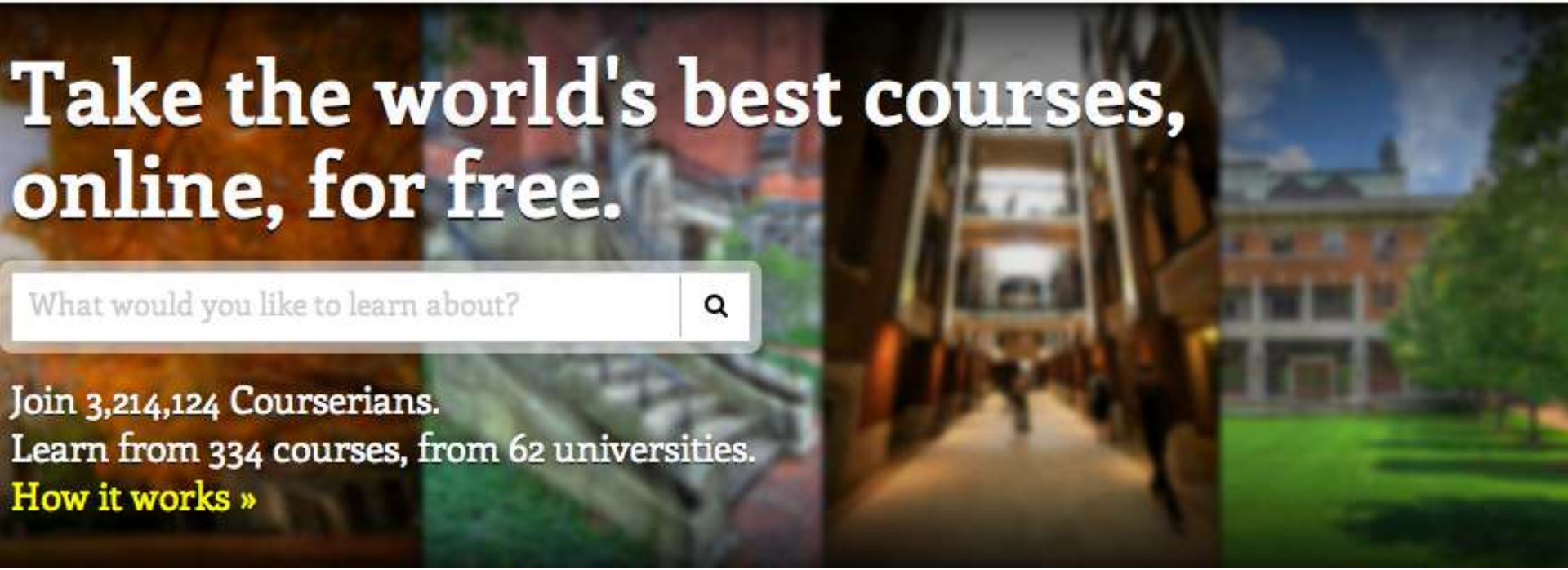
coursera

The Online Revolution: Learning without Limits

Daphne Koller


100,000
Massive
Open
Online
Course
400



Social entrepreneurship

Pedagogical foundations

Broad range of courses

Partnership with universities

Coursera

62 Universities

Discussion forum

337 courses

Video lectures

3.3 million students

Community

221 countries

11 million course enrollments

Assessments


Stanford

UNIVERSITY OF
MICHIGAN

Penn
University of Pennsylvania

PRINCETON
UNIVERSITY

UNIVERSITY of
WASHINGTON

University of Virginia

UNIVERSITY OF MINNESOTA

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

UC SANTA CRUZ

UCSF
University of California
San Francisco

UF
UNIVERSITY of
FLORIDA

VANDERBILT
UNIVERSITY

UC San Diego

UNIVERSITY OF
MARYLAND

THE
OHIO
STATE
UNIVERSITY

UCIRVINE

Icahn School
of Medicine at
Mount
Sinai

Duke
UNIVERSITY

NORTHWESTERN
UNIVERSITY

RICE

CALARTS

Caltech

JOHNS HOPKINS
UNIVERSITY

University of Colorado
Boulder

BROWN

EMORY
UNIVERSITY

Georgia
Tech

UNIVERSITY of
ROCHESTER

Berklee
college of
music

University of
Pittsburgh

COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

CURTIS
INSTITUTE OF MUSIC

RUTGERS

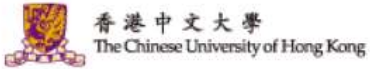
PENNSTATE

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

CASE WESTERN RESERVE
UNIVERSITY
EST. 1826

WESLEYAN
UNIVERSITY

- **30 of the top 60 universities worldwide** (Academic Ranking of World Universities)
- **The #1 or #2 ranked university in 14 countries.**



UNIVERSITY OF MARYLAND, COLLEGE PARK

E-learning and Digital Cultures

Jeremy Knox, Sian Bayne, Hamish Macleod, Jen Ross, Christine Sinclair

UNIVERSITY OF EDINBURGH

Jan 28th 2013
5 weeks long

Introduction to Philosophy

Dave Ward, Duncan Pritchard, Michela Massimi, Suilin Lavelle, Matthew Chrisman, Allan Hazlett, Alasdair Richmond

UNIVERSITY OF EDINBURGH

Jan 28th 2013
7 weeks long

The Social Context of Mental Health and Illness

Charmaine Williams

UNIVERSITY OF TORONTO

Jan 28th 2013
6 weeks long

Critical Thinking in Global Challenges

Celine Caquineau, Mayank Dutia

UNIVERSITY OF EDINBURGH

Jan 28th 2013
5 weeks long

Introduction to Computer Networks

Arvind Krishnamurthy, David Wetherall, John Zahorjan

UNIVERSITY OF WASHINGTON

Jan 28th 2013
10 weeks long

Grow to Greatness: Smart Growth for Private Businesses, Part I

Edward D. Hess

Jan 28th 2013
5 weeks long

Great content from many university partners

Duke
UNIVERSITY

English Composition I: Achieving Expertise

Denise Comer

You will gain a foundation for college-level writing valuable for nearly any field. Students will learn how to read carefully, write effective arguments, understand the writing process, engage with others' ideas, cite accurately, and craft powerful prose. We will create a workshop environment.

