

What Kinds of Learning Can We Scale with Online Resources and Activities (and what can't we scale)?



How Online Learning Affects Productivity, Cost and Quality in Higher Education: An Environmental Scan and Review of the Literature

Thomas Carey and David Trick



Results that surprised:



- **Equal parts Research Report, Teachable Moment and Call to Collective Action**
- **Productivity gains from online learning possible @ scale (but only then)**
- **MOOCs as an aggregation of advances having (some) evidence of success**
- **No evidence that fully online programs can meet all UDLEs**
 - ***Ontario Undergraduate Degree Level Expectations***
- **Any “savings” from emerging developments will be needed for... “the learning that matters most” (and is least scalable)**
 - ***What Kinds of Learning Can We Scale with Online Resources and Activities (and what can't we scale)?***

**Productivity gains possible
from online learning
@ scale (but only then)**



**Interactive Learning Online
at Public Universities:
Evidence from
Randomized Trials**

William G. Bowen
Matthew M. Chingos
Kelly A. Lack
Thomas I. Nygren

In sum, our results indicate that hybrid-format students took about one-quarter less time to achieve essentially the same learning outcomes as traditional-format students. (p. 23)

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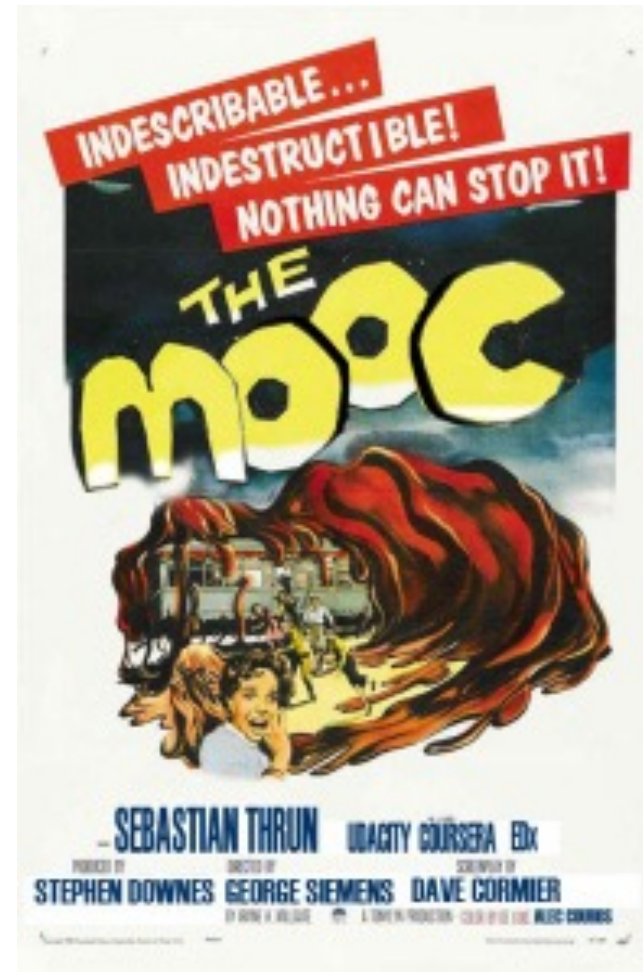
In sum, our results indicate that hybrid-format students took about one-quarter less time to achieve essentially the same learning outcomes

It is also entirely possible that by (potentially) saving significant amounts of resources, such systems can lead to more, not less, opportunity for students to benefit from exposure to modes of instruction such as directed study – if scarce faculty time can be beneficially redeployed.

But none of this will be easy. (p. 17)

**MOOCs as an aggregation
of advances having (some)
evidence of success**

*with thanks to
Giulia Forsythe,
Brock University*



Developments in...

Massive Open Online Courses

Warren Buffett on MOOCS:



**“You can’t tell who’s been swimming naked
until the tide goes out”**

MOOCs as an aggregation of advances having (some) evidence of success

Part 2: Environmental scan of emerging developments

Section 1: Emerging developments

 Affordable and open textbooks.....

 Learning resources that adapt to the student.....

 Optimizing student-instructor interaction time

 Learning analytics: using real-time data on learning activity to target instructional effort.....

 Minimizing marginal costs via Massive Open Online Courses

**Reinterpreting our Task: From Making Sense of Emerging Developments...
From Making Sense of Emerging Developments...
to Making Sense of Making Sense of Emerging Developments...**

minimizing marginal costs via massive open online courses 31

Section 2: Some common themes across emerging developments..... 35

Aligning support to the student’s individual learning needs 35

Reaching global learners and traditional students 37

The increasing visibility of instructional design 38

Reputational capital from and for online learning 39

The challenge of scale 40

Part 3: Observations and policy implications 43

Why Collective Action?

Matt Reed, *Inside Higher Education's* Dean Dad, on the challenge of investing@ scale:

“I don’t know whether MOOCs are the next big thing, a passing fad, or version 1.0 of something that will be really great by version 3.0. (If I had to guess right now, I’d pick the third option.) But for a college with performance-based funding to put much into them right now would be madness. They’re high-risk, especially in the short term. When your margins are already thin, there’s just no room for that magnitude of error.

At a system level, though, this is penny wise and pound foolish. Experimentation is messy, wasteful, and expensive. It has to be. That’s how it works. And it’s the only reliable source of real progress. I don’t think the choice is between safety and risk. It’s between certain decline and the possibility of tremendous improvement. But getting to the latter requires having the risk capital now to try new things...

