

Competency Based Education for the Health Professions: Through the Looking Glass

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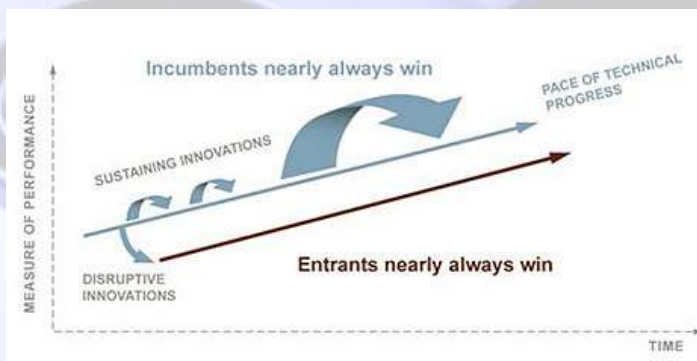
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Disruptive Innovation

- Process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.



<http://www.claytonchristensen.com/key-concepts/>

Certainly an innovation--



Source: Istock

- Putting new ideas into practice or using existing ideas in new ways
 - (Melnik & Davidson, 2009)

CONFERENCE RECOMMENDATIONS

JUNE 14–17, 2017 | ATLANTA, GA



Achieving Competency-Based, Time-Variable Health Professions Education

Recommendations from the Macy Foundation Conference

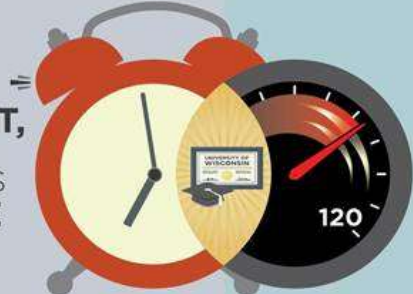
Recommendations:

- *System Redesign*
- *Creating a Continuum of Education, Training, and Practice*
- *Implement a Robust Program of Assessment*
- *Enabling Technologies*
- *Outcomes Evaluation*

THE
Higher Education
MINDSHIFT

CREDIT-HOUR <small>FOCUS ON TEACHING</small>	COMPETENCY-BASED <small>FOCUS ON LEARNING</small>
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TIME IS
CONSTANT,
BUT
LEARNING IS
VARIABLE



TIME IS
VARIABLE,
BUT
LEARNING IS
CONSTANT

<https://er.educause.edu/articles/2014/11/flexible-option-a-directassessment-competencybased-education-model>

Competency-Based Education



Teaching (process) vs Learning (outcome)

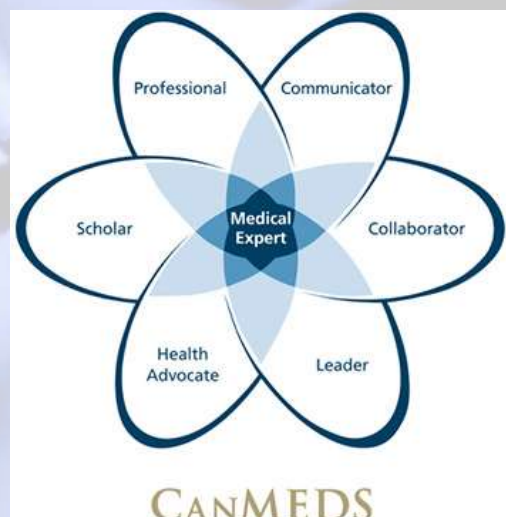
In Health Professions Education

- Promise to employers and public
 - Graduates are capable
 - Graduates will deliver quality safe patient care
 - They are vs they should be
- Accreditation starting to move from monitoring of process (content/time) to monitoring of outcomes

