MPOG and Education: A Bright Future

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Goals & Objectives

Review important basics of education and how that may have an impact on MPOG as a platform for education

Outline how MPOG and education fit together: current and future

How can MPOG IMPROVE education in the future: education research

Education Basics for Adult Learners

We are not computer hard drives, in which information is stored to be readily (easily) retrieved.

We forget, all the time.

Minds possess the capability to remember and recall

- Critically important in adult learning and education

- Forgetting does not undo learning from the past

- Forgetting may focus the mind on remembering and as a result improve learning

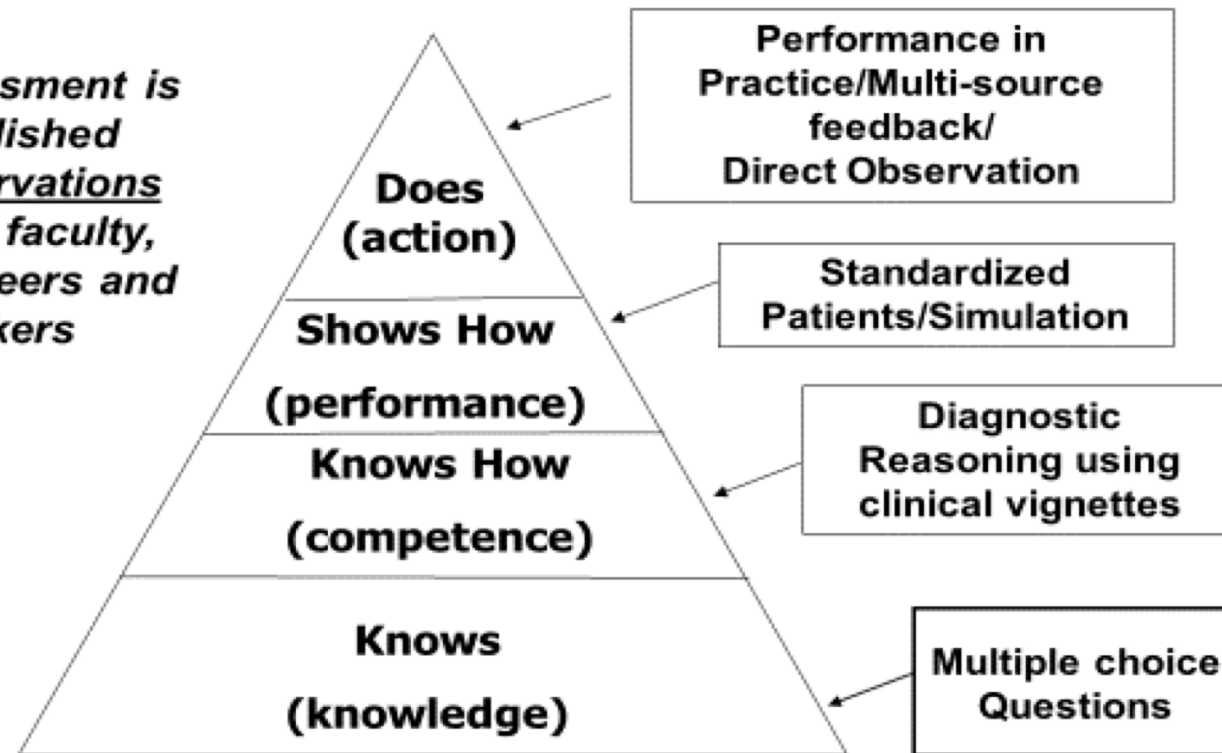Ultimate goal: improve learning opportunities & increase the focus on education, clinical care and patient safety

