ENGAGE

Globally, the need for healthcare professionals remains a substantive challenge. According to the recent estimates, thousands of vital healthcare positions, ranging from nurses to physicians to lab techniques, will remain unfilled over the next decade.

The problem is modern medical schools, cannot meet the demands of the 21st century. As with most technologies, education began with a period of slow development, went through a period of rapidly increasing productivity, and has reached its upper limit in productivity.

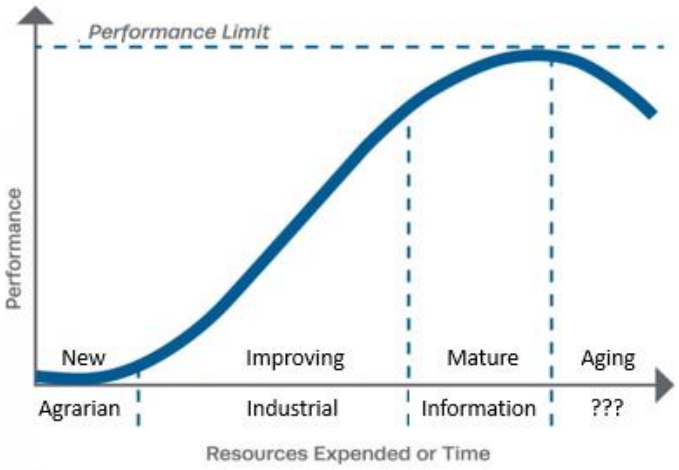

Figure 1. Maturation of educational productivity overtime

While other sectors of society have leveraged emerging technologies to realize significant advances in performance, as depicted in Table 1, medical education remains mired in Industrial Age models of schooling, like other institutes of higher education. The addition of technology to existing practices have failed to yield significant and lasting improvements.

Table 1. Comparison of sectors across ages

Sector	Agrarian	Industrial	Information
Transportation:	Horse	Trains & Cars	Airplanes
Communications:	Mail	Telephone	Computers
Business:	Family	Bureaucracy	Teams
Medicine:	Crafted	Science	Evidence
Education:	One-room Schoolhouse	Conventional Schools	???

Table 2. Comparison of EBM and EBME processes

EBM	EBME
1. Assess Patient's Needs	Assess Educational Needs
2. Ask (PICO) Questions	Ask (LICO) Questions
3. Acquire Evidence	Acquire Evidence
4. Appraise Evidence	Appraise Evidence
5. Apply Evidence	Apply Evidence

In Webinar I, we laid the groundwork for transforming the current realities of emergency remote teaching to highly effective online learning by relating the practice of EBME with familiar EBM correlates.

In Webinar II, we compared teacher-directed methods to student-centered learning, and discussed how active, instructional strategies may facilitate the development of higher order thinking and clinical reasoning skills. We also discussed how learning platforms may be used to facilitate blended learning and "flip" education to enhance both teacher and student performance.

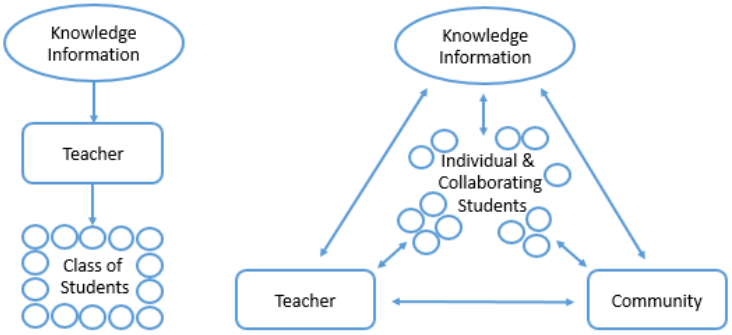

Figure 2. A comparison of teacher-directed vs. students-centered learning environments

For Webinar III, we seek to demonstrate active, student-centered learning (SCL) in a flipped environment to explore potential solutions for re-envisioning medical education. As with all active experiences, what you derive from Webinar III will be directly proportional to what you put in. The more time you put into exploring resources ***before the Webinar***, the greater your depth and breadth of understanding will be. ***During the Webinar***, you may take either an active role in discussing your vision of medical education in the future and sharing what you learned from your exploration OR you may choose to observe and listen to others. Either way, we believe you will gain valuable insights into re-envisioning medical education to meet the needs of the 2st Century.

EXPLORE (before the Webinar)

Based on your time and interest, consider watching…

- Daniel Wozniczka's 2017 TEDx NorthwesternU talk about Millennials in Medicine: Doctors of the Future (16:21).
- Peter Horneffer's 2019 TEDxHHL talk about The Future of Medical Education (17:02).
- Harvard Medical School's perspective on, The Future is Now: Medical Education for the 21st Century (56:22).

Scan and read about specific areas of interest from open access eBooks on…

- Teaching, Technology, and Teacher Education during the COVID-19 Pandemic edited by Ferdig et al. (2020) that includes 133 chapters on pedagogy, collaboration, field-experiences, preservice education, professional development, digital tools, and equity.
- Modernizing Learning edited by Walcutt and Schatz (2019) with over 85 contributors discussing the foundations of distributed and life-long learning, technology, learning science, and organizational design (just click "download full text")

After you have spent time exploring relevant resources, please…

- Let us know if you have any questions regarding the upcoming Webinar or if you have any resources on the future of medical education that you think would be of great interest and would add to the conversation by emailing thiemo.weiser@lecturio.com.

- Reflect on what you've read or watched and jot down (a) 1-3 of the most important changes you think need to be made to medical education to meet the global challenges of healthcare in the 21st century; and (b) 1-3 questions you may have about the future of medical education.

If you have additional time and interest, we also recommend reading some of these highly relevant resources that should be accessible from your university library, e-library, or book store:

- Quadir, Chen, and Isaias' (2020) Analysis of Educational Goals, Problems, and Techniques used in Educational Big data Research from 2010 to 2018;
- Wu, Martin, and Ni's (2017) Systematic Review of Competency-Based Education Effort in the Health Professions: Seeking Order Out of Chaos;
- Redmond and Macfadyen's (2020) Framework to Leverage and Mature Learning Ecosystems;
- Mattison, Sculthorp, Schroeder, and Zacharis' (2017) Return to Doing: How Authentic Assessment Changes Higher Education; and
- Tenore, Velji, and Suskind's (2017) Global Active Learning Curriculum: A New approach to Teaching Medicine in the 21st Century.

EXPLAIN & ELABORATE (during the Webinar)

- We will begin the live Webinar by bringing everyone together to review the purpose and plans for the Webinar.
- You will then be placed into smaller groups for 20 minutes to discuss and synthesize what you learned about the future of medical education.
- During the last 10 minutes, you will be asked to synthesize (a) a list changes your group believes are essential for medical schools to meet the needs of the 21st century, and (b) a list of questions you would like to pose and discuss for during the last portion of the Webinar.
- We will then reconvene as a large group to share designs, reflect on key lesson's learned, and encapsulate your experience by discussing next steps.

EVALUATE

- Evaluation, including corrective feedback, is essential for facilitating the development of higher order thinking and clinical reasoning skills. However, as an informal learning experience, you will not be evaluated on your comments and input during this Webinar.
- As an alternative, to illustrate how student learning may be evaluated during such sessions, we offer **sample assessment rubrics for evaluating critical thinking and reasoning** (circulated as an attachment) that maybe used to facilitate similar active, SCL learning experiences. We also encourage you to reflect on alternative evaluation methods for discussion during the Webinar.