Georgia Tech

Introductory Physics I with Laboratory

Michael F. Schatz

Explore motion in the real world using modern tools and techniques (video capture and analysis, computer modeling) guided by fundamental physics principles.

ACE CREDIT
American Council on Education
College Credit Recommendation Service

BILL & MELINDA GATES foundation

Entry level courses:

- 20+ entry level courses on Coursera
- Spanning broad base of topics: math, bio, writing, physics, psych, chem, CS, accounting
- Hosting 7 of 11 Gates funded entry-level MOOCs
- 5 ACE-accredited classes

Entry-level Courses on Coursera

MSJC

Crafting an Effective Writer: Tools of the Trade

Lawrence (Larry) Barkley and Ted Blake

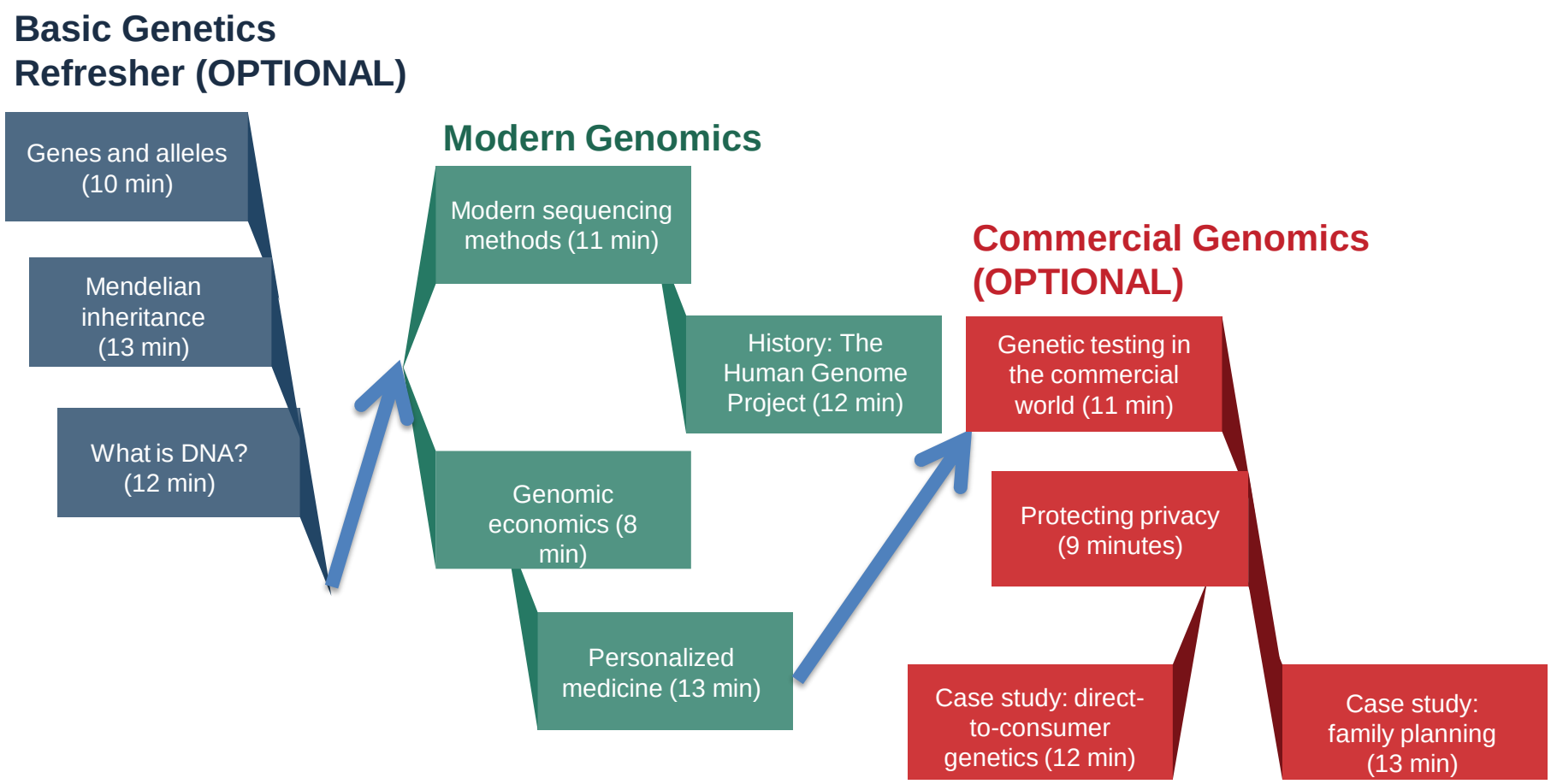
Learn to become an effective builder of sentences using the basic tools of grammar, punctuation, and writing.

- MSJC won a Gates grant to produce a remedial English writing MOOC
- Purpose of this course: preparing students for a high-stakes English 101 placement exam; poor test performance adversely affects degree completion time
- Currently, only 15% of students pass English 101
- Course is free for the first five years
- Paid peer tutors will assist students through feedback and forum monitoring

Coursera changed my life....If I would have never taken the sociology course I would have never met some amazing people including one who helped me step out of my daily me and her and I would have never co-founded an NGO together. Now both of us take Coursera courses to help us in our NGO work. (Jolene Campbell)

I grew a lot from answering the longer quizzes and wrestling with the complex essay grading rubrics… you are not only allowing autistic people to learn, but actually diminishing the severity of the illness itself. *(Daniel Bergmann)*

The student experience

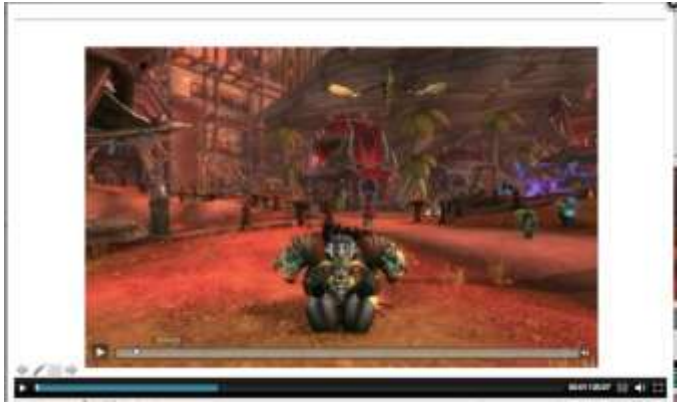


Personalized Learning

Sustainability

Health Policy & the Affordable Care Act

Introduction to Sociology



Gamification

Innovative Lecture Formats

Multiple choice

Which of these is a reasonable definition of machine learning?

