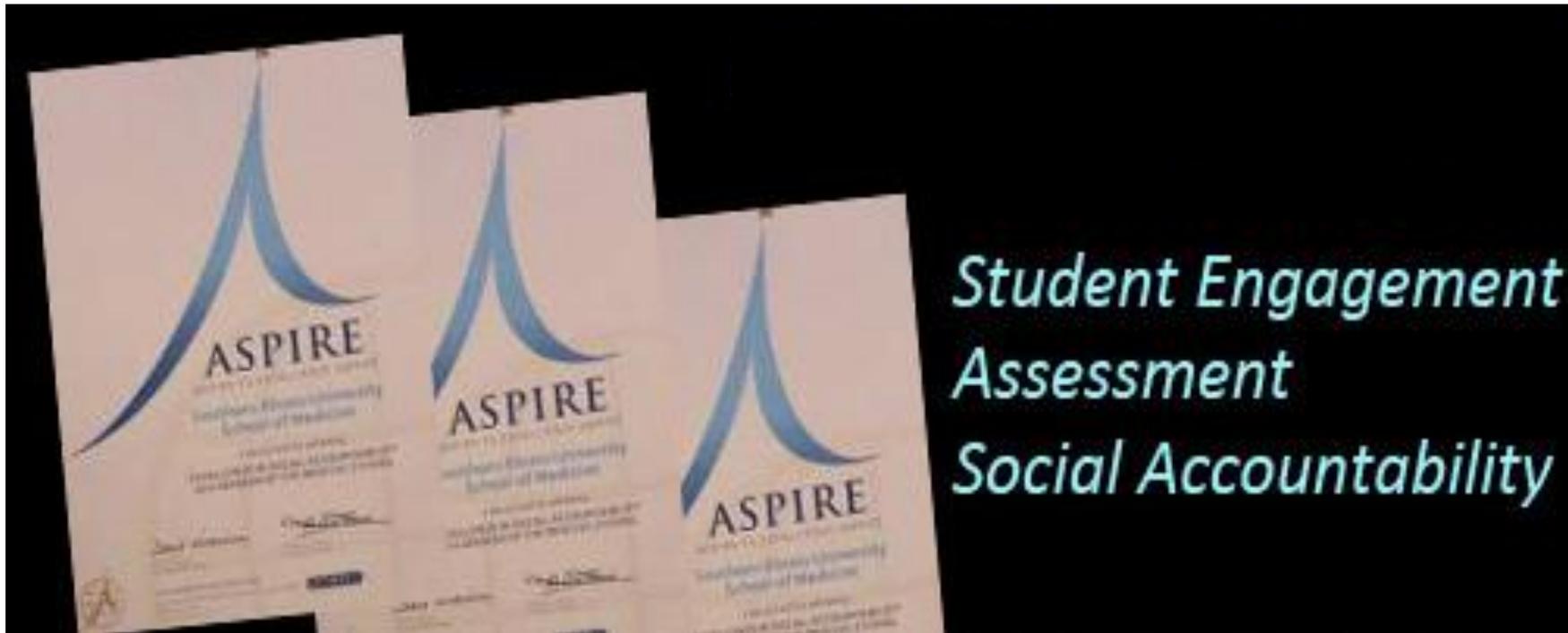
- ✓ Problem-Based Learning (PBL)
- ✓ Standardized Patient

Howard Barrows, M.D.



# Southern Illinois University School of Medicine

AMEE: An International Association For Medical Education 2013



# Workshop Outline

- Understand medical education research
- Exercise 1 – Create a research question
- Exercise 2 – Design medical education research
- Publication and dissemination approach
- Case Presentation
  - My medical education research experiences

# What is Educational Research?

## Definition

- Education research is the scientific field of study that examines **education and learning processes** and **the human attributes, interactions, organizations, and institutions** that shape educational outcomes.

# What is Educational Research? (cont.)

## Purpose of educational research

- Scholarship in the field seeks to **describe, understand, and explain** how learning takes place throughout a person's life and how formal and informal contexts of education affect all forms of learning.

# What is Educational Research? (cont.)

## Methods

- Education research **embraces the full spectrum of rigorous methods** appropriate to the questions being asked and also drives the development of new tools and methods.

# Types of Educational Research

- Literature review
- Empirical vs. non-empirical study
- Quantitative vs. qualitative study
- Mixed methods
- Program evaluation

# Difference between basic science research and educational research



- Basic research
- Applied research

# Difference between basic science research and educational research



- Context specific
- Hard to have a randomized control
- Practice driven

# Medical Education Research and Practice



# Roles of Medical Education Research

- Create evidence for medical education practice
- Inform curriculum and educational program for continuous improvement
- Predict students' success or failure
- Contribute to an existing body of knowledge in the field

# **Exercise #1**

## **Create a Research Question**

# Small group activity

- Using worksheet #1, reflect on your teaching practice and experience and write down your responses to each question.
- Share with your small group
- Decide on one topic as a group
- Present it to the whole group

# Good medical research questions

- Aligned with the school mission
- Concrete, not too broad, not too narrow
- Significance
- Finding a gap in the literature
- Guiding medical education practice
- Feasible, researchable
- Publishable

# Methods

- Empirical vs. Non-empirical
- Qualitative vs. Quantitative
  - Different perspectives
- Mixed methods
  - Multi methods research
- Program Evaluation

# Research paradigm

Inquiry

Quantitative

Qualitative

Positivism

Constructivism

What is reality? (Ontology)

How do we know? (Epistemology)

# Research paradigm

## Positivism

What is reality?

An absolute truth out there

How do we know?

Measuring observed activities

Inquiry

Quantitative

Deductive -  
Hypothesis testing

## Constructivism

Multiple realities socially constructed through experiences

Exploring subjective experiences in context

Qualitative

Inductive exploration

Positivism

Constructivism



# Research design elements

- Setting
- Participants
- Data sources
- Data analysis

# **Exercise #2**

## **Design of Methods**

# Exercise #2 - Methods

- Using the research question that your group presented, discuss each question in worksheet #2 and write down the group consensus in the whiteboard.
- Present it to the whole group

# Conducting a study

- Interdisciplinary collaboration
  - Content expert
  - Research method expert
  - Multiple institutions
- IRB approval
- Grant
  - [CGEA mini grant](#)
  - [The Society of Directors of Research in Medical Education](#)

# Publication of research

- Find a journal - Fit to the journal aims
  - Academic Medicine
  - Medical Education
  - Medical Teacher
  - Teaching and Learning in Medicine (TLM)
  - Advances in Health Sciences Education
  - The Clinical Teacher
  - Journal of Graduate Medical Education
  - Open-access journals
- Find a home for your paper!