Competency Frameworks in Medicine

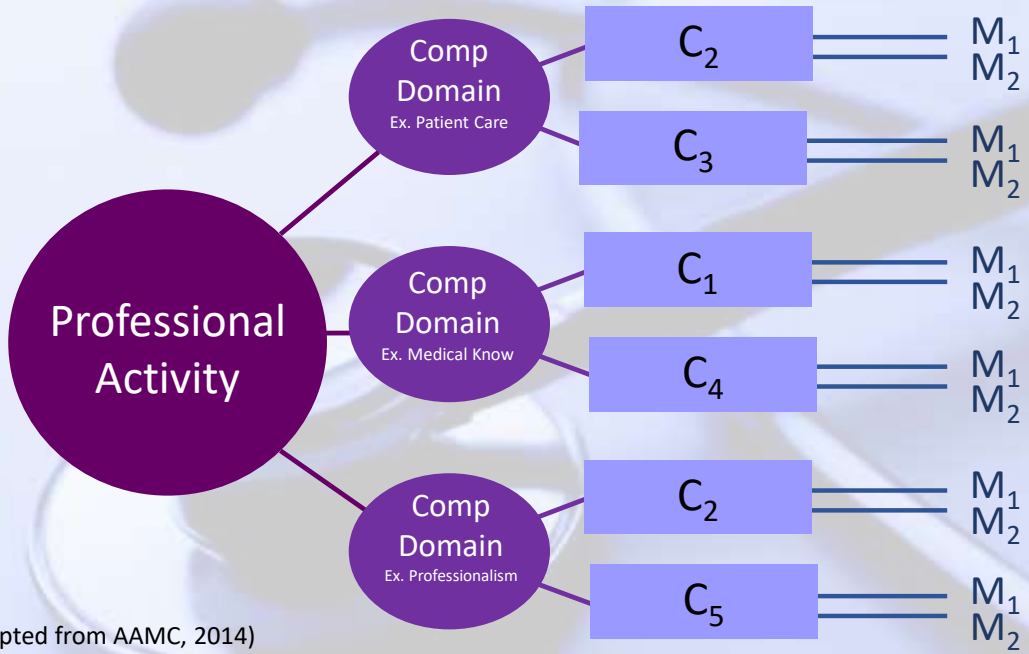
ACGME (US)

- ▶ Patient care
- ▶ Medical knowledge
- ▶ Practice based learning and improvement
- ▶ Interpersonal and communication skills
- ▶ Professionalism
- ▶ Systems-based practice



Milestones

- Developmental roadmap for each competency
- Benchmarks for
 - Progression of knowledge, skills, attitudes
 - Expectations, assessment and feedback
- Pediatric version with UME, GME, & MOC milestones



(Adapted from AAMC, 2014)

Risk of Reductionism



- Individual competencies
 - Do not add up to practice
 - Do not ensure integration and application
 - Do not capture outcome of caring for patients
- Objective assessment of competencies
 - Measuring what is easy vs what is relevant
 - Capabilities may not translate across contexts

Determining Competence



Competence

- Drives safely during bad weather, avoids accidents, no traffic tickets

Competence entails more than the possession of knowledge, skills and attitudes; it requires the ability to apply these in the clinical environment to achieve optimal results.