- Machine learning is the science of programming computers.
- Machine learning is the field of allowing robots to act intelligently.
- Machine learning is the field of study that gives computers the ability to learn without being explicitly programmed.
- Machine learning means from labeled data.

Computer programs

```
image = new SimpleImage("puzzle-copper.png");

for (pixel: image) {
  // your code here
  pixel.setRed(0);
  pixel.setGreen(pixel.getGreen() * 10);

  pixel.setBlue(pixel.getBlue() * 10);

}

print(image);
```

Run

Short answer (regular expression)

Who discovered the theory of general relativity?

Albert Einstein

Submit

Math expressions

Question 1

What is the derivative of $\frac{sin(x)}{x}$ w.r.t. x ?

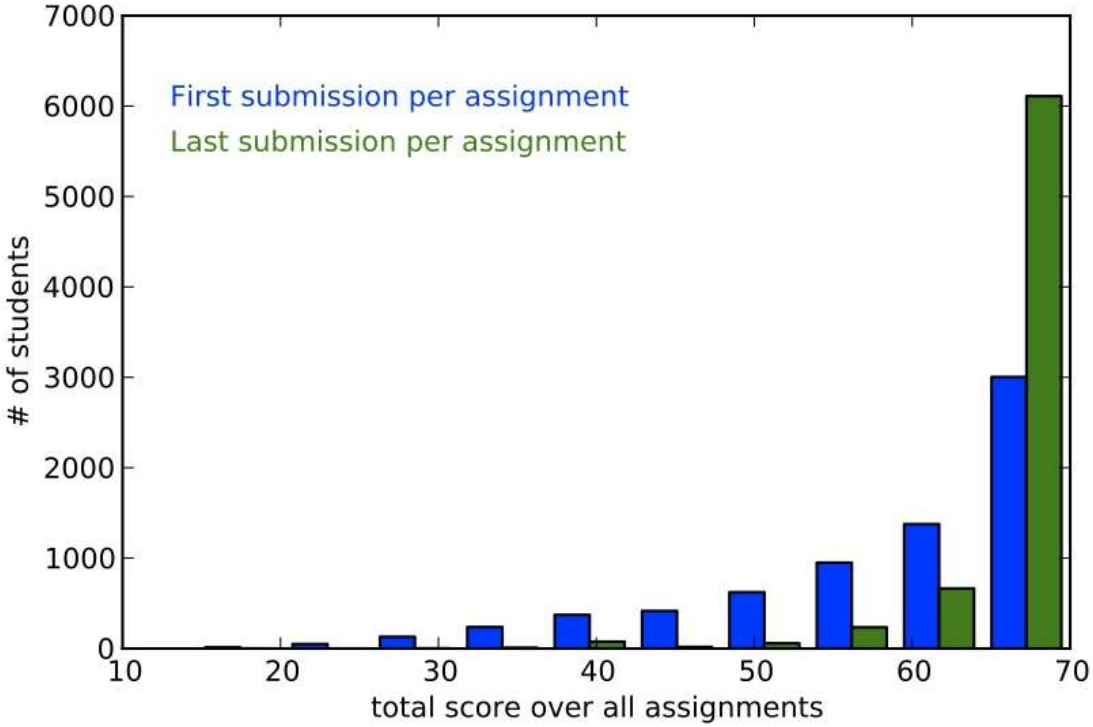
(x*cos(x) - sin(x)) / x^2

Preview

Your submission is equivalent to: $\frac{x\cos(x)-\sin(x)}{x^2}$

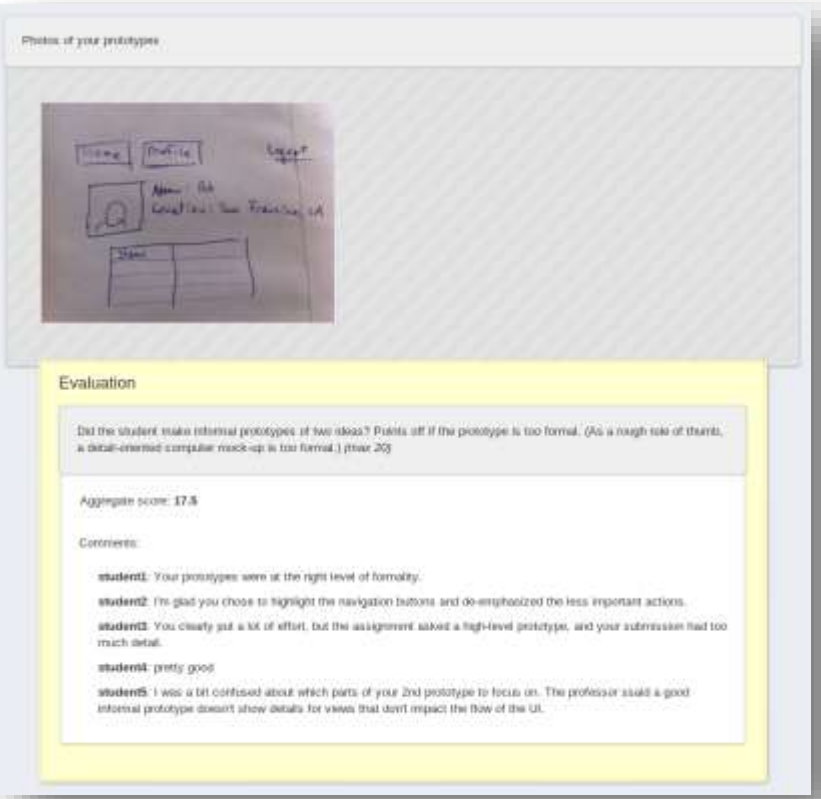
Autograded Homeworks and Exercises

Martin Odersky
EPFL



For students of similar current performance, mastery-based score improvements correlate with future performance