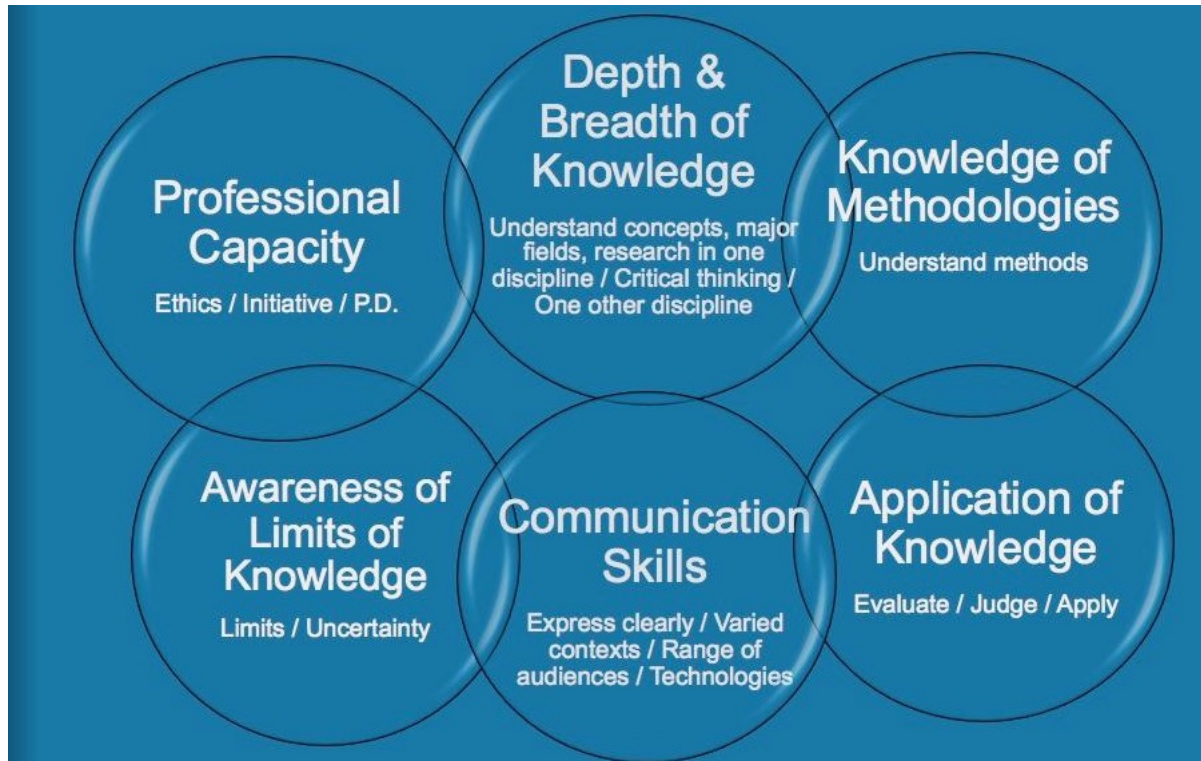
By the time the bugs are fixed -- or the next thing has come along -- we’ll be that much tighter and less able to adapt. Moments of technological breakthrough are not the times for austerity or jamming the brakes. They are the times for risk capital and taking chances [at the system level]. I hope the state systems figure that out before we have to start yet another round of cuts .”

Call to Collective Action:

***“Work together to understand and leverage emerging developments
to scale up learning experiences – wherever appropriate –
to produce efficiencies which allow us to sustain and advance
the student outcomes requiring other kinds of learning experiences
(that are not readily scaled)”***

Motivations: Fiscal, Political, Pedagogical

“No evidence that fully online programs can meet all UDLEs”



UT Mississauga Undergraduate Degree Level Expectations

Any “savings” from emerging developments will be needed for “the learning that matters most” (and is least scalable)

William Weitzer, Dean at a distinguished liberal arts college:

“most importantly, these on-line resources offer institutions the opportunity to realign their costs so that they can apply resources to strategic priorities... It is this last reason that is critical to the future of many institutions of higher education, including those trying to prepare students who are career ready and prepared for life. Doing so is an expensive proposition. It involves providing intimate settings where faculty, students and staff...learn from one another”.

Michael Staton, ‘educator turned entrepreneur’:

“If institutions that currently manage the entire bundle [of instructional and student support services] can start to allow technology to work its magic and see themselves as providers atop of whatever can be effectively achieved by online learning, then those institutions will be able to focus on enhanced quality and lower cost for the services best left to in-person environments.”

Our initial summary of what this might mean

“We conclude that the purpose of adopting online learning should be to preserve and sustain what we value most in higher education: instruction that enables learners to develop new ways of knowing – and doing and being – that will prepare them to face the challenges of our times. This may at first seem paradoxical, since much of this ‘learning that matters most’ may be the least amenable to scale up.”

Contribute your thoughts...



Things we did not/could not talk about...

- **Slow but steady, still not ready...**
 - **Semantic Web, Mobile/Connected/Ubiquitous etc.**
 - **OER @ scale?**
- **“Productive Alignment”**
 - **Instructional design combining Constructive Alignment with explicit about Productivity**
- **Interaction Equivalency Hypothesis (Terry Anderson)**
 - **<http://equivalencytheorem.info/>**
 - **But see the discussion at: www.tonybates.ca**

Quotes from the discussion at www.tonybates.ca ...

- Learner-content interaction for technical mastery
- Performance tasks with single solutions and predictable pathways

- Learner-learner interaction for (some) Q&A and feedback
- Required for complex challenges with diverse ways of seeing/knowing

- **Learner-instructor interactions required for threshold concepts, paradigm shifts, learning strategy, self-efficacy/mindset...at least!**
- **Includes cognitive development toward mature epistemologies**

- **Learner-expert interaction required for formation of professional practice & identity (“knowing, doing & being”)**



Questions? What can we collectively do? What should we collectively do?

Further comments are welcome: tcarey@uwaterloo.ca or www.tonybates.ca