ten Cate et al., *Medical Teacher* 2010

Current Approach

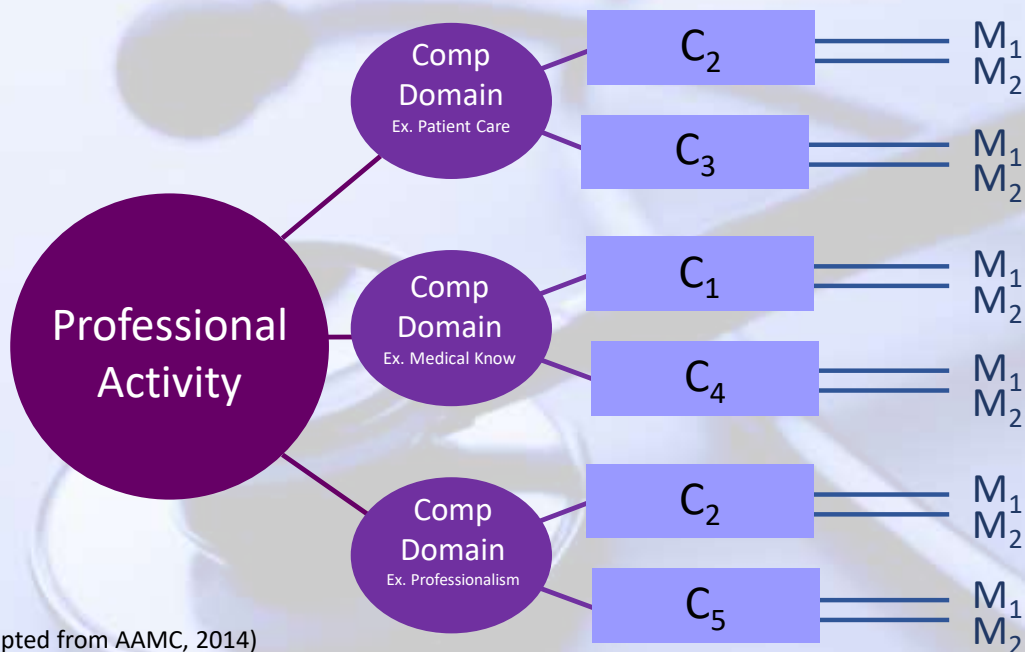
- Define competencies
 - Knows traffic rules
 - Can accelerate and brake smoothly
 - Can approach intersection and turn left
- Ensure competent drivers
 - Pass driver's education classes
 - Pass driver's license test (written + driving)



Criteria for Choosing a Nurse



- Years of training?
- Passed all written exams?
- Grades and scores on skills exams?
- Follows protocols and guidelines?
- Can care for patients/manage cases in best way possible?



(Adapted from AAMC, 2014)

What If we...



Professional
Activity

- Identify important clinical activities
 - Concrete professional activities
 - Allows deliberate “decisions of entrustment”
 - Portfolio of mastered EPAs documents full competence

Entrustable Professional Activities

Is a unit of professional practice that can be entrusted to a sufficiently competent learner or professional

ten Cate et al. *Medical Teacher* 2015

- Framework for working with competencies
- Grounded in everyday workplace tasks

Examples from Medicine

GME

- Manage care of patients with chronic disease (internal medicine)
- Care for a well newborn (pediatrics)
- Care of complicated pregnancy (obstetrics/gynecology)

UME

- Gather a history and perform a physical examination
- Recommend and interpret common diagnostic and screening tests
- Recognize a patient requiring urgent or emergent care and initiate evaluation and management

Elaborated EPA Description

1. EPA title
2. Specifications and limitations
3. Most relevant competency domains
4. Required knowledge, skills, attitudes
5. Sources of information to assess progress (basis of formal entrustment)
6. Levels of entrustment/supervision at which level of training (implications of entrustment)
7. Expiration date (optional)

Why All the Excitement?



Reason #1



*Holistic Approach
to Competencies*

Reason #2



Links Supervision/Entrustment to Assessment

Assessment using EPA Framework

- Aligns with supervision decisions faculty already make every day
- Results in meaningful advancement in learner responsibility



Entrustment/ Supervision Scales

GME Entrustment Scale	
1	Not allowed to practice EPA
2	Allowed to practice under proactive full supervision
3	Allowed to practice under reactive supervision
4	Allowed to practice EPA unsupervised
5	Allowed to supervise others in practice of EPA

ten Cate et al. *Medical Teacher* 2010

Adjustment for UME

GME Scale		UME Scale
1	Not allowed to practice	1a. Not allowed to observe 1b. Allowed to observe
2	Allowed to practice under proactive full supervision	2a. As coactivity with supervisor 2b. With supervisor in room ready to step in as needed
3	Allowed to practice under reactive supervision	3a. With supervisor immediately available, all findings double checked 3b. With supervisor immediately available, key findings double checked 3c. With supervisor distantly available, findings reviewed

Chen et al. *Academic Medicine* 2015

Reason #3



Highlights Consequences of Assessment

Entrustment Decisions

- Places patient safety front and center
- Takes into account trustworthiness
- Looks forwards instead of backwards



Readiness for Entrustment

- Based on
 - Knowledge and skill
 - Conscientiousness/consistency
 - Truthfulness/benevolence
 - Knowing one's limits/
willingness to ask for help
- Ability
 - Reliability
 - Integrity
 - Humility