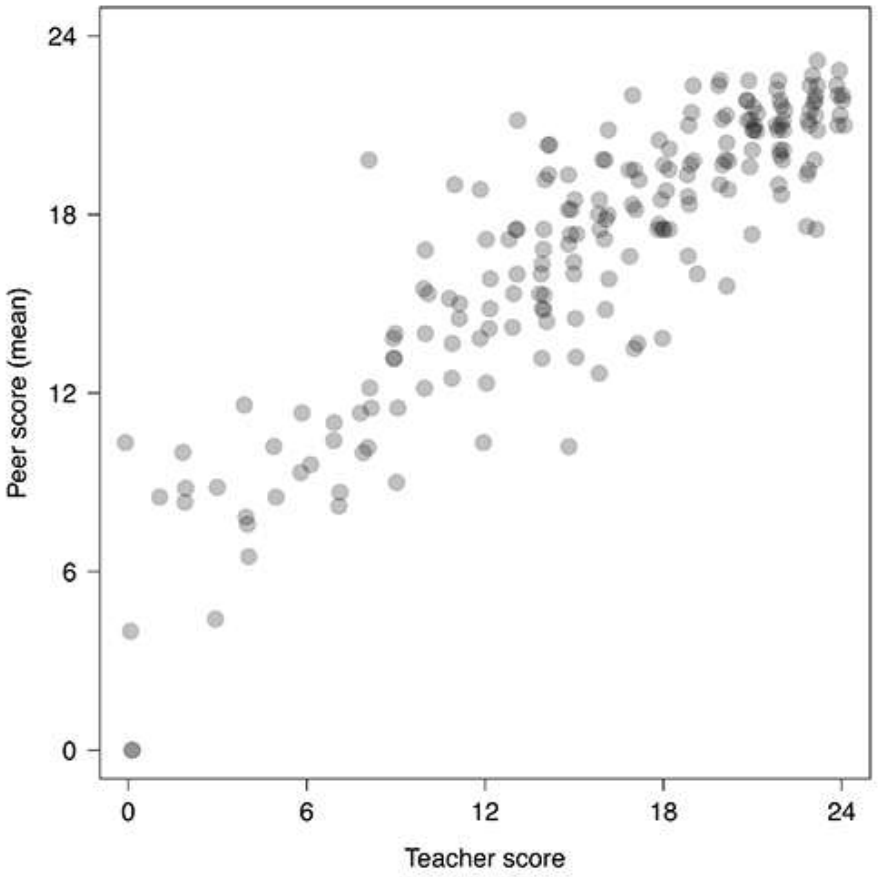
Mastery



Peer Grading

Mitch Duneier
Princeton

Analysis by:
Matthew Salganik & Mitch Duneier
Princeton University Sociology Dept.



Peer Grading Accuracy (Soc101, Princeton)

Karl Ulrich
Wharton, UPenn

LaPtabel
laptop table

Ramaswamy Venkatachalam
Gujarat, India

DuoSlim
portable device holder

Aranzazu Hurtado Ruiz
Madrid, Spain

Neo-WD
space-efficient workdesk

Paul Mendoza
Manila, Philippines

Creative, open-ended assignments via peer grading

Know Thyself
by Mitchell Green

Home

COURSE OVERVIEW

About The Course

Course Schedule

COURSE CONTENT

Video Presentations

Study Questions

Weekly Quizzes

Discussion Forums

Help with Subtitles

Join a Meetup

Instructor Support
I18N Editor

Forums / Weekly Video Presentations

Decision matrix

Subscribe for email updates.

Sort

No tags yet. + Add Tag

Jenny Barthold · 4 days ago

Hilarious.
I found myself backing into the numbers that would give me the outcome I desired--a trip to the beach. I have learned from experience that my regrets are almost always for things not done, so I came up with numbers that would ensure my decision to go.

All this was pretty unconscious until I got the answer I wanted with a burst of realization that I had "intended" it from the beginning.

I understand that most decisions are made before we reason out their justifications, so why not skip the pretense of reasoning and just go with the gut from the start?