# Alternative format of publications

- MedEdPORTAL
- Book Reviews
- Twelve Tips (Medical Teacher)
- Really Good Stuff (Medical Education)
- Conversation Starters (TLM)

# Why rejected

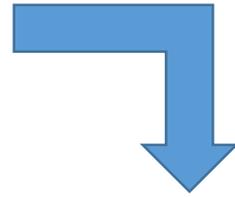
- No significance
- Unplanned
- Poor research design
- Lack of depth
  - Program evaluation without in-depth explanation of why and how
  - Satisfaction survey

# My medical education research experience

- Research to practice
- Practice to research

Continuous dialogue with practice

# Third Year Medical Students - Clerkships



# Literature

- Socialization and professional identity formation (Lindberg, 2009; Weaver, et al., 2011; Krupat, et al., 2011)
- Transition from non-clinical to clinical medical student (Teunissen & Westerman, 2011)
- Student struggles in clerkships (O'Brien, et al., 2007)

# Research Questions

- What are medical students' learning expectations for clerkship?
- What do they learn about practicing medicine through their clerkship experience?
- How do they learn about practicing medicine through their clerkship experience?

# Perspective on Learning

- Situated Learning
  - Learning as participation in the social world
  - How a newcomer becomes an experienced member of a community

*“Legitimate peripheral participation... (It) is an analytical viewpoint on learning, a way of understanding of learning (Lave & Wenger, 1991, p 40)”*



# Methods

- Longitudinal qualitative research
- Data Source
  - Three interviews of each participant across their clerkship year (2011-2012):
    - pre-clerkship
    - mid-clerkship
    - after-clerkship
  - Observations of each participant during a day of their clerkship experience

# Methods (cont.)

- Interview Protocol
  - Pre-clerkship interview
    - Prior health professional experience, learning expectations and concerns about clerkships
  - Mid-clerkship interview
    - Comparing actual experience with expectations
    - Applying medical knowledge to clerkship work
    - Relationship building
    - Learning norms
  - After-clerkship interview
    - Confidence change in application of knowledge
    - Unwritten rules
    - Improve clerkships

# Methods (cont.)

- Exempt from IRB review
- Twelve participants of 78 Year3 students
  - Female: 7
  - Male: 5
- Data Analysis
  - Open coding and axial coding using ATLAS.ti

# Findings

## Learning Expectations

Hands-on experiences

Being more knowledgeable  
(Clinical reasoning)

Realistic learning

Decision on a specialty

## Learning Outcomes

Limited hands-on experiences

Limited opportunities to practice diagnostic thinking

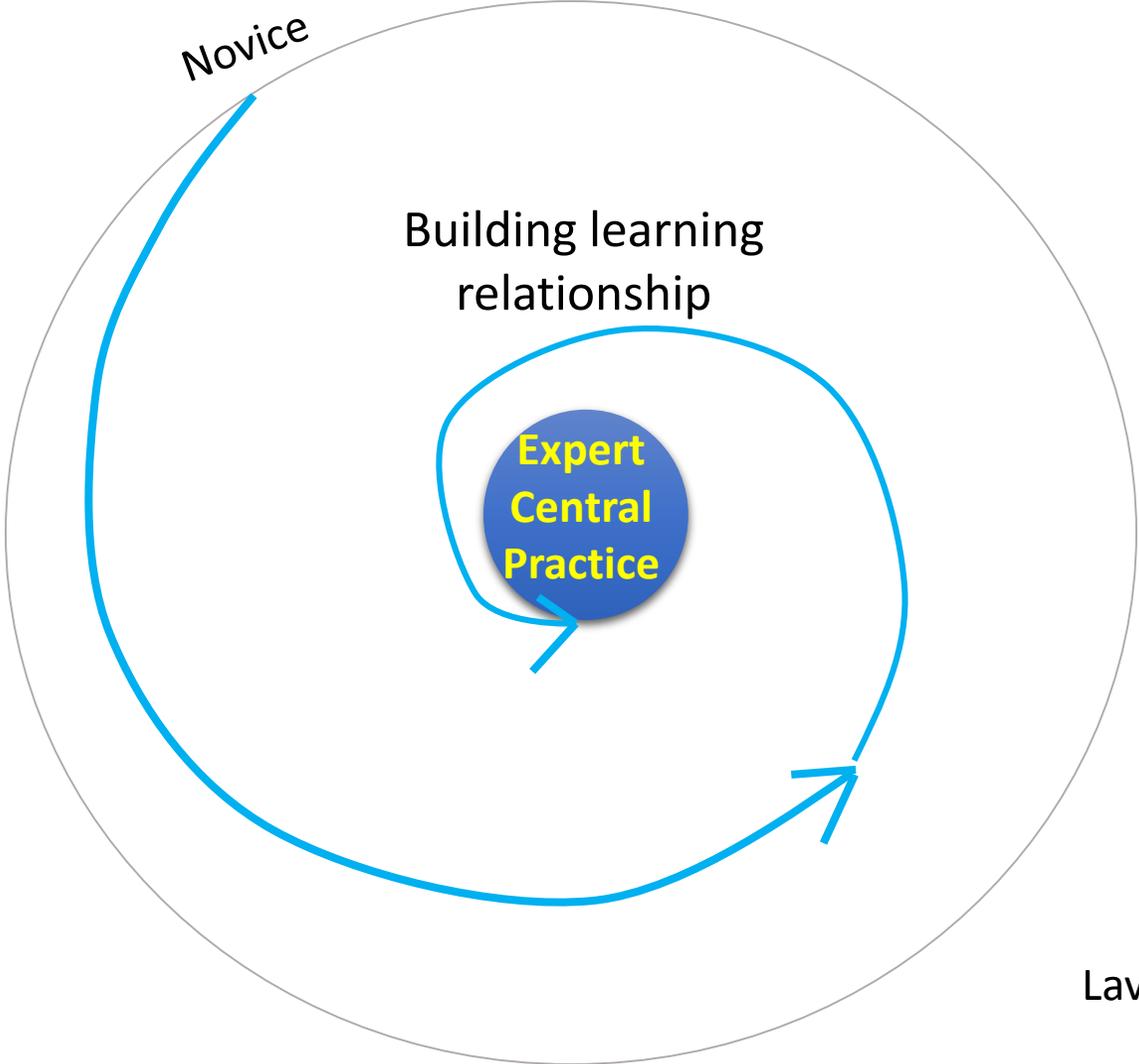
Confidence increased in interactions (Socialization)

Found people/specialty

Why did they have limited opportunities to practice diagnostic thinking?

Let's look at their learning process.

