



OME Journal Club

If Medical Education
Was a Discipline,
She Would Have
Five Core
Competencies

Academic
Performance on First-
Year Medical School
Exams: How Well
Does It Predict Later
Performance on
Knowledge-Based and
Clinical Assessments?

Online Learning
Tools as
Supplements for
Basic and Clinical
Science Education

OME Journal Club

May 17, 2017

+ OME Journal Club -- Intro

15 minute discussion for each article

- Goal: To facilitate faculty member's knowledge about current trends in medical education and literature analysis through group discussions with peers.

■ Learning Objectives

As a result of participation in the OME Journal Club discussions, the faculty will be able to:

- **Increase exposure to evolving concepts in teaching**
- **Utilize critical appraisal skills to review the articles**
- **Promote medical education research in the new concepts**
- **Consider applying new concepts in teaching to course delivery**

+ Critical Appraisal of Medical Education Research Literature

- What is the research question and is it relevant to medical education?
- Does the article add anything new to the field of medical education?
- Was the article's educational method appropriate for the research question?
- How did the author(s) collect the data and report the results?
- Were there any obvious gaps in the author's discussion/conclusion?



If medical education was a discipline, she would have five core competencies

Tucker CR. Med Teach. 18 Jan 2017 Online. Available at

<http://dx.doi.org.ezproxy.bu.edu/10.1080/0142159X.2016.1270435> . Accessed April 10,2017.

Key Points:

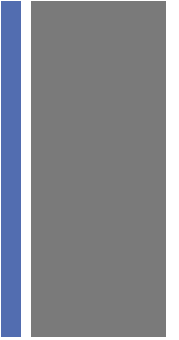
- **Question:** How do you know a medical educator is ready to teach?
- **Method:** Referenced research articles + personal view as Assistant Dean for Faculty Development at Virginia Commonwealth University School of Medicine in Richmond, VA.
- **Discussion:** Dr. Tucker describes 5 components needed for a medical educator—
 1. Facilitating learning
 2. Designing Curriculum and Instruction
 3. Assessing Learning
 4. Scholarship of Teaching and Learning
 5. Educational Leadership and Administration
- **Conclusion:** No model yet exists for medical educators competencies, but these 5 competencies will help medical educators self-assess and seek training.

+ Tucker's 5 Core Competencies

1. **Facilitating Learning** -- use one's knowledge, skills, and abilities to promote student's engaged active development of knowledge in the learning environment
2. **Designing Curriculum and Instruction** -- apply educational theory to the design and evaluation of learning activities
3. **Assessing Learning** -- engage in continuous monitoring and improvement both in the clinic and the classroom
4. **Scholarship of Teaching and Learning** -- promotes the participation of medical educators in developing their innovative practice into scholarship (Boyer's 4 domains: teaching, integration, application, & discovery)
5. **Educational Leadership and Administration** -- describes knowledge, skills, and abilities that medical educators should do to foster collaboration, manage projects, and exhibit integrity

+ Topics to discuss

- Do you agree with Dr. Tucker's 5 core competencies for medical educators?
- What do you need to improve your teaching?
- Can you think of other core competencies that should be added?



Academic Performance on First-Year Medical School Exams: How Well Does It Predict Later Performance on Knowledge-Based and Clinical Assessments?

Krupata E, Pelletier SR and Dienstag JL. Teaching and Learning in Medicine. 2017; 29 (2): 181–187. Available at <http://dx.doi.org/10.1080/10401334.2016.1259109>

Key Points:

■ Research Questions:

1. *To what extent does the frequency of 1st-year students' performance in the bottom quartile on major exams predict their clinical performance?*
2. *What is the predictive power and utility of bottom-quartile performance in comparison to other frequently used indicators?*

■ Methods:

- Target Audience: 321 Medical students 2008-2010 exam scores in %
- Student performance merged with student background info
- Performance grouped by #appearances in bottom quartile

■ Results: 1st year performance + clinical performance highly associated

Some proportion of students who achieve the grade of pass, however, may still be struggling with mastery of basic science concepts.