Kennedy et al. *Academic Medicine* 2008;
ten Cate et al *Academic Medicine* 2016

Caroline, David, & Amy

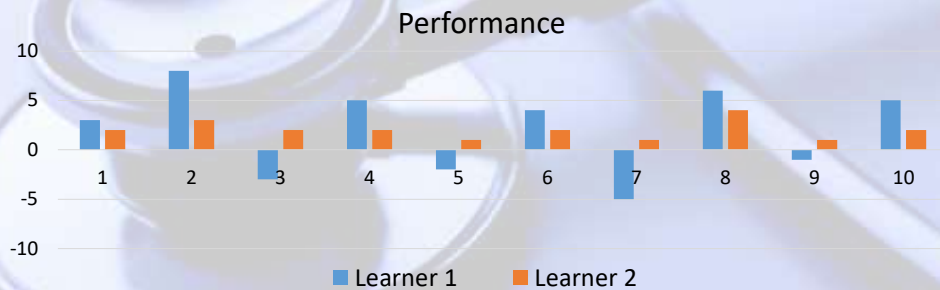


- David
 - expected knowledge/skill
 - identifies gaps
 - asks questions
- Amy
 - impressive knowledge/skill
 - does not ask for help
 - did not report key finding

Future Performance

“How big is the risk of this learner performing, seriously below standard in a future case?”
“What is the average competence of this learner?”

Schuwirth & van der Vleuten, 2006



True Purpose of CBE

Deliver practitioners who are capable of

- coping with
- providing safe quality care in the context of unpredictable requirements of practice at any time during practice

(Adapted from ten Cate, 2018)

CBE – Where are We?

Fixed Time, Variable Outcome

Fixed Outcome

Fixed Outcome, Time Variable

Competency-Based Time Variable (CBTV) Education

- Learners progress by demonstrating competencies
- Assessment/feedback allow coached progression
- Educational experiences are tailored to needs of the learner
- Time is not a proxy for competence but a resource
 - Allows attention to areas of need or interest
 - Allows goal acquisition with variable progression

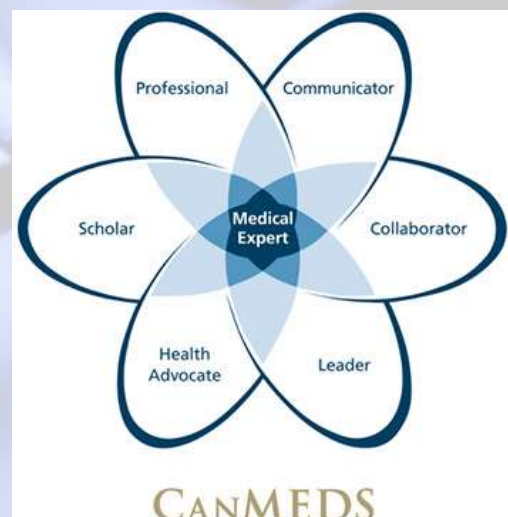
Can It Be Done? Examples from Medicine

- Netherlands
 - Variable entry and length of residency training
 - Critical care EPAs and anesthesia residency training
- Canada
 - Family medicine residency program in CBE model
 - All GME programs to become competency based time variable
- AAMC UME/GME pilot in pediatrics
 - Transition to residency based on entrustment for 13 EPAs
 - U of Minnesota and U of Utah advanced students at variable times