6 · flag

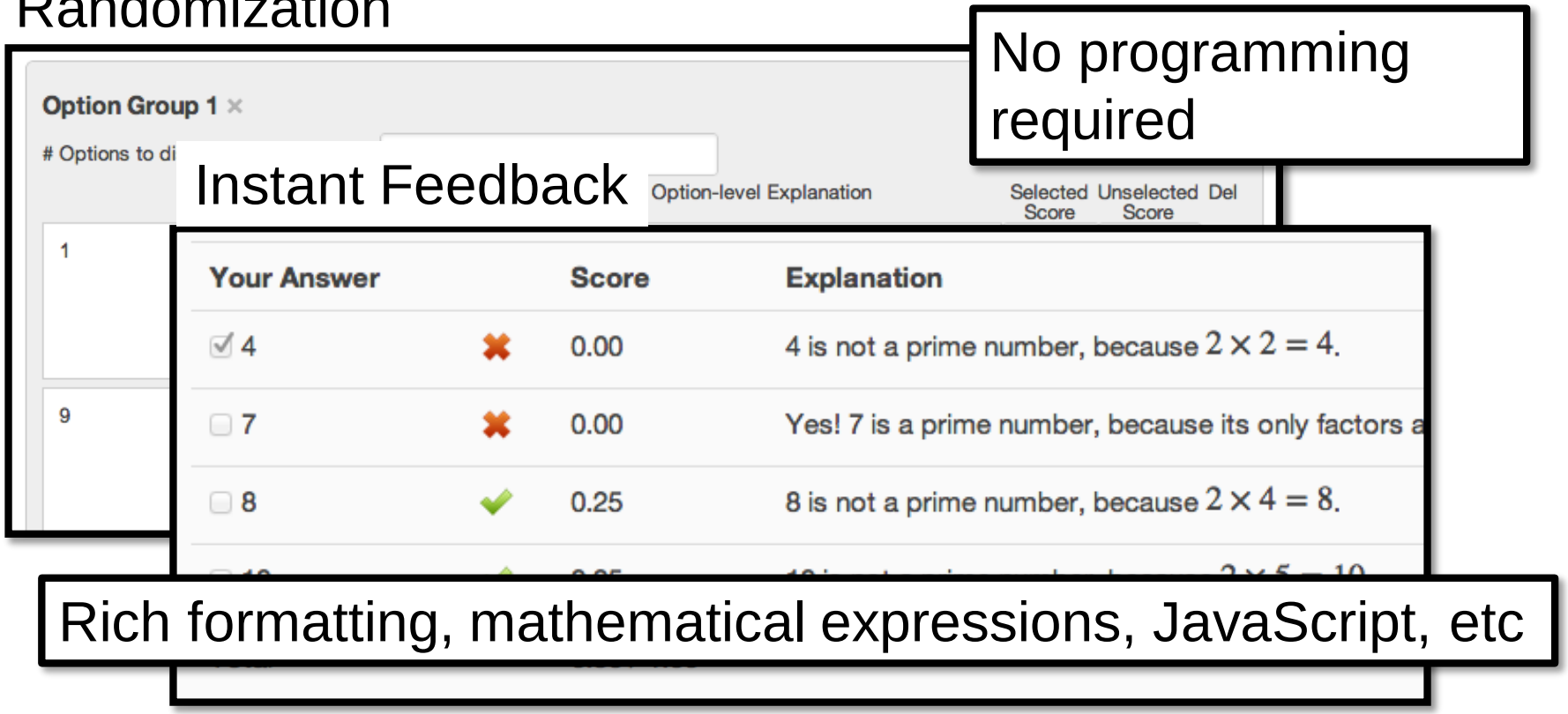
Liana Besenghi · 4 days ago

I think it is within our nature to attempt to justify our decisions, particularly if they are in conflict with what we may think we ought to be doing instead, or what we think others might think we ought to be doing. We have always reasoned and justified