Can practice-based metrics (MPOG, ASPIRE) help us move learners from the base of the pyramid to the top?
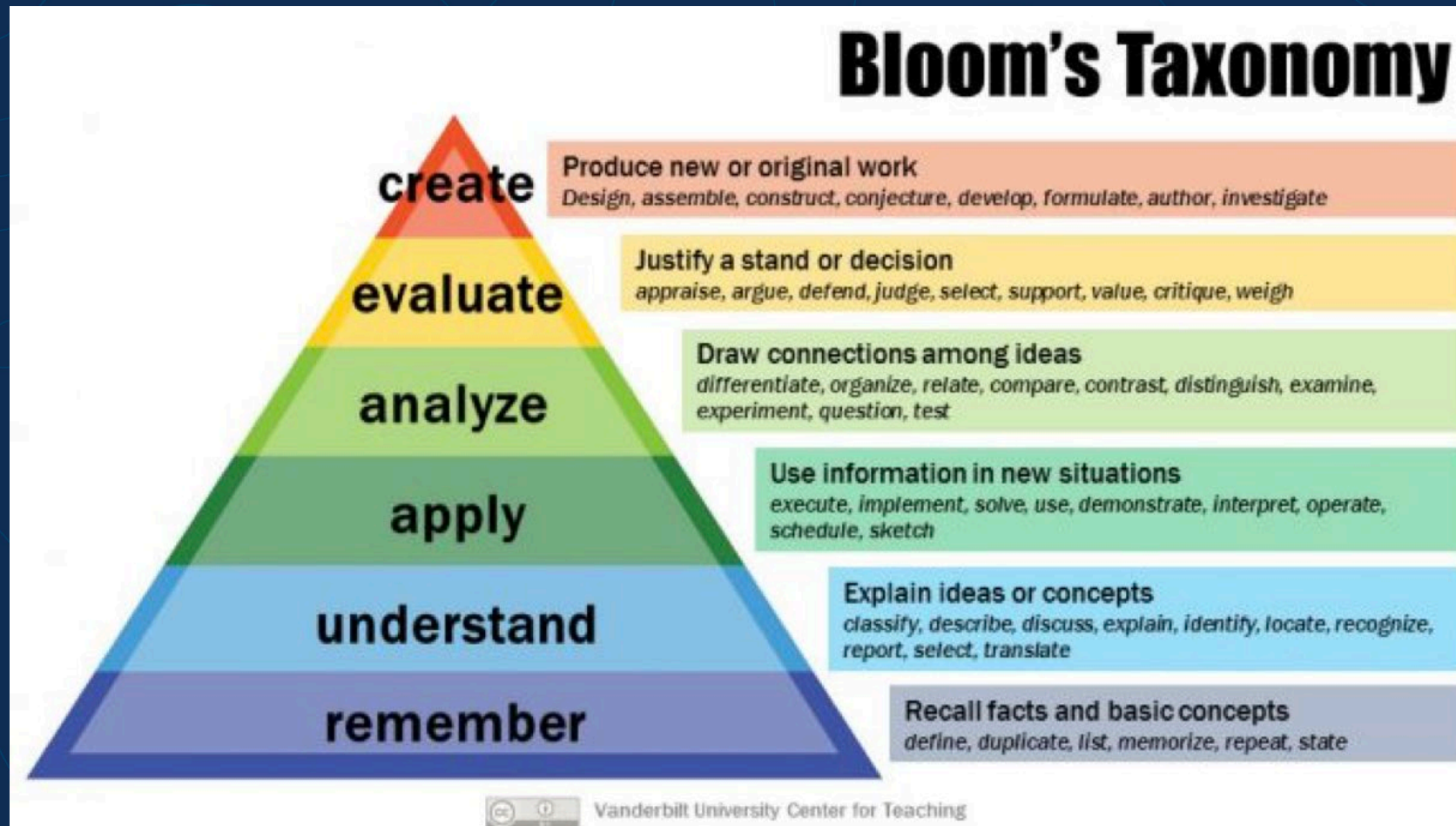
ACGME Guidebook for Assessment

Assessing for the Desired Outcome

Work-based assessment is mostly accomplished through the observations and questions of faculty, team members, peers and other co-workers

Does (action) → Performance in Practice/Multi-source feedback/ Direct Observation

Shows How (performance) → Standardized Patients/Simulation

Knows How (competence) → Diagnostic Reasoning using clinical vignettes

Knows (knowledge) → Multiple choice Questions

More food for thought…Generational Learning

Generation	Birth Year	Current Age	Defining Events	Characteristics	Tech Use/Learning Preferences
Baby Boomer	1946-64	59-77	Television, personal computer	Live to work, conservative	Interpersonal skills and relationships; lectures good; tech use as adults
Generation X	1965-80	43-58	HIV/AIDs, Gulf War	Work to live, rely on self	Tech use in college (email in college; computer labs); independent, structured environment, lecture + small group activities
Millennials (Gen Y)	1981-96	27-42	Internet	Work-life blend, social consciousness	Entered college with laptop, "digital natives", team-oriented learners, "google" to learn
Generation Z (Gen 2020)	1997-present	<27	Social Media Mobile technology	Hyperconnected, yet self-privacy important	Technology early childhood, constant stimulation, SHORT attention span (no lectures), REQUIRE engagement

Imagine it is 2030…or 2035

Resident at University of the Future Anesthesiology Residency Program

Faculty member in the Department of Anesthesiology at University of the Future

Community anesthesiology attending at Future General Hospital

What does education look like? What is needed? How has anesthesiology changed? How does MPOG fit in?