# Legitimate Peripheral Participation

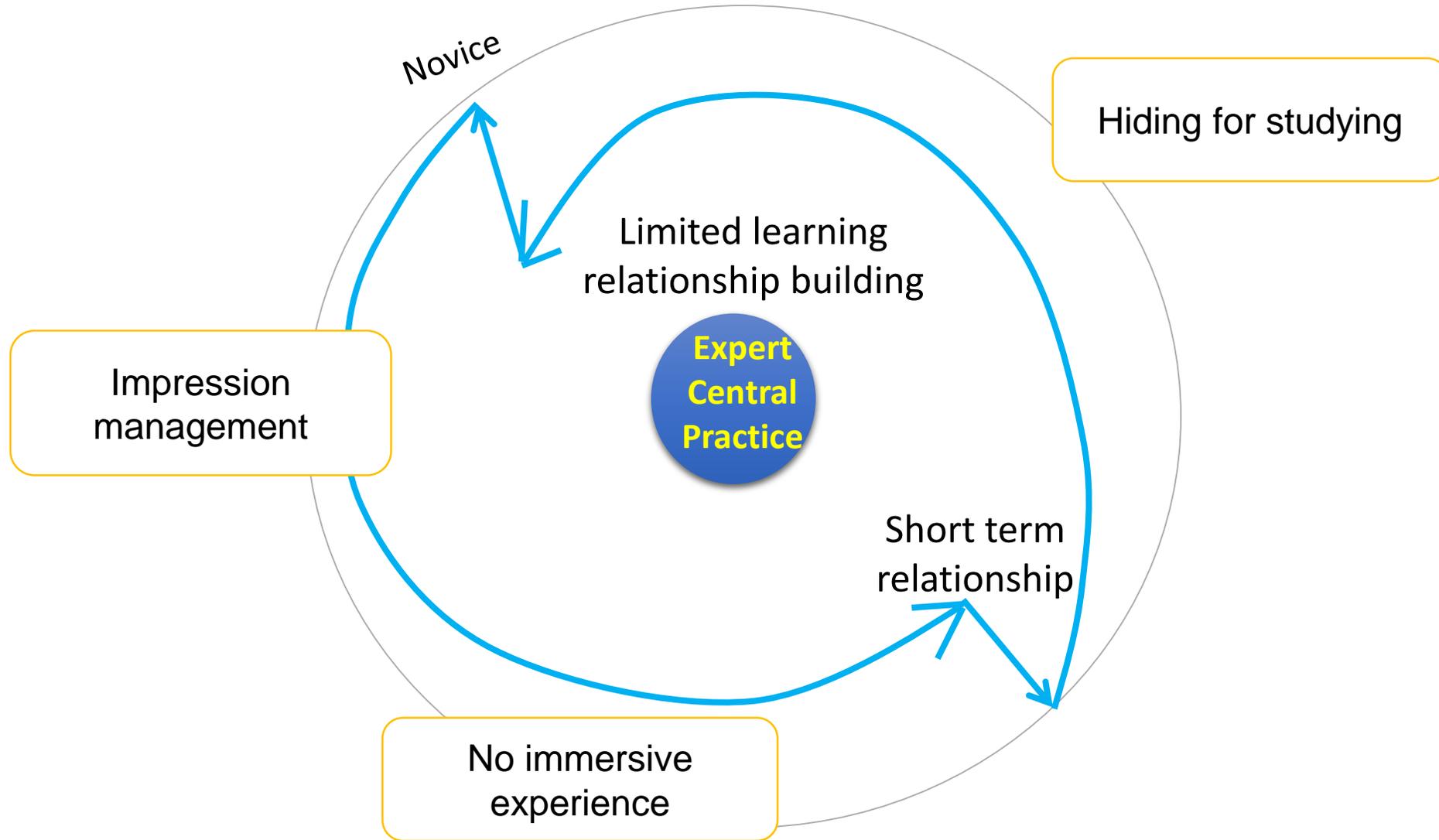


Lave & Wenger (1991)



# Findings

However, it did not happen in our clerkships. Instead...



## Learning in the Real Place: Medical Students' Learning and Socialization in Clerkships at One Medical School

Hoeyoung Han, PhD, Nicole K. Roberts, PhD, and Russell Korte, PhD

### Abstract

**Purpose** To understand medical students' learning experiences in clerkships: learning expectations (what they expect to learn), learning process (how they learn), and learning outcomes (what they learn).

### Method

Using a longitudinal qualitative research design, the authors followed the experiences of 12 participants across their clerkship year (2011–2012) at the Southern Illinois University School of Medicine. Interview data from each participant were collected at three points (preclerkship, midclerkship, and postclerkship) and analyzed using a grounded theory approach. Additionally, the authors observed participants

through a full clerkship day to augment the interviews.

### Results

Before clerkships, students expected to have more hands-on experiences and become more knowledgeable by translating textbook knowledge to real patients and practicing diagnostic thinking. During clerkships, students experienced ambiguity and subjectivity of attending physicians' expectations and evaluation criteria. They perceived that impression management was important to ensure that they received learning opportunities and good evaluations. After clerkships, students perceived that their confidence increased in navigating the health care environments and interacting

with patients, attendings, and residents. However, they felt that there were limited opportunities to practice diagnostic thinking. Students could not clearly discern the decision-making processes used by attending physicians. Although they saw many patients, they perceived that their learning was at the surface level.

### Conclusions

Students' experiential learning in clerkships occurred through impression management as a function of dynamic social and reciprocal relationships between students and attendings or residents. Students reported that they did not learn comprehensive clinical reasoning skills to the degree they expected in clerkships.

Clerkships are the first immersive learning environments where medical students start transferring their classroom learning to the real world. Students have preclerkship clinical experiences with standardized patients or shadowing, but entering into clerkships is an exciting time for students because it marks the beginning of real-world learning to be a doctor. However, this transition requires them to undergo different learning experiences where they face considerable

ambiguity and uncertainty.<sup>1,2</sup> During this time students observe the practices, values, and norms of medical professionals in action. In addition, they are expected to "hit the ground running" by participating in low-risk tasks, taking initiative, and engaging in discussion about patient care. Successful adjustment to this real-place learning environment is not predicted by students' preclinical knowledge and skills.<sup>3</sup>

### Introduction

Students' learning in clerkship has been much studied to understand their professional identity formation and socialization.<sup>4,5</sup> *Boys in White*, the classic book on students' socialization in medicine, depicts how medical students become socialized into the profession and the culture in medical training.<sup>6</sup> Several recent studies shed additional light. Krupat and colleagues<sup>7</sup> found that students tended to react positively to most clerkship events regardless of whether they were positive or negative. According to their findings, students perceived even negative events such as physicians' poor behaviors as lessons

learned, as those clerkship experiences also help them get a better sense of the system. O'Brien and colleagues<sup>8</sup> reported that clerkship directors perceived students struggling with applying knowledge to clinical reasoning and engaging in self-directed learning, which students rarely recognized as struggles. Instead, they spent their energies struggling with uncertainty in their roles and responsibilities, expectations on their clinical performance, and the logistics of clinical settings.<sup>9</sup> As those two studies indicated, students' experiences in clerkships are characterized as socialization to get a better sense of the health care system and their roles as future doctors. These studies fit within the socialization literature, which focuses on students' feelings and experiences in terms of professional identity formation. This avenue of study is less concerned with what students learn or expect to learn while on clerkships.