Student community

Platform

Randomization

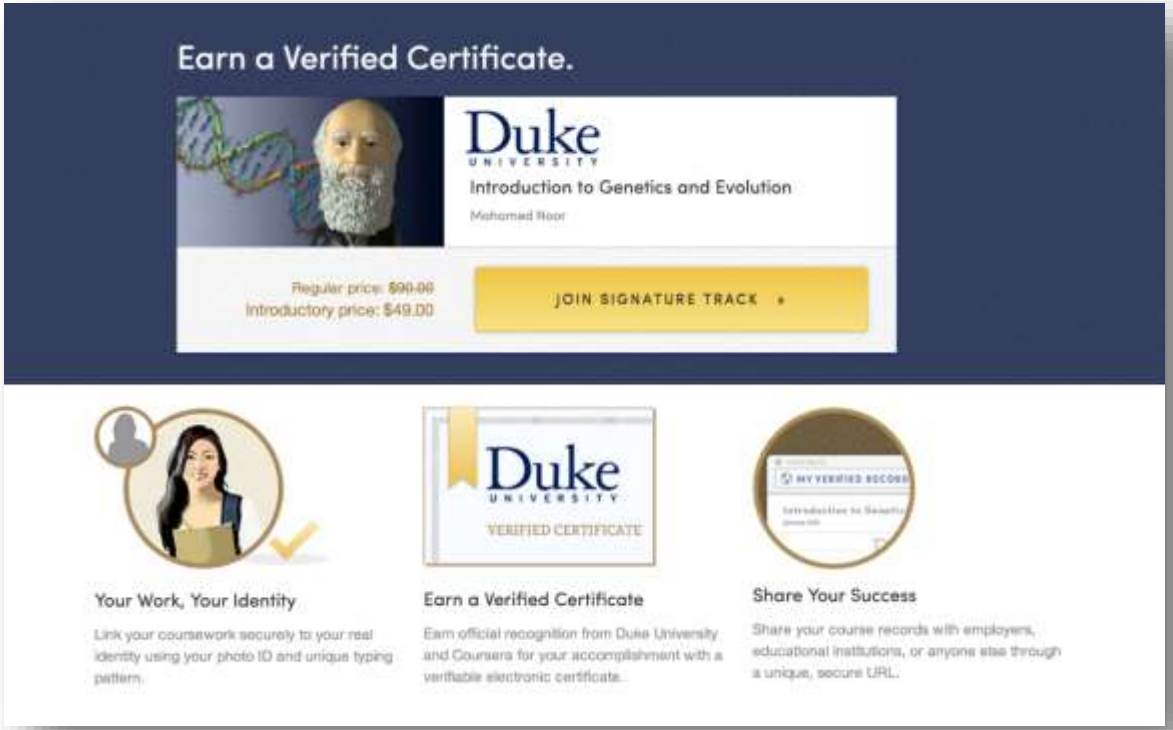


No programming required

Instant Feedback

Rich formatting, mathematical expressions, JavaScript, etc

Authoring tools: As easy to use as Google docs



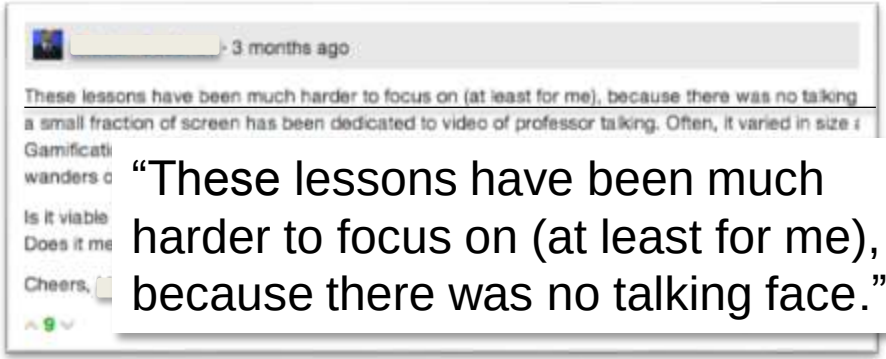
Digital webcam proctoring

Identity Verification & Academic Integrity

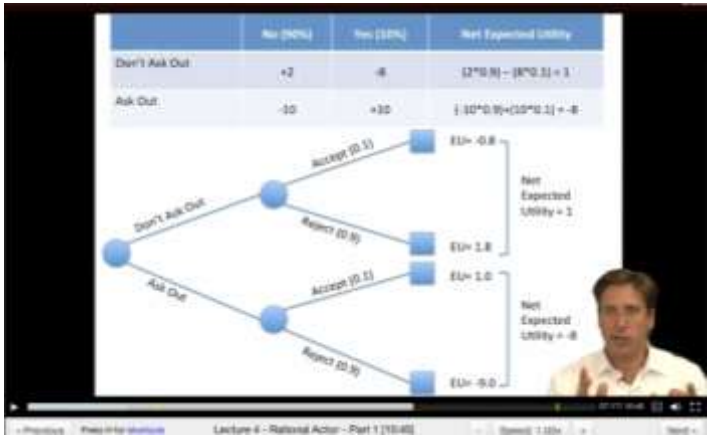
Wrong student answers

Detailed Analytics Improve Teaching

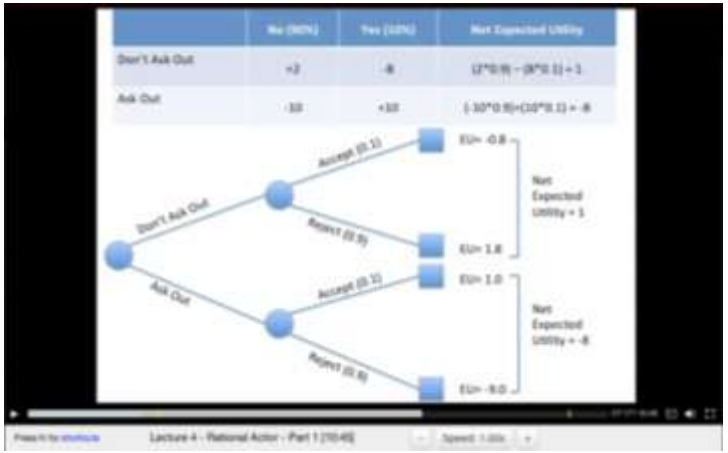
Dan MacFarland



"These lessons have been much harder to focus on (at least for me), because there was no talking face."



Student Group A



Student Group B

Data: Learn how students learn

Enables rich ecosystem of educational apps, with shared data model

- Physics simulators
- Multi-student games
- Note taking tools, student organization tools, ….
- Advanced auto-graders, adaptive learning software, ….

Seamless integration

- Integration via APIs
- We help scale up from 1 to 100,000 students

Supports experimentation

- Instructors can build their own tools for their class

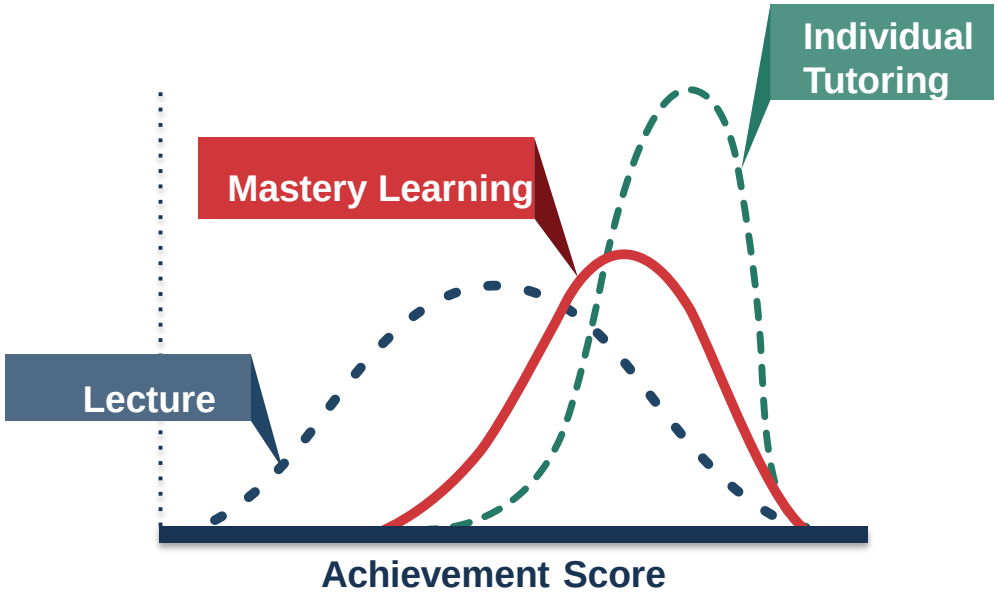
Coursera App Platform (coming soon)

- Support small, closed study groups within a larger course:
  - On-campus class announcements
  - Closed forums
  - Notes and note-taking tools
  - Instructor access to grades for the students in the section
- Facilitate closer interactions between instructors, TAs and students
- … while benefiting from the richness of interaction in a larger community

Small Group Sections (coming soon)

Improving Outcomes

"The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring." *B. Bloom, Educational Researcher* (1984).