MPOG & Education: First Order

Verification of ACGME Case Logs

Identification of areas for index or important case types/experiences globally for residency programs and for individual residents

Procedure	Minimum Number
Vaginal delivery	40
Cesarean section	20
Total pediatric patients younger than 12 years of age undergoing surgery or other procedures, including:	100
Pediatric patients younger than 3 years of age	20
Pediatric patients younger than 3 months of age	5
Cardiac surgery	20
Bypass cardiac procedures (effective 2017/2018)	10
Open or endovascular procedures on major vessels	20
Intrathoracic Non-Cardiac	20
Intracerebral procedures	20
Total Intracerebral Open	11
Epidural anesthetics or epidural catheters	40
Spinal anesthetics	40
Complex, life-threatening injuries	20
Surgical procedures utilizing peripheral nerve blocks	40
Management of acute, chronic, or cancer-related pain	20

Airway Management Techniques

☐ Supraglottic Airway

Laryngoscope
☐ Direct   ☐ Indirect

Tracheal Intubation
☐ Oral   ☐ Nasal

Lung Isolation
☐ Bronchial blocker   ☐ DLT

Other (airway management)
☐ Jet ventilation   ☐ Mask

MPOG & Education: Second Order (Reactive)

MPOG is intelligent: knows how we are performing; quality metrics linked

ABA is intelligent: knows how we are performing; MOC and MOCA Minute (ITE, BASIC/ADVANCED, etc)

Imagine together, each can react to 'weaknesses' or areas for improvement

- **Monthly ASPIRE report: receive simultaneous MOCA Minute questions targeted to low compliance areas**
    - For GME learners, this could be a different set of ?s

- **Link to other educational resources (podcasts, articles, etc)**
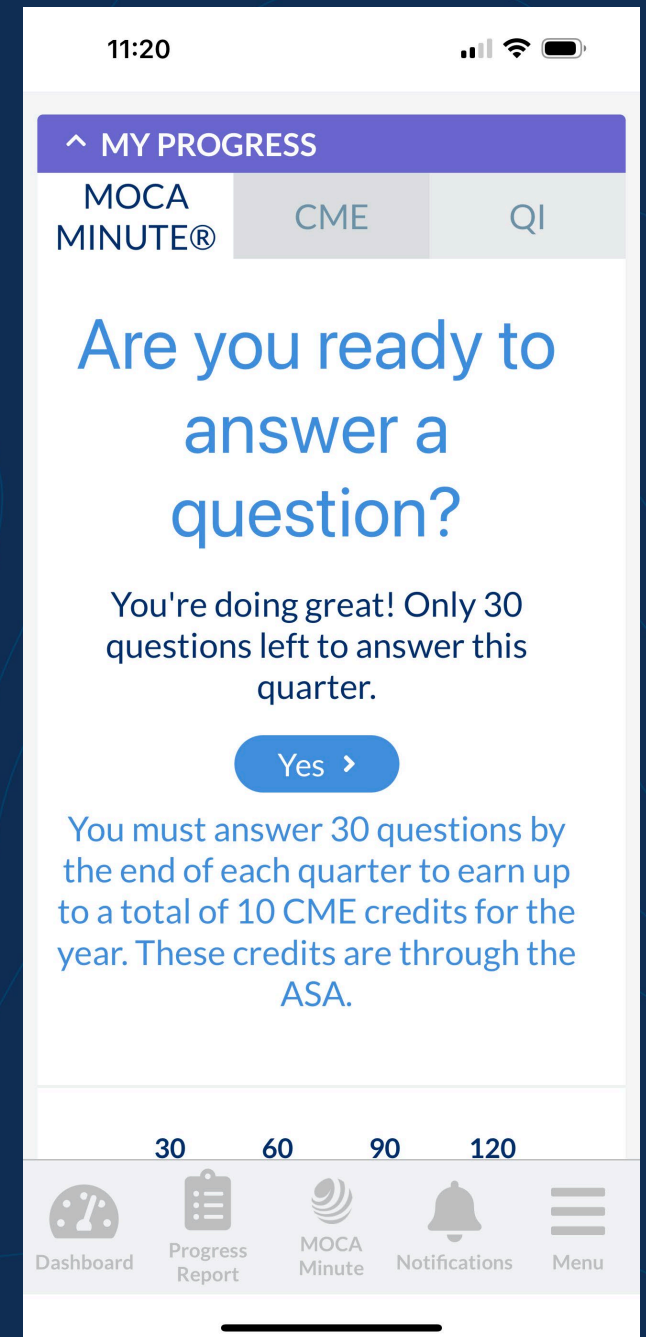
MPOG & Education: Third Order (Proactive)