Thus, while students' experiences in clerkships have been investigated, it is still not clear what students expect to learn, how they learn in clerkships, and what they actually learn. Therefore, the

# Learning in the real place: Medical students' learning and socialization in clerkships at one medical school (Han et al., 2015)

**Dr. Han** is assistant professor, Department of Medical Education, Southern Illinois University School of Medicine, Springfield, Illinois.

**Dr. Roberts** is associate professor, Department of Medical Education, Southern Illinois University School of Medicine, Springfield, Illinois.

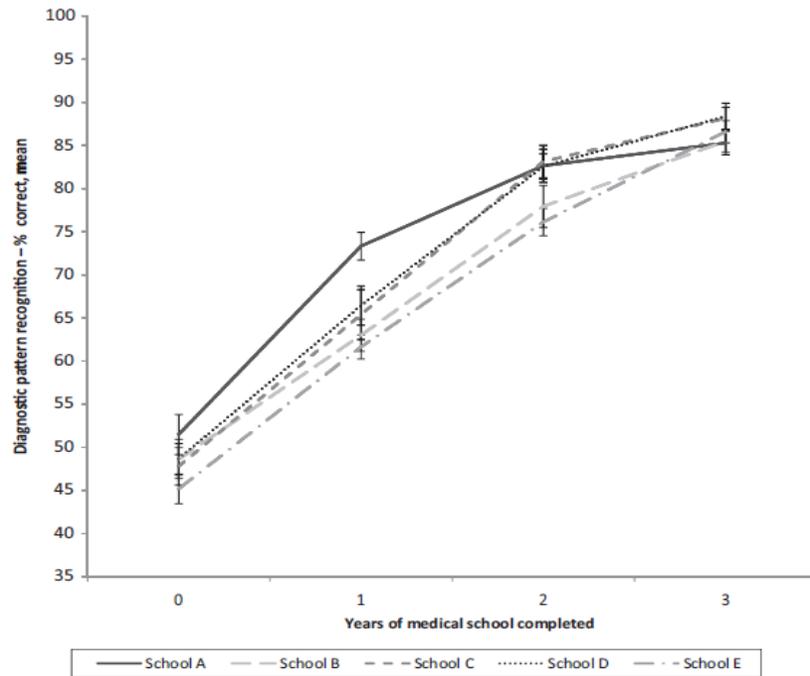
**Dr. Korte** is assistant professor, Organization Learning, Performance, and Change, School of Education, Colorado State University, Fort Collins, Colorado.

Correspondence should be addressed to Dr. Han, Department of Medical Education, Southern Illinois University School of Medicine, 913 North Rutledge St., PO Box 19681, Springfield, IL 62794-9681; telephone: (217) 545-8536; fax: (217) 545-0120; e-mail: khan@siu.edu.

Acad Med. 2015;90:231–239.  
First published online October 20, 2014  
doi: 10.1097/ACM.0000000000000254

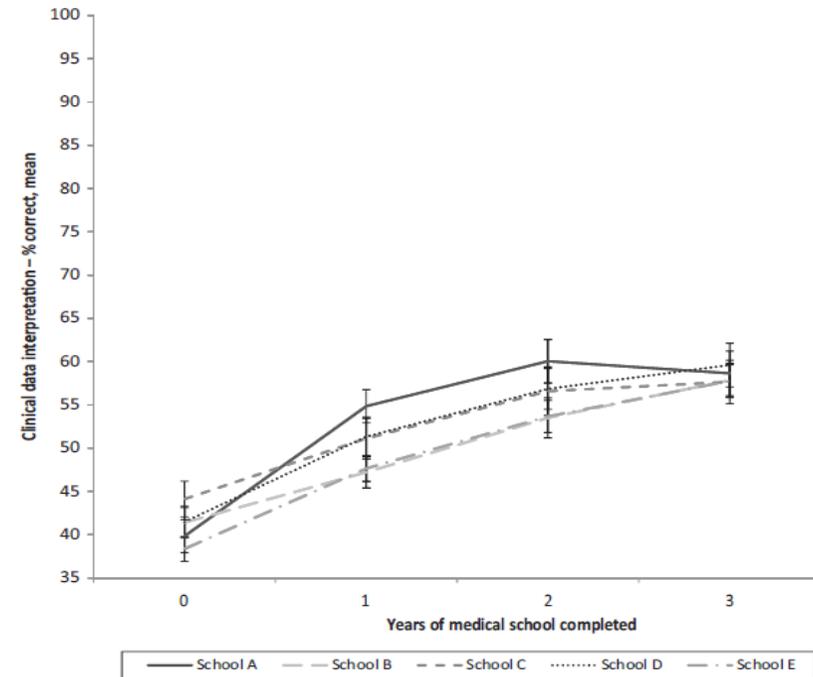
# Tracking development of clinical reasoning ability across five medical schools using a progress test (Williams, et al., 2011)

## Diagnostic pattern recognition



**Figure 1** Mean performance (with 95% confidence intervals) on a 2008 test measuring diagnostic pattern recognition for 2,394 students with zero, one, two, or three years of training in five medical schools.

## Clinical data interpretation



**Figure 2** Mean performance (with 95% confidence intervals) on a 2008 test measuring clinical data interpretation for students with zero, one, two, or three years of training in five medical schools.

# “The emperor has no clothes!”



Debra Klamen, MD, MHPE  
Associate Dean for Education & Curriculum  
Professor and Chair, Dept of Medical Education

Perspective

## Getting Real: Embracing the Conditions of the Third-Year Clerkship and Reimagining the Curriculum to Enable Deliberate Practice

Debra Lee Klamen, MD, MHPE

**Abstract**

There are many calls in the literature for changes in how medical students are educated. Although many curricular innovations have been attempted, a look at the theory behind how complex skills are learned provides useful information to guide new curriculum developments. The requirement of deliberate practice as the road map for success in the learning of clinical skills suggests that perhaps the current clinical milieu is not an optimal place for medical students to learn. The idiosyncrasy inherent in the dramatically changed medical landscape of the last 20 years makes it difficult for such practice to occur; the apprentice model of legitimate peripheral participation in a community of practice as it used to exist does no longer. Indeed, current workplace environments are at odds with the needs of medical students. Overwhelming numbers of goals and objectives in existing third-year clerkships serve as wish lists of what students should learn. They should be replaced by a systematic, longitudinal curriculum in which all students can be guaranteed to have encountered the core clinical competencies as defined. Meeting the goals and objectives of the current clerkships to a longitudinal, spiral curricular format frees up clinical time in the third year to be used for students to find their future specialty and socialize into medicine. Doing so allows for an opportunity for students to spend extended time in areas of their interest. Moving to such a new curriculum format maintains and optimizes learning while embracing the reality of current clinical workplace environments.