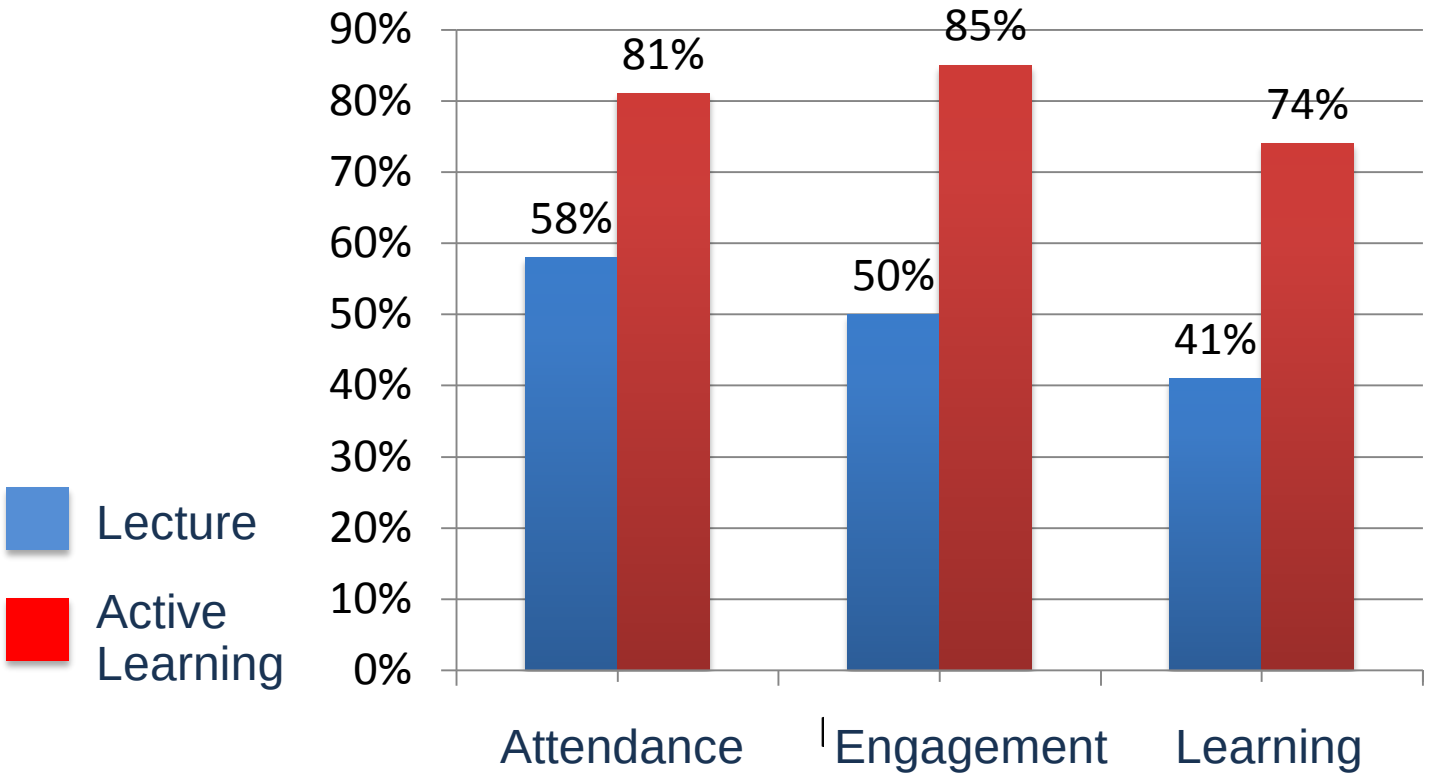


The 2 Sigma Problem

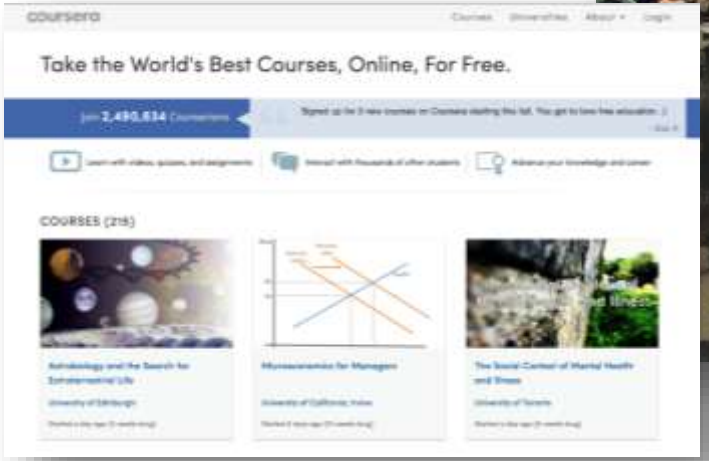
College is a place where a professor’s lecture notes go straight to the students’ lecture notes, without passing through the brains of either.

—Edwin Emery Slosson

"Improved Learning in a Large-Enrollment Physics Class."
L. Deslauriers, E. Schelew, and C. Wieman. *Science* (2011).



Active Learning in the Classroom



- High-quality online content
- Produced locally or adopted from another institution

- High-touch interaction with local instructor
- Active learning, problem solving, personal attention to students

