

A man in a white lab coat is looking down at a molecular model he is holding in his hands. The background is a blurred laboratory or classroom setting with a chalkboard.

Point of View:

Integrating the Use of Web-based Learning Platforms to Advance Health Professions Education

Atsusi “2c” Hirumi, PhD
Peter Horneffer, MD

Association for Medical Education in Europe (AMEE) Annual Conference
Lyon, France • August 27-31, 2022

Disclosure Statements



Atsusi “2c” Hirumi, Ph.D


Professor, Instructional Design & Technology
Dept. Learning Sciences & Educational Research
College of Community Innovation and Education
University of Central Florida
atsusi.hirumi@ucf.edu



Peter Horneffer, M.D.

Executive Dean, All American Institute
for Medical Sciences, Jamaica
Director of Medical Education, Lecturio.com
Cardio-Thoracic Surgeon, Maryland, USA
peter.horneffer@aaims.edu.jm

Point of View (POV)



30 years
evidence-based
research, theory,
and practice;
Technological
advances

+

15 years experience
utilizing
eLearning platforms
in challenging
learning
environments



Session Objectives (POV)

1. Identify **challenges** based on research and experience
2. Describe possible **solutions** for platform integration
3. Discuss opportunities for educational **transformation**

Platform integration describes what the instructors and learners do **before** and **after** interacting with the platform.

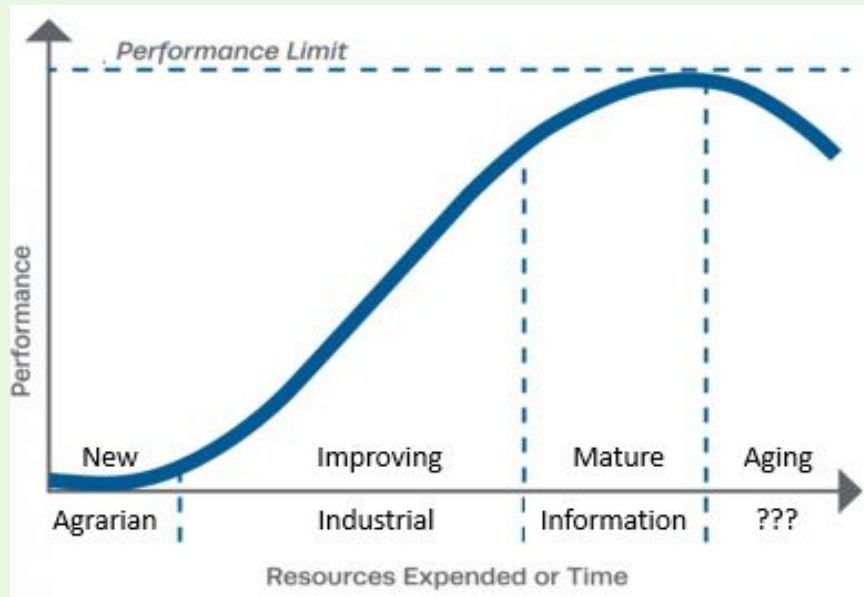


Figure 1. Maturation of educational productivity under industrial age model overtime

Table 1. Comparison of significant changes across sections

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	???

Adaptive Competency-Based Learning

Variables	Industrial Age Model	Competency-Based Model
TIME	Constant (Faculty-Paced)	Variable (Self-Paced)
ACHIEVEMENT	Varies (Bell Curve)	Constant (Mastery)
STRUCTURE	Cohort (Courses)	Individuals (Modules)
ASSESSMENT	Certify & Rank (High Stakes MCQs)	Facilitate Learning (Portfolios)
OUTCOMES	Discrete (SKDs)	Competencies (EPAs)
INSTRUCTION	Teacher-Directed (average learner)	Student-Centered (individual learners)

Adaptive Competency-Based Learning

Variables	Industrial Age Model	Reality	Competency-Based Model
TIME	Constant (Faculty-Paced)		Variable (Self-Paced)
ACHIEVEMENT	Varies (Bell Curve)		Constant (Mastery)
STRUCTURE	Cohort (Courses)		Individuals (Modules)
ASSESSMENT	Certify & Rank (High Stakes MCQs)		Facilitate Learning (Portfolios)
OUTCOMES	Discrete (SKDs)		Competencies (EPAs)
INSTRUCTION	Teacher-Directed (average learner)		Student-Centered (individual learners)



Evidence-Based Learning Platforms

Can:

- Facilitate **hybrid learning** & time variable CBE
- Enhance recall of **foundational science**
- **Reduce faculty time** spent preparing lectures and SLMs
- Increase **access, productivity,** and **affordances**

Cannot:

- Guarantee **quality** of the learning experience.
- Ensure effective **integration** (e.g., what instructor and students do before and after platform use)
- Affect faculty and students' **perceptions** of platform use

Learning Science + Technological Capabilities

Learning Science

- Teaching and learning strategies supported by evidence
- Active (rather than passive) learning
- Cognitive science research
- Neuroscience research



Platform-Enabled Learning

- Adaptive tests and lessons
- Active (rather than passive) learning
- Teachers as coaches, mentors, and motivators
- Increased effectiveness, availability, and affordability in Medical Education

Educational Transformation

Lock-step progress



Mastery-directed learning

Historical precedent



Data-driven teaching

Testing to assign rank



Testing as diagnostic for learning

Old predictors of performance:
good test-taker, prior grades



New predictors of performance:
grit, perseverance, creativity

Educators can and should lead technology integration

- Software platforms are best developed and managed by businesses who partner with faculty and institutions- think of them as modern book publishers
- Direct your students to the tools and materials they need to learn effectively
- Learning materials still must be curated by faculty
- Use technology to improve the effectiveness and availability of medical education
- Help shape how technology is used in your institution and beyond

A man in a white lab coat is looking down at a molecular model he is holding. The background is a blurred classroom with a chalkboard.

Join us at our
workshop at 11:45

A Paradigm Shift in Medical
Education: Internet-based
Platforms at the Core of the
Educational Process

Atsusi “2c” Hirumi, Ph.D
Peter Horneffer, M.D.

Association for Medical Education in Europe (AMEE) Annual Conference
Lyon, France • August 27-31, 2022