The literature is crowded with calls for changes in how we educate medical students.<sup>1-3</sup> The frequency and similarity of reforms and recommendations for change suggest that the medical community has agreed that there are problems in the current system, but not as yet a satisfactory solution. Included in these calls for change is the need for a more competency-based education.<sup>4</sup> These calls have begun to be addressed by the Accreditation Council for Graduate Medical Education's Competencies and Milestones project in graduate education<sup>5</sup> and, more recently, by the Association of American Medical Colleges' core entrustable professional activities for entering residency.<sup>6</sup>

**The Theory Behind the Acquisition of Complex Skills**

While lists of competencies, milestones, and core-entrustable professional activities are rapidly being rolled out, it is unclear from

what basis they are generated. How exactly is competency in a complex set of skills achieved from a theory-based perspective? Anders Ericsson and colleagues<sup>7</sup> have described the characteristics of deliberate practice, which involves isolating component skills, practicing them under controlled conditions, and receiving immediate feedback from coaches who have observed the performances. The result is steady and consistent improvement until an expert level of performance is achieved. In work settings such as those found in the traditional medical training of 50 years ago, this practice was achieved through an apprentice model, one of legitimate peripheral participation,<sup>8</sup> a situated learning process by which newcomers become part of a community of practice by beginning with observation and then gradually moving into more intensive participation as they are deemed able. The apprenticeship model allowed for sustained interaction between a given student and faculty that led to a trusting relationship in which the faculty felt comfortable giving very specific feedback and the student felt comfortable admitting weaknesses, ultimately leading to an improvement in the student's performance.

**A Changing Clinical Practice Landscape**

The clinical practice landscape has changed dramatically in the last 20 years. Patients' lengths of stay are shorter, faculty rotate in and out of clinical assignments frequently, trainees' duty hours are restricted, and faculty must spend more time supervising residents. Talbot<sup>9</sup> notes that "the key element of the workplace curriculum is the relationship between the goals and trajectory of the workplace and those of individuals who participate in and learn through their engagement in the workplace." However, the goals and trajectory of today's clinical settings now present a mismatch with those students trying to learn in it. Short relationships between attending and student, and resident and student, are the norm rather than the exception.<sup>11</sup> The system is criticized for the idiosyncrasy and opportunism (a student may see 10 cases of appendicitis during a clerkship, while another on the same clerkship will see none) which exists in the clerkships, causing faculty to "start over" with each new student on each new (extremely short-lived) rotation experience, assuming he or she knows nothing.<sup>12-14</sup> The inpatient setting, where much of clerkship education is conducted, also impedes the practice of diagnostic reasoning, because in the majority of those cases the diagnostic reasoning has already been completed by the admitting team. This current model is the antithesis of what is needed for legitimate peripheral participation, the substrate for necessary deliberate practice, to occur. Secondary to these brief



# Medical research changes practice



# Disclosure

- Josiah Macy Jr. Foundation Grant

# Problems that we identified in the clerkship curriculum

1. Clinical reasoning is not learned in traditional clerkships.
2. The current clerkship structure does not work for apprenticeship and clinical immersion.
  - Socialization into medicine is important but has been neglected.

# Clinical Reasoning Curriculum

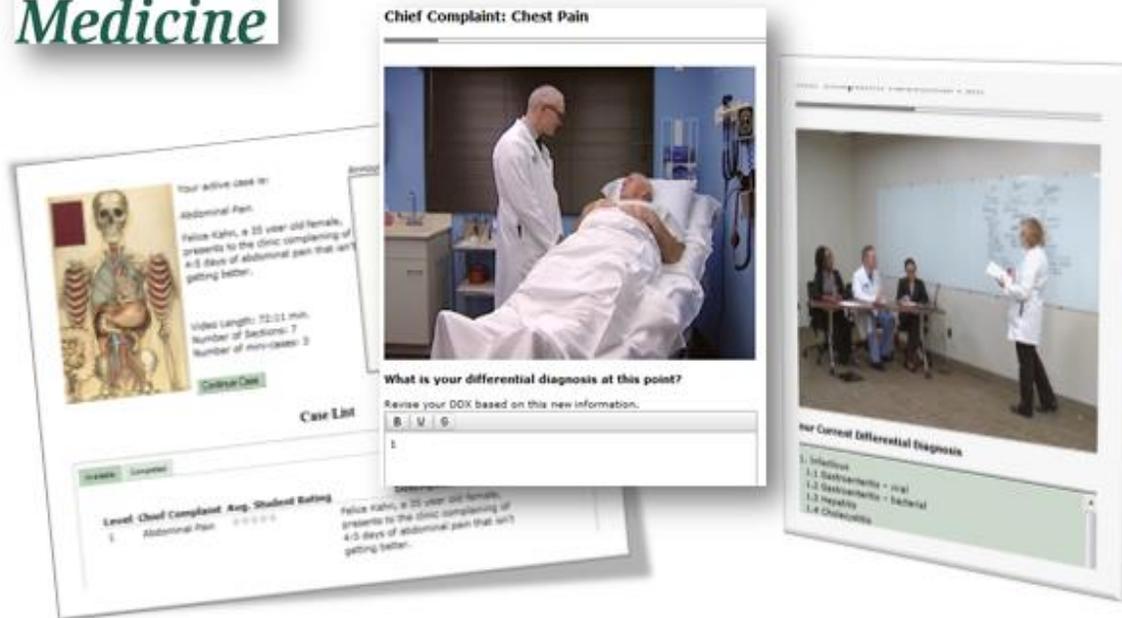
Critical Clinical Competencies CCC (online learning system)

- We aimed to address this issue by introducing a new curriculum modality designed to develop medical students' clinical reasoning skills through deliberate practice on contrasting cases with expert cognitive role-modeling.

(Ericsson et al., 1993; Schwartz & Bransford, 1998; Lave & Wenger, 1991)



## Critical Clinical Competencies (CCC) Curriculum



- **Three-year longitudinal, online, interactive video-based curriculum**
- **144 discrete conditions** associated with **12 chief complaints**
  - 12 “long cases” and 3 “contrasting cases” for each long case
  - 48 discrete cases for each training year