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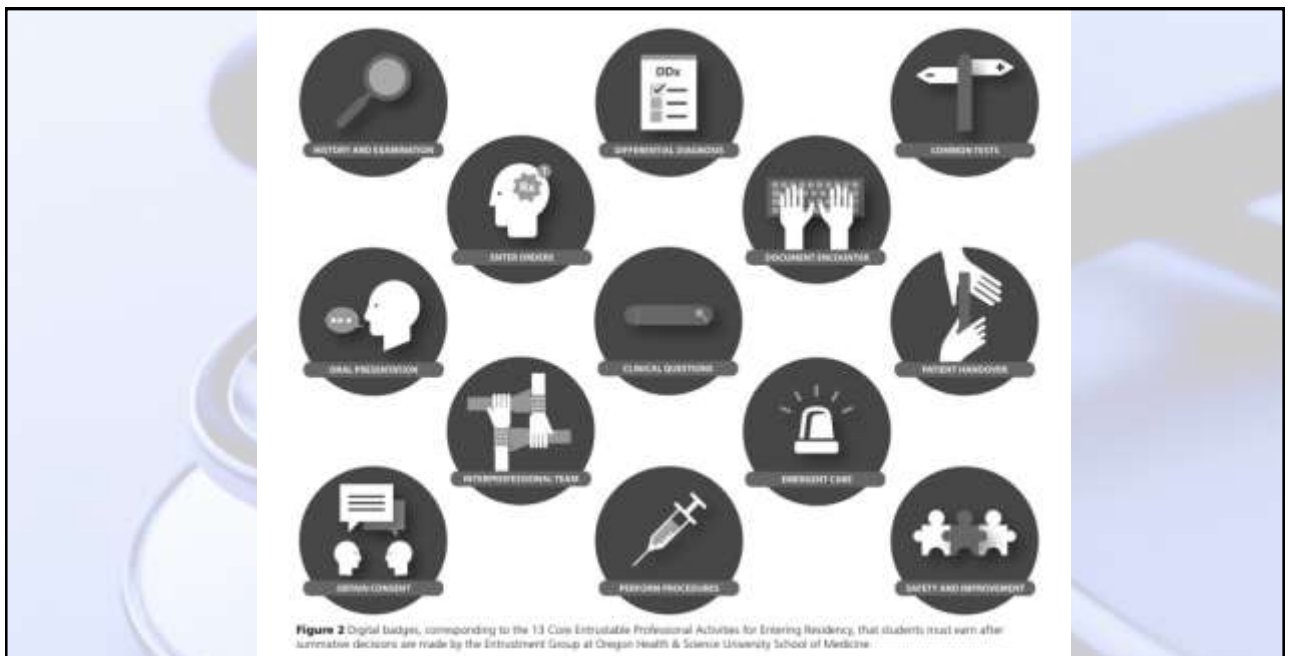
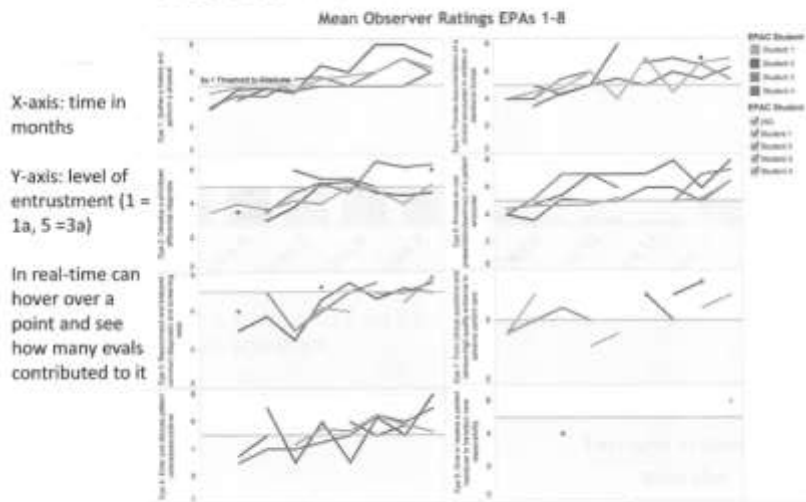


Figure 2 Digital badges, corresponding to the 13 Core Entrustable Professional Activities for Entering Residency, that students must earn after summative decisions are made by the Entrustment Group at Oregon Health & Science University School of Medicine.