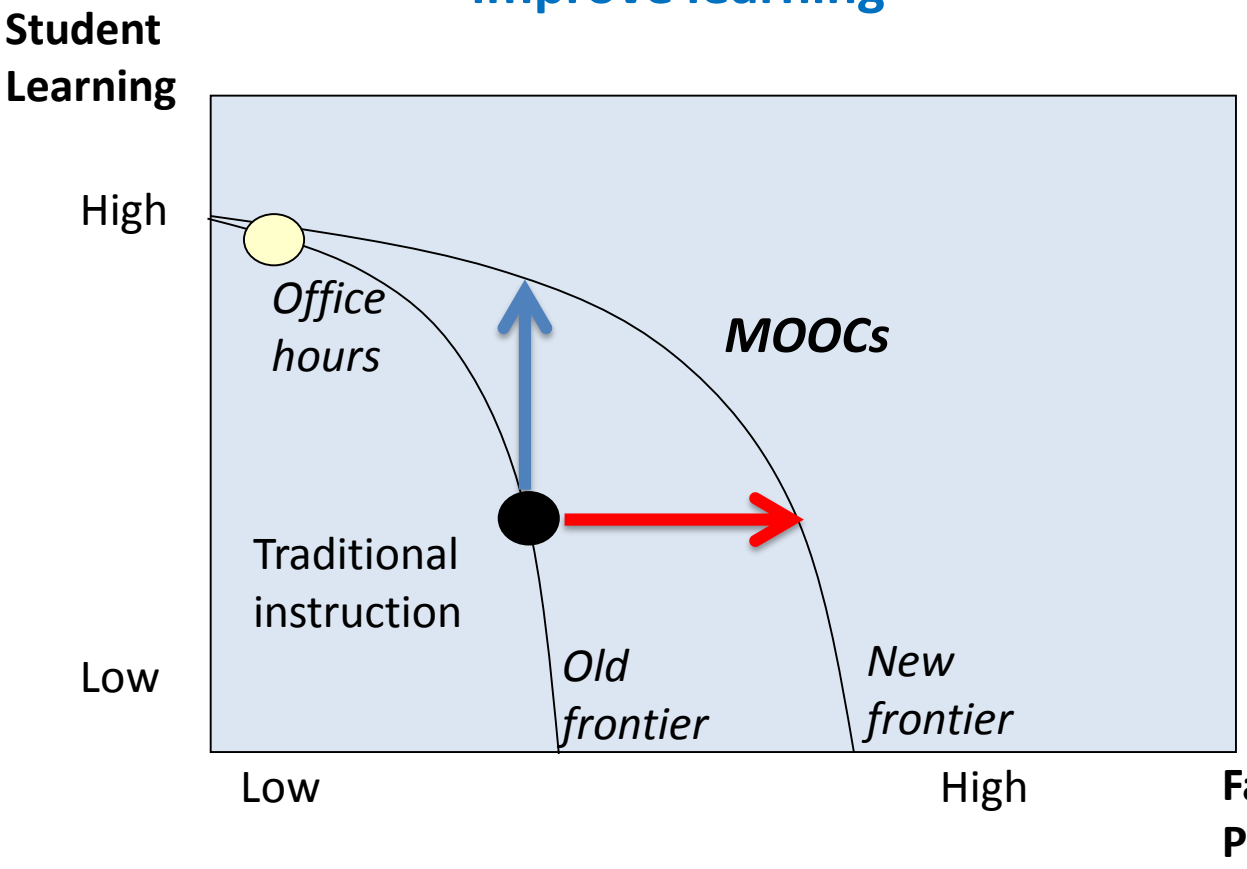
The Best of Both Worlds

- Self-selected level of guidance
  - E.g. if a student is stronger in Math than English, she may elect to enroll in a lower-touch Math, but a higher-touch English
  - Students might pay according to the level of ‘touch’ they receive in the course
- Multi-campus or multi-section enrollment
  - One large course offers economies of scale, richer community
  - Smaller groups embedded within course allow individualized attention from instructor
  - Group composition can be based on location, ability, interests, …

Flexibility in Course Structure

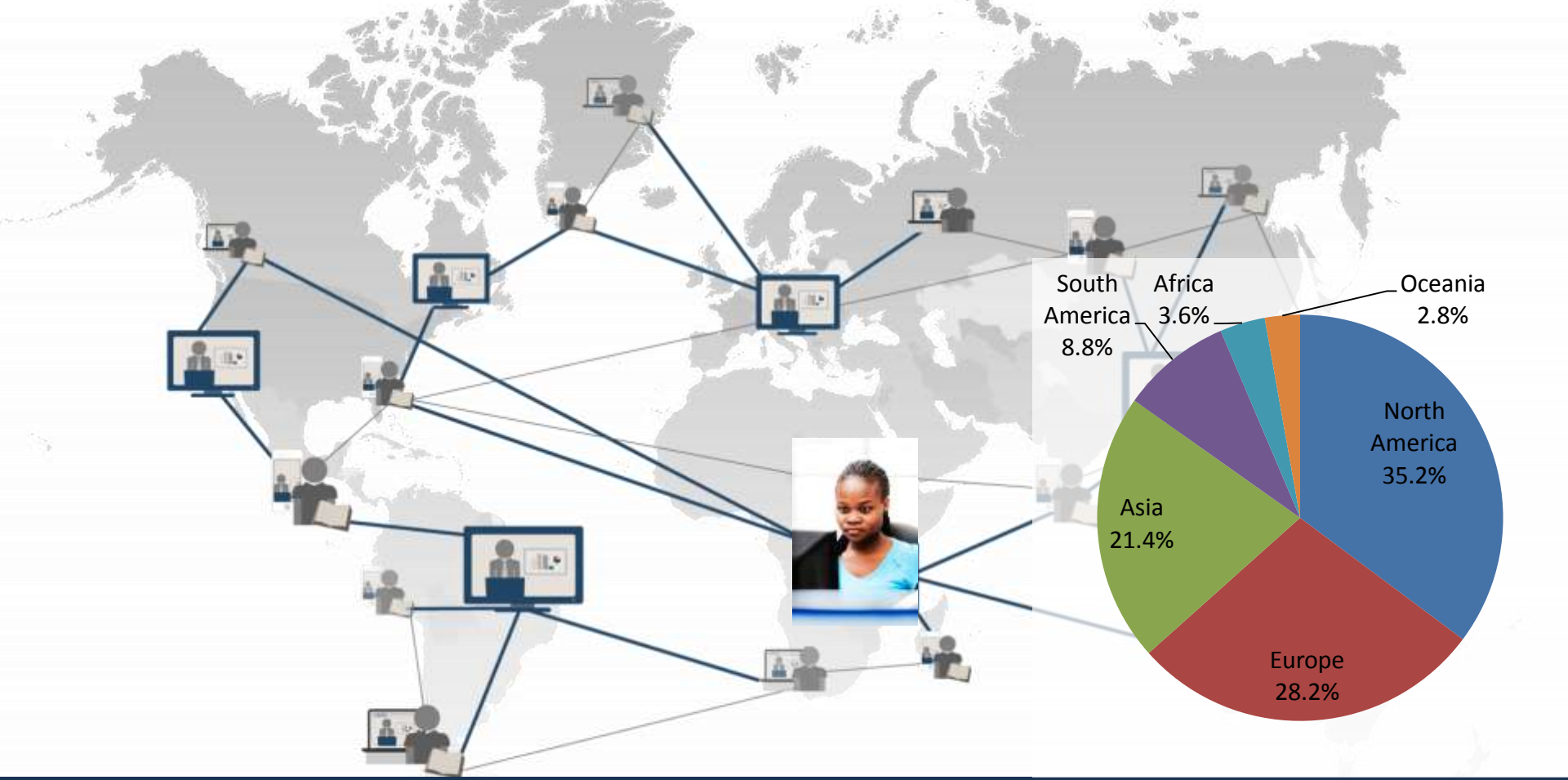
Terwiesch, 2012

improve learning



decrease costs

A New Frontier for Education



Learning without Limits