- ### ■ Conclusions:
- Low-level proficiency, in the form of multiple appearances in the bottom quartile of exams in required preclerkship courses, can manifest itself later not only in high-stakes testing such as Step I and Step IICK but also in measures of clinical performance such as OSCE scores and clerkship grades. Authors suggest that medical schools institute a centrally monitored and coordinated system of formative assessment for all students to identify early those at risk who need coaching.

+ Data

Assessment Data

- 40% midterm exam score
- 60% final exam score

- USMLE Step 1
- USMLE Step 2CK

- HMS Comprehensive Exam score (9 station OSCE)

- Summary index of student's core clerkship grades

Variables

- Total MCAT score
- Undergraduate GPA
- Pre-matriculation rank (based on mean score by HMS Committee on Admissions)
- Selectivity of undergraduate school attended
- Gender
- Underrepresented in medicine status (Black, Mexican American, American Indian, Alaska Native, Native Hawaiian, or mainland Puerto Rican)
- father's and mother's education

+ Bottom Quartile Levels

Categories

1. No appearance
2. 1-2 appearances
3. 3+ appearances

Regression Analysis

- **Predictive power**- the predictor variable accounting for the largest amount of unique variance in the outcome appears first, followed by as many of the other predictors that account for significant amounts of residual variance in the order of their strength
- **Predictive utility** -- 8 preadmission variables entered first, and then, bottom-quartile performance last