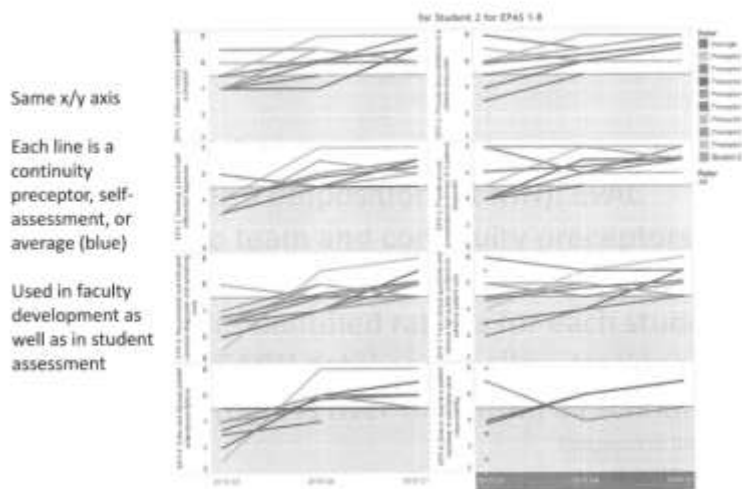
Mejicano, G.C. & Bumsted, T.N.(2018). Describing the journey and lessons learned implementing a competency-based, time variable undergraduate medical curriculum. *Academic Medicine*, 93 (3), S42-S48.

Assessment: Dashboards



Powell, D. (2018). Competency based education across the UGE-GME continuum: the EPAC program. IAMSE Winter Webinar Series, 2-8-18.

Assessment: Summative



Powell, D. (2018). Competency based education across the UGE-GME continuum: the EPAC program. IAMSE Winter Webinar Series, 2-8-18.

KU School of Nursing's Innovative Clinical Design

NEW Essentials Accent the Baccalaureate Generalist Nurse

- The new Essentials of Baccalaureate Education for Professional Nursing Practice have reaffirmed the guidelines for educating baccalaureate generalist nurses. KU School of Nursing revised its map of learning to more clearly address the role of a baccalaureate generalist nurse:
 - provider of care,
 - designer and administrator of care, and
 - advocate of a profession.
- The new Essentials also emphasize evidenced based practice, patient centered care, quality improvement, safety, informatics/technology, teamwork and collaboration.

Competency-based Clinical Model

- The Kansas University School of Nursing changed its clinical model to reflect a **competency** Approach. This means that in past students must meet each competency within the (statutory) experience.
- For each clinical course, students will be expected to demonstrate competencies in each area of our Clinical Development Model (Fig. 1).
- Eight major areas of competence are defined in this model. Six of these major areas of competence are the same as those identified by the Council on Accredited based practice, patient centered care, quality improvement, safety, informatics/technology, teamwork and collaboration. Additional competencies in the KU School of Nursing model are systems based practice and professionalism.
- This model begins with junior nursing students (JNS) in the fall of 2011.

Clinical Development Model



Figure 1: KU SON Clinical Development Model

Implementing the Clinical Development Model

- The clinical model will be implemented where students will be assigned to either direct patient care (DPC) or focused learning activities (FLA).
- The direct patient care (DPC) is where the students will be assigned the care of patients at the end to achieve clinical competencies.
- The Focused Learning Activities (FLA) will diversify the student's experience in order to capture other learning opportunities. The activities regarding direct clinical practice help the students gain crucial clinical nursing care "bedside". The (FLA) are designed to keep students engaged in achieving the learning objectives and enhancing their care. The students may be processing assigned patients, observing nursing actions, or maintaining patient charts in order to complete specific competencies, such as safety, quality improvement or evidence based practice.



Clinical Development Model



Figure 1: KU SON Clinical Development Model

Seven years later:

26 pages

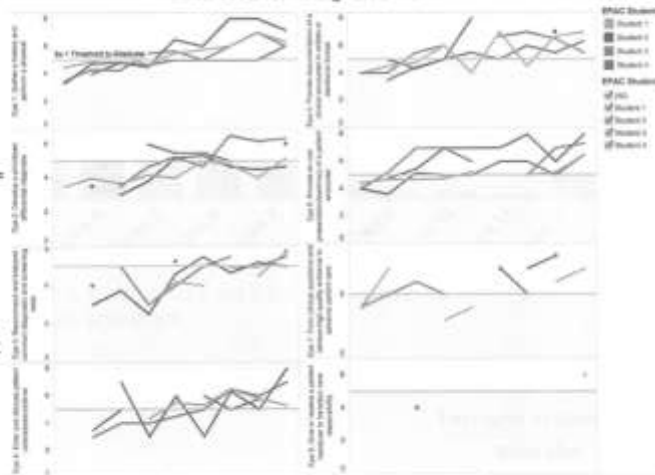
Assessment: Dashboards

Mean Observer Ratings EPAs 1-8

X-axis: time in months

Y-axis: level of entrustment (1 = 1a, 5 = 3a)