MPOG knows, in advance, resident & faculty day-to-day clinical assignment

- **Integrates with other platforms (ABA MOCA Minute, OpenAnesthesia, Anesthesia Toolbox, etc)**

- **'Just in Time', bite-size learning resources sent prior to DOS to improve patient care, quality metrics (ie. MAP goals), knowledge, and anesthetic management**
  - Awakens dormant skills and knowledge (remembering after forgetting)

- **Residents prospectively given data about what case types are needed (if the next day's case is 'high yield' or may fulfill something that they are deficient in (massive transfusion)**
  - Content delivered is specific to level of training and the patient's problems

- **Faculty proactively given data as to which metrics are important for the day's cases**

- **Helps both resident and faculty prepare for the day logistically, clinically and educationally**

Not imagination…but real life

Starting a new role, in a new institution

Cardiac & liver anesthesiologist ➡ Multi-specialty anesthesiologist doing a neurosurgical AVM resection my first week

What did I do? Call a local expert…

Imagine that MPOG can take that role

Cerebral Autoregulation

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Last updated: 01/03/2023

Key Points

- Cerebral autoregulation is the ability to maintain a constant cerebral blood flow (CBF) even with changes in cerebral perfusion pressure (CPP).

- Autoregulation of CBF consists of interactions among myogenic, neurogenic, metabolic, and endothelial mechanisms.

- Physiologic, pathologic, and anesthetic conditions can cause increases or decreases in CBF.

	Intracranial aneurysms	Moyamoya disease
Basic defect	A weakness in the wall of an intracranial artery results in a localized dilation of ballooning of the vessel Usually occur at branch points	Progressive occlusion of the intracranial internal carotid arteries (and often the MCA and ACA) Puff of smoke
Epidemiology	True incidence unknown but responsible for 85% of SAH (28,000/year in USA) • 6-16/100,000 (~1/30,000 in USA) • < 60 years old (mean 50) • Female > Male • Black > White	1/200,000 in US (higher in Asian countries) • <15 years old (mean 7) • Female > Male • Asians > all others
Associations	Fibromuscular dysplasia Polycystic kidney disease Others: • Tobacco abuse • Hypertension • Alcohol abuse	Cause really unknown: increase in cervical sympathetic tone • Neurofibromatosis • Down's syndrome • Grave's disease • Sickle cell disease • History of congenital heart disease repair 50% no association
Presentation	"Worst headache of my life"	Childhood: • Acute, transient hemiparesis or numbness often precipitated by exercise or hyperventilation Adults: • Acute bleed (especially in the thalamus or basal ganglia)

What are the barriers to this aspirational state?

Technology exists to allow MPOG to be a platform for education:

- ChatGPT/AI can be queried (and verified) for key points (MANY other resources exist for this as well)

- MOCA Minute is robust; other learning platforms are also robust and have existed > 10 years

- EHRs readily integrate with MPOG and have checklists embedded

Our Goal as Educators: The Holy Grail

Create educational interventions that translate to changes in practice

Will directing educational techniques and resources to struggling physicians and practitioners help to improve NOT just knowledge but also improve the quality of care provided to patients

Can we connect education and practice?

FAER-ABA Research in Education Grant

Primary Hypothesis:

- **Demonstrate that annual MOCA Minute composite performance (% correct) is associated with composite ASPIRE clinical measure performance**

Secondary Hypotheses:

- **Completion of 120 MOCA Minute questions is associated with ASPIRE measure performance**

- **MOCA Minute content-level aggregate performance is associated with thematically-linked ASPIRE measures**

ASPIRE is the quality improvement arm of the Multicenter Perioperative Outcomes Group

Thought Provoking Issues/Questions

1. What are the barriers in getting from current to the aspirational state?

2. How do we encourage engagement with educational resources and MPOG (much of this still requires internal motivation)?

3. Is there data available that shows improvement in future metrics by showing practitioners their current metrics/noncompliance?

4. What is the impact of the in-room provider vs. supervising provider in improving metrics and in providing reactive/proactive resources?

5. This is the tip of the iceberg…many more ideas and interactions exist (mentioned generational issues, ?competency-based training)

Thought Provoking Issues/Questions

6. What are the resources and funding for education initiatives using the MPOG platform?

7. Does creating a formal education arm of MPOG fit the mission?

- Governance, strategic planning, multi-institutional impacts

8. What are competitor platforms to MPOG to delivering on the promise?

- Ease of use, cost