# 3 year longitudinal curriculum

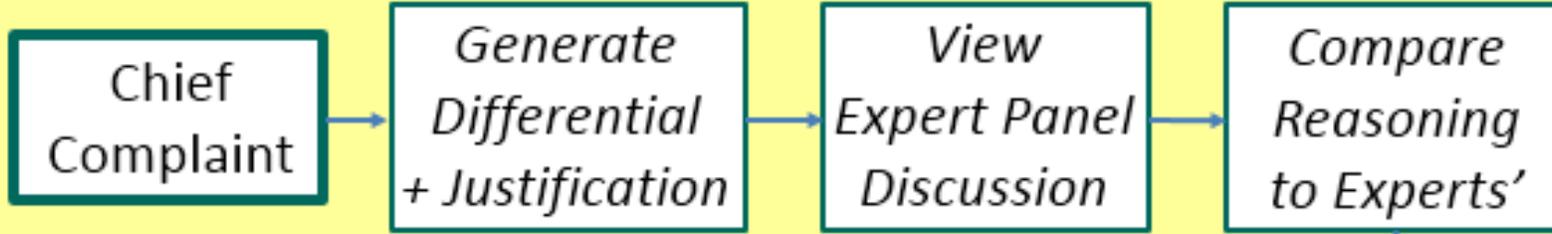
	Year 1	Year 2	Year 3
Fatigue	Diagnosis 1 3 contrasting cases	Diagnosis 2 3 contrasting cases	Diagnosis 3 3 contrasting cases
Dyspnea	Pneumonia (Pneumothorax, COPD, CHF)	Asthma	PE
Chest pain			
Vaginal Bleeding			
Back Pain			
Dizziness			
Cough			
Abdominal Pain			
Mood Change			
Edema			
Headache			

12 Chief Complaints

144 discrete diagnoses

**Deliberate Practice**

## Clinical Reasoning Practice and Modeling Process



**Expert Role Modeling**

**Contrasting Cases**

## Level 1

### Chief Complaint: Back Pain



#### What is your differential diagnosis at this point?

Revise your DDX based on this new information.

**B** U  Spell Check

Demo test (Student input)

Save

#### Why?

Type your explanation for why you chose certain diagnoses and not others.

**B** U  Spell Check

Demo test (Student input)

Save

Continue →

## Level 1

### Chief Complaint: Back Pain

---



#### Your Current Differential Diagnosis

Demo test (Student input)

#### Your Current Diagnostic Justification

Demo test (Student input)

Continue →

## Level 1

### Chief Complaint: Back Pain

#### Experts' Differential Diagnosis

- 1. Musculoskeletal Disorder
  - 1.1 Muscle strain
  - 1.2 Disk problem (herniation)
  - 1.3 Osteoarthritis (chronic degenerative process)
- 2. Inflammatory process of spine
- 3. Chronic muscle inflammation
- 4. Nerve Compression of the Spine Secondary to a Tumor
  - 4.1 Prostate cancer
  - 4.2 Colon cancer

#### How does your differential compare with the experts'?

How many total diagnoses are on your list?

How many of your diagnoses are on the experts' list?

#### Your Current Differential Diagnosis

Demo test (Student input)

Continue →



## Level 1

### Chief Complaint: Back Pain

---

#### Thought Question



What related symptoms and risk factors would help you refine your differential diagnosis?

Type your answer here.

**B** U ↺ Spell Check

Save

Continue →

# Expected Learning Outcomes

- We expect to see a steady increase in clinical reasoning development throughout all three years of the curriculum.

# Innovation Strengths

- Theory-based approach to developing clinical reasoning skill.
- Ability to detect students who struggle with clinical reasoning earlier in the curriculum.
- Provides a framework for progressive performance assessment.
- Fosters a performance-assessment culture that emphasizes diagnostic justification.

# Feasibility and Transferability

- The CCC curriculum is a web-based online curriculum that can easily be utilized by other medical schools.
- It also features a case-authoring and management system, which allows educators to edit cases without programmer help.

# Problems that we identified in the clerkship curriculum

1. Clinical reasoning is not learned in traditional clerkships.
2. The current clerkship structure does not work for apprenticeship and clinical immersion.
  - Socialization into medicine is important but has been neglected.

# Y3 (clerkships) Curriculum transformation

## Learning Objectives

Let's be realistic!

1. Socialization into medicine
2. Find your people

# Y3 (clerkships) curriculum transformation

## Structure

- 12 months → 8 months Core and 4 months Personalized Education Plan (PEP)
  - Core : Socialization into medicine (4 week immersive clinical experience)
  - PEP: Individualized path for deep dive, Early remediation if necessary

# Y3 (clerkships) curriculum transformation

- Embracing the realities of clinical environments
  - Idiosyncrasy and opportunistic
- One student-to-one attending for 4 weeks
  - Adopting coaching model
  - Legitimate peripheral participation
- No lectures
  - Khan videos like video resources
- No shelf exams
- Clerkship advisor for 8 months
  - Mentoring and reflections

# Y3 (clerkships) curriculum transformation

## Assessment

- Focusing on clinical learning and performance, not shelf exam scores for honors
- Direct observations and immediate feedback
- Reflections
- Longitudinal development
- Embracing subjectivity

# Isn't subjectivity bad for assessment?

Toward Authentic Clinical Evaluation: Pitfalls in the Pursuit of Competency.

*“Our study reinforces and adds evidence to the growing concern regarding pitfalls in the pursuit of objectivity, by showing that assessment of residents’ performance in the clinical setting is still, despite concerted efforts to promote standardized competency frameworks, heavily influenced by the subjective. But this should not be considered a failure.”* (Ginsburg et al., 2010, p. 786)

# Change Process

- Y3T committees
  - Advisory committee
  - Core committee
  - PEP committee
  - Assessment committee
  - Faculty Development committee
  - Program Evaluation committee

**The new clerkship has started this month!**

# Student-centered, participatory program evaluation

## Two-Step Approach

July, 2015	Traditional Clerkship Curriculum	July, 2016	New Clerkship Curriculum
	M3 student reflective journaling of their own clerkship experiences in the traditional clerkship		M4 students observation of M3 students – Comparing it with their own experiences
	Focus groups with their peers in traditional clerkship		Focus groups with new clerkship students – Comparing prior focus group data with new experiences
	<b>Preparing M3 Students for Program Evaluation</b>		<b>M4 Students Conducting Program Evaluation</b>

# My medical education research experience

- Research to practice
- **Practice to research**

Continuous dialogue with practice

# Introduction

- Physician-patient communication is an important skill
- ACGME core competency
- Internal Medicine reporting milestone # 20
- We started Resident Audio Recording Project (RAP) in 2008

# Resident Audio-recording Project (RAP)

- Three-step process
  1. Resident physician records real patient encounter
  2. Transcribed recording is evaluated by a panel (physicians and lay members)
  3. Resident self evaluation followed by panel mentor feedback
- 1 RAP per year ( 3 total over residency)
- Total time per RAP is 4-6 hours
  - 30-60 min for resident to record encounter
  - 90 min for attending physicians and lay members to evaluate during the group review
  - 90 min for resident to review recording & receive feedback
  - 30 min for attending physician to provide feedback to resident

# RAP Transcript (Example)

1  
2  
3  
4

Digital Audio Recording  
Dr. 13061 Group 2  
SIU Internal Medicine Residency Audio Recording Project  
Educational Innovations Project

12	00:00:09;29	Doctor:	Okay. And, a, nice to meet you, ma'am. So how's everything going on with you?
13			
14	00:00:15;18	Patient:	A, so-so right now.
15	00:00:17;07	Doctor:	So-so.
16	00:00:18;05	Patient:	I've had—I had a fall in my kitchen (???) and tore my knee up a little bit. And—
17			
18	00:00:23;20	Doctor:	Can you be louder, ma'am?
19	00:00:24;22	Patient:	I tore my left knee up a little bit.
20	00:00:26;26	Doctor:	Right.
21	00:00:27;16	Patient:	I, a--a fracture—a stress fracture in there. And then I've got torn meniscus.
22			
23	00:00:33;09	Doctor:	Right. Right.
24	00:00:34;23	Patient:	So, I'll be doing therapy starting, oh, I go for a consultation on Friday.
25			

36  
37  
38  
39  
40

|00:01:01;12|  
|00:01:01;19|  
|00:01:04;00|

to go the (???) clinic and some blood work I just had done.  
Doctor: Oh.  
Patient: For calcium stuff, for osteoporosis.  
Doctor: Right. So according to your, a, the hypertension, ma'am, a, you're on multiple medications for hypertension, as you know?