In real-time can hover over a point and see how many evals contributed to it



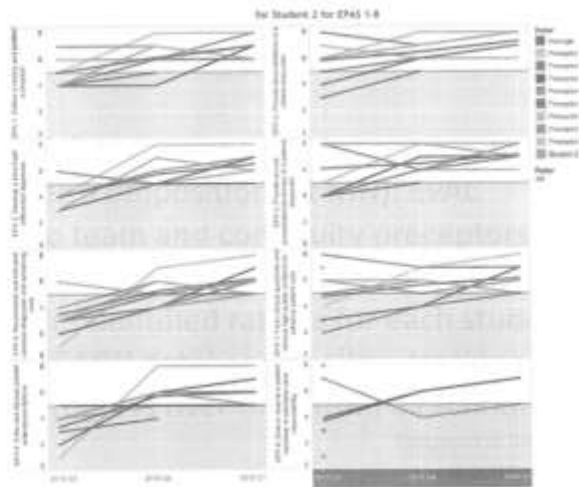
Powell, D. (2018). Competency based education across the UGE-GME continuum: the EPAC program. IAMSE Winter Webinar Series, 2-8-18.

Assessment: Summative

Same x/y axis

Each line is a continuity preceptor, self-assessment, or average (blue)

Used in faculty development as well as in student assessment



Powell, D. (2018). Competency based education across the UGE-GME continuum: the EPAC program. IAMSE Winter Webinar Series, 2-8-18.

What about Nursing EPAs?

- Baccalaureate, Masters, Doctoral
- Matching with other practice disciplines
- 10-20 (ten Cate)
- Delphi process
- Align with *Essentials*



How could the **Time Variable component** become more meaningful?



Test Before Transcript





What does Competency-Based Nursing Education 2.0 look like?

Evidence from Learning Science:

- A data infrastructure to identify students who are at risk of failure
- Block scheduling
- Learning cohorts who take courses together
- Structured curricular pathways
- Academic and life coaches
- Frequent diagnostic testing and performance based assessments

Mintz, S. (March 3, 2018). *Texas's Big Bet on the Future of Higher Education. Inside Higher Ed.* (adapted)

CONFERENCE
RECOMMENDATIONS

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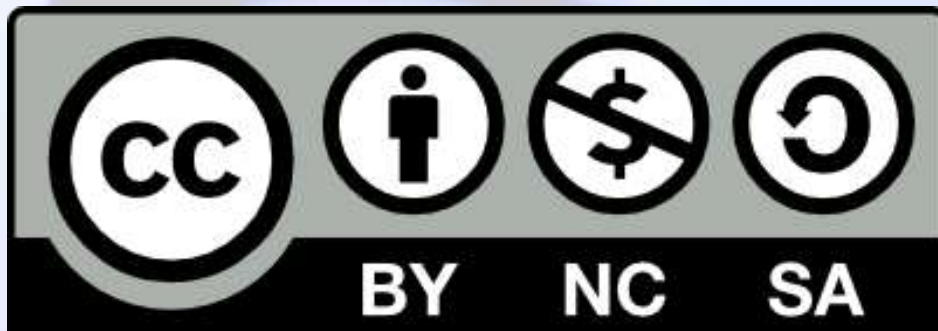
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A photograph of a piece of lined paper with the word 'Questions?' written in large, black, cursive handwriting. A black pen is visible at the bottom right, having just finished writing the question mark. The paper is placed on a light-colored surface, possibly a desk, with a blurred background.

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