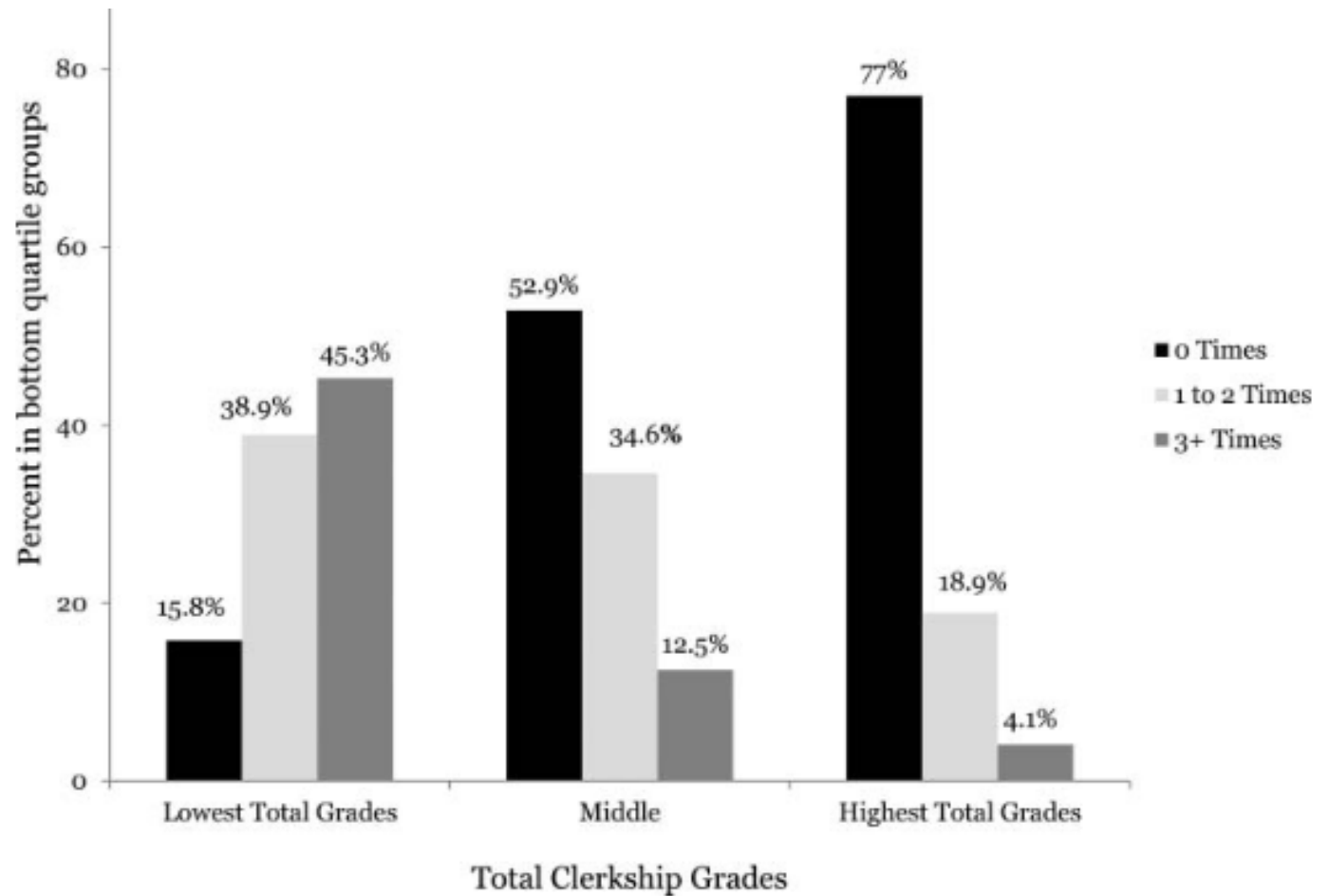


Figure 2. Relationship between clerkship grades and number of appearances in the bottom quartile.

+ Topics to discuss

- What, if any, is missing from this article? Was the demographic data on the students important to this study?
- Do you agree with the authors coordinated system of formative assessment idea?
- Do you believe that the steps described in this article are reproducible here?



Online Learning Tools as Supplements for Basic and Clinical Science Education.

Ellman MS and Schwartz ML. *Journal of Medical Education and Curricular Development* 2016:3 109–114 doi:10.4137/JMECD.S18933.

Key Points:

- **Question:** *What is the diversity of online learning tools and the range of applications for these tools in classroom and bedside learning?*
- **Method:**
 - Defines online learning
 - Describes different modalities and their advantages and challenges
 - Focuses on Faculty training
 - Provides Future directions
- **Discussion:** Medical education research questions need not compare traditional teaching with supplemental online learning, but should investigate **which online modality** to use with **what content** and **how to integrate it**
- **Conclusion:** Online learning can be an effective tool to make the connections between curricular components as schools work toward more robust vertical and horizontal curricular integration.

Online learning is computer-based instruction that students typically access over the Internet from a desktop or mobile device, outside of the physical classroom or other traditional learning environments.

Advantages

- Suitable for current learners who like to titrate their time
- Remedial or deep dives resource links
- Evergreen (core content) effective before in-class application exercises
- Clinical skills viewed online and practiced before patient encounter
- Exposure to variety of patient cases
- Trigger tapes (simulated patient interviews, giving bad news, taking a sexual history) used to train communication skills
- Branching, interactive online programs allow students to practice in a safe environment

Disadvantages

- Viewing requirement of online materials is too lengthy before in-class sessions
- Video format not effective for learners who prefer print material
- Students do not comply with required online viewing before class
- Faculty and curriculum time limits influences content depth
- Misses face-to-face interactions that provide inspiration and modeling

Faculty Training



Finding Time



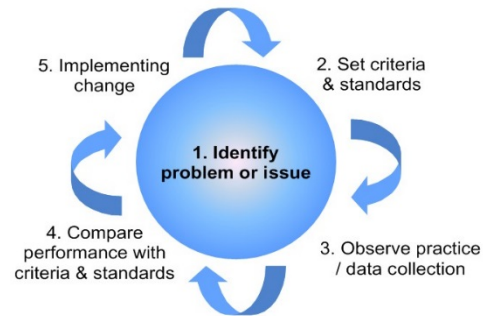
Adding New Tech Skills



Selecting an effective strategy



Desiring Production Perfection



Setting Standards of Practice for Curriculum



Teaching Learners to Engage in Online Materials

+ Topics to Discuss

- What was the key point for you in this article?
- Did the authors adequately present the advantages and disadvantages of online learning tools?
- Do you agree with the authors about faculty training in online learning tools?



Thank you for participating!

This is the last OME Journal Club meeting for 2016-2017

Any questions? Please contact

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