# RAP Evaluation Form

## Resident Audio-Recording Project Evaluation – Clinic

Resident Code/ID Number: \_\_\_\_\_  
 Evaluator's Name: \_\_\_\_\_  
 Today's Date: \_\_\_\_\_

E	=Exemplary	completes all of the bullets under topic with adeptness expected of an experienced clinician
A	=Above Average	completes all bullets and shows above average ability
S	=Satisfactory	completes most of the bullets under topic with average effectiveness
M	=Marginal	completes some of the bullets under topic; below average effectiveness
U	=Unsatisfactory	none of the bullets under topic are addressed

### 1. Opening the Interview

#### a. Self-introduction

- Gives own name
- Tells their training level and attending physician' name
- Tells who they work for (Dept. of Medicine)
- Asks how the patient wants to be addressed

1a \_\_\_\_\_

#### b. Solicited patient's presenting concerns

- Inquires about what brought them to the clinic
- Summarizes concerns back to the patient for clarity
- Compiles & prioritizes list of patient concerns

1b \_\_\_\_\_

### 2. Attitudes

#### a. Nonjudgmental

- Does not show disdain for life-style choices
- Attempts to treat illness regardless of non-adherence

2a \_\_\_\_\_

#### b. Involves patient appropriately in process

- Lets the patient tell their story
- Responds with appropriate number of "Ok", "Yes", etc.

2b \_\_\_\_\_

### 3. Interpersonal Skills

#### a. Engages patient

- Keeps patient on track—did not allow to ramble
- Communicates doctor's interest in patient's problems
- Effectively draws patient (and family) into conversation

3a \_\_\_\_\_

#### b. Empathetic

- Shows an understanding of the patient's feelings
- Seems comfortable with patient

3b \_\_\_\_\_



#### c. Listening abilities

- Does not interrupt patient unnecessarily Allows full story to unfold
- Does not become frustrated with patient's communication ability
- Does not repeat questions patient already answered

3c \_\_\_\_\_

#### d. Speaks and teaches at patient's level of understanding

- Makes an attempt to understand what the patient's level is
- Does not use medical jargon unless it is clear patient understands
- Explains test results and conditions in simple English
- Provides understandable instruction
- Utilizes patient education opportunities well

3d \_\_\_\_\_

### 4. Control of Interview

#### a. Questioning strategies

- Uses open ended-questions often
- Does not group multiple questions in one question
- Does not use many leading questions
- Uses appropriate English words

4a \_\_\_\_\_

#### b. Allows issues to be fully defined and explored

- Lets patient define own problem
- Follows-up on stated problem with exploratory questions
- Gives patient enough time without interrupting

4b \_\_\_\_\_

#### c. Allows venting when appropriate

- Allows patient to express frustrations
- Shows empathy for patient's frustrations and problems

4c \_\_\_\_\_

#### d. Confronts when necessary

- Lets patient know where problems exist
- Confronts patient without challenging them

4d \_\_\_\_\_

#### e. Keeps appropriate tempo

- Lets patient talk without allowing rambling
- Keeps own questions and stories precise and appropriate
- Moves interview and exam as fast as safe and reasonable

4e \_\_\_\_\_

#### f. Shifts topics as necessary

- Moves patient through all presenting concerns
- Explores for hidden or embarrassing concern that is yet unexpressed
- Moves patient off concern once fully explored

4f \_\_\_\_\_

#### g. Follows logical progression

- Topic Transition clear and reasonable
- All patient issues addressed in logical order
- 

4g \_\_\_\_\_

# RAP Evaluation Form Continued

## 5. Closing the Interview

a. Summarizes the issues 5a \_\_\_\_\_

- Goes back over presenting concerns to be sure none were missed
- Explains patient's health problems

b. Establishes a priority list 5b \_\_\_\_\_

- Explains the most serious problems first and in detail
- Lists all the other physician's concerns about the patient

c. Management for each issue clear 5c \_\_\_\_\_

- Describes a plan of treatment for each condition
- Prescribes appropriate drugs and rehabilitation strategy
- Makes appropriate referrals

d. Delineates follow-up plans (both patient's and physician's) 5d \_\_\_\_\_

- Tells the patient what to do before next visit
- Tells the patient who and what to expect with the next visit
- Checks patient's willingness and ability to follow plan

e. Ensures patient understanding (teach-back) 5e \_\_\_\_\_

- Asks the patient to repeat back instructions
- Questions the patient about repeated instructions to insure understanding—be sure they are not just parroting

f. Asks patient if there are any questions, concerns or anything else 5f \_\_\_\_\_

- Asks patient about any concerns they may have forgot about
- Asks patient this question at end of interview even if asked earlier

## 6. Comfort Level

a. Patient 6a \_\_\_\_\_

- The patient seems comfortable talking with the doctor
- The doctor makes an effort to make the patient more comfortable

b. Physician 6b \_\_\_\_\_

- The doctor is professional yet friendly
- The doctor seems at ease with the patient

- Alphabetic scores were converted into numeric scores for analysis and comparisons.

0 = U (Unsatisfactory)

1 = M (Marginal)

2 = S (Satisfactory)

3 = A (Above average)

4 = E (Exemplary)

# Feedback to the Resident

- With panel evaluation form
- Self-evaluation without listening to the audio
- Without panel evaluation form
- Self-evaluation with listening to the audio with transcript



# Question

- We have been providing feedback on patient-physician communication to the residents for 7 years. However, do we know:
  1. What are the most common themes?
  2. What are the most common positive feedback themes?
  3. What are the most common corrective feedback themes?

# Method

- Retrospective review of the feedback data provided by a senior faculty between 2008 and 2013. (n=53)
- Three researchers reviewed the feedback data and coded each feedback items.
- During the analysis, new codes were developed and added to the data collection sheet.
- The data were then compiled to extract
  1. Most recurring feedback items (combined positive and negative)
  2. Positive feedback items only and
  3. Negative feedback items only.

# Findings

Existing Framework	Emerged Themes	Descriptions of Themes	Total feedback N
Share information	Patient education	To educate patient on disease, treatment, or healthier behaviors by providing unsolicited explanation, checking patients' understanding of what is discussed and clarify patient's misunderstanding.	119
	Thoroughness	To get all work done thoroughly without missing anything.	67
Control of interview	Organization/control	To make the interview organized and controlled.	61
Gather information	Questioning strategy	To use appropriate questioning strategies by using open-ended questions rather than leading questions without grouping questions.	60

# Findings (cont.)

- Negative feedback
  - Patient education
  - Thoroughness
  - Management
  - Holistic exploration of patient's problem
- Positive feedback
  - Patient education
  - Empathy
  - Organization/control

# Reception of Feedback by Residents

- Overall, better reception without panel evaluation form; self-evaluation listening to the audio with transcript and a narrative feedback worked best



# Narrative evaluation tool

## Individual Feedback Form

Resident Code/ID Number:

Evaluator's Name:

Today's Date:

### 1. Opening/Intro/Agenda Setting

Full introduction if applicable, Allow the patient to complete his/her opening statement, Elicit the patient's full set of concerns, Set agenda

Strengths & Weaknesses :	Line #
--------------------------	--------

### 2. Gather Information

Open-ended questions, Logical progression, Topic transition, No grouping questions, Summarize information, Active listening

Strengths & Weaknesses :	Line #
--------------------------	--------

### 3. Understand the Patient's Perspectives

Explore contextual factors (e.g. culture, socioeconomic environments), Explore beliefs, concerns, and expectations about health and illness, Acknowledge and respond to the patient's ideas, feelings, and values

Strengths & Weaknesses :	Line #
--------------------------	--------

### 4. Share Information

Use language the patient can understand, Check for understanding, Encourage questions

Strengths & Weaknesses :	Line #
--------------------------	--------

### 5. Patient Education

Promote health behavior change, Teach back

Strengths & Weaknesses :	Line #
--------------------------	--------

### 6. Shared Decision Making

Encourage the patient to participate in decisions to the extent he or she desires, Check the patient's willingness and ability to follow the plan

Strengths & Weaknesses :	Line #
--------------------------	--------

### 7. Closing/Summarization

Summarize and affirm agreement with the plan of action, Establish a priority list about the working diagnosis, Management for each issue clear, Identify and enlist resources and supports, Ask whether the patient has other issues or concerns, Discuss follow-up (e.g., next visit, plan for unexpected outcomes)

Strengths & Weaknesses :	Line #
--------------------------	--------

### 8. Building Relationship/Rapport

Establish/maintain a personal connection, Encourage a partnership between physician and patient, Respect patient's active participation in decision making, Treating the patient with respect, Engages patient, Third party inclusion, Empathetic, Nonjudgemental, Allow venting, Confronts when necessary, Gives compliment-general, Reassure encourages or shows optimism

Strengths & Weaknesses :	Line #
--------------------------	--------

### 9. Control of Interview

Keeps appropriate tempo, Collaborative control

Strengths & Weaknesses :	Line #
--------------------------	--------

### 10. Communication Intelligibility

Speed of talking (not too fast/slow), Interruptions (Overtalks), English (Grammar), Voice modulation, Appropriate responses (non-meaningful OK - Backchannel)

Strengths & Weaknesses :	Line #
--------------------------	--------

# Group Feedback Form

General impression



Three major areas of strengths



Three major areas for improvement



Recommendation/  
follow-up



Quantitative  
score



Group Feedback Form

Resident Code/ID Number:  
Group Name:  
Today's Date:

General Impression (Things the supervising faculty should pay attention to and observe.)

Qualitative comments

Three Major Areas of Strengths

Three Major Areas for Improvement

Recommendations / Follow-up

ACGME Rating: \_\_\_\_

Scale

1. Resident not ready to conduct interview without attending physician in room
2. Resident not ready to fully conduct interview alone. Attending physician needs to intermittently observe resident.
3. Resident is able to complete interview when (s)he has access to the attending physician as needed.
4. Resident is able to interview patient independently. No supervision required.
5. Resident is exemplary. (S)he could teach others how to interview patients.

# This practice made us think

- Prescribed conceptual frameworks provide abstracts of what we are assessing but may miss something that exists in real patient care.
- And we had another research question
  - What constitutes physician-patient communication skills in real patient encounter contexts?
- So, now we are studying
  - What experts refer to when they speak about physicians' communication competence and what is treated as important in a real patient-care context when they evaluate residents' communication skills during patient encounters.

# Methods

- Setting and participants
  - RAP evaluation panels
- Data source
  - One year of audio recording of RAP panel evaluation discussions
- Data analysis
  - Qualitative data analysis using grounded theory

# Linking Medical Education Research and Practice



# References

- Ericsson KA, Krampe RT, Tesch-Romer C. The Role of Deliberate Practice in the Acquisition of Expert Performance. *Psychological Review*. 1993;100(3):363-406.
- Ginsburg S, McIlroy J, Oulanova O, Eva K, Regehr G. Toward authentic clinical evaluation: Pitfalls in the Pursuit of Competency. *Academic Medicine*. 2010;85(5):780–786.
- Han H, Roberts N, & Korte R. Learning in the real place: Medical students’ learning and socialization in clerkships. *Academic Medicine*. 2015;90(2): 231–239.
- Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. *Academic Medicine*. 2010;85(2):220-7.
- Klamen DL et al. Competencies, milestones, and EPAs – Are those who ignore the past condemned to repeat it? *Medical Teacher*. 2016 Jan 25:1-7 [Epub ahead of print]
- Klamen DL. Getting Real: Embracing the Conditions of the Third-Year Clerkship and Reimagining the Curriculum to Enable Deliberate Practice. *Academic Medicine*. 2016;90(10): 1314–1317
- Lave J, Wenger E. *Situated learning: legitimate peripheral participation*. Cambridge, UK: Cambridge University Press; 1991.
- Osman, NY, Walling JL, Mitchell VG, Alexander EK. Length of attending-student and resident-student interactions in the inpatient medicine clerkship. *Teaching and Learning in Medicine*. 2015;27(2):130–137.
- Schwartz DL, Bransford JD. Time for telling. *Cog Inst* 1998; 16(4): 475-522.
- Williams RG, Klamen DL, White CB, et al. Tracking development of clinical reasoning ability across five medical schools using a progress test. *Academic Medicine*. 2011;86: 1148–1154.
- Williams RG, Klamen DL, Markwell SJ, et al. 2014. Variations in Senior Medical Student Diagnostic Justification Ability. *Academic Medicine*. 2014;89(5):790-798.

**Thank you!**

**Heeyoung Han, Ph.D.**

**Assistant Professor  
Department of Medical Education  
Southern Illinois University School of Medicine**

**[hhan@siumed.edu](mailto:hhan@siumed.edu)**

