



**coursera**

# The Online Revolution: Learning without Limits

**Daphne Koller & Andrew Ng**  
Stanford University & Coursera

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## RECENT NEWS

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Professional Development:  
Lifelong Learning for Teachers



29 New Schools, 92 New  
Courses, 5 Languages!



Five courses receive college  
credit recommendations



Coursera Wins "Best New  
Startup"

Stanford

**M** UNIVERSITY OF MICHIGAN

 Penn  
UNIVERSITY OF PENNSYLVANIA

 PRINCETON UNIVERSITY

**W** UNIVERSITY of WASHINGTON

 UNIVERSITY of VIRGINIA

 UNIVERSITY OF MINNESOTA

**I** 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

**Yale**



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



香港中文大學  
The Chinese University of Hong Kong



The Hebrew  
University of  
Jerusalem



UNIVERSITY OF  
COPENHAGEN



SAPIENZA  
UNIVERSITÀ DI ROMA



ÉCOLE POLYTECHNIQUE  
FÉDÉRALE DE LAUSANNE



THE UNIVERSITY  
of EDINBURGH



RELAY/GSE  
GRADUATE SCHOOL of EDUCATION



UNIVERSITY OF  
TORONTO



National Taiwan University

UAB

Universitat Autònoma  
de Barcelona

exploratorium



THE UNIVERSITY OF  
MELBOURNE



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



THE UNIVERSITY OF TOKYO



AMERICAN MUSEUM  
of NATURAL HISTORY

TUM

Technische Universität München



UNIVERSITY  
OF LONDON  
INTERNATIONAL  
PROGRAMMES



UNAM  
Universidad Nacional  
Autónoma de México



New  
Teacher  
Center



UNIVERSITÉ  
DE GENÈVE



NUS  
National University  
of Singapore



香港科技大學  
THE HONG KONG  
UNIVERSITY OF SCIENCE  
AND TECHNOLOGY

match  
EDUCATION



Universiteit  
Leiden



TECNOLÓGICO  
DE MONTERREY



	<p>UNIVERSITY OF MARYLAND, COLLEGE PARK</p> <h3>E-learning and Digital Cultures</h3> <p>Jeremy Knox, Sian Bayne, Hamish Macleod, Jen Ross, Christine Sinclair</p> <p>UNIVERSITY OF EDINBURGH</p>	<p>Jan 28th 2013 5 weeks long</p>
	<h3>Introduction to Philosophy</h3> <p>Dave Ward, Duncan Pritchard, Michela Massimi, Sullin Lavelle, Matthew Chrisman, Allan Hazlett, Alasdair Richmond</p> <p>UNIVERSITY OF EDINBURGH</p>	<p>Jan 28th 2013 7 weeks long</p>
 <p>The Social Context of Mental Health and Illness</p>	<h3>The Social Context of Mental Health and Illness</h3> <p>Charmaine Williams</p> <p>UNIVERSITY OF TORONTO</p>	<p>Jan 28th 2013 6 weeks long</p>
	<h3>Critical Thinking in Global Challenges</h3> <p>Celine Caquineau, Mayank Dutia</p> <p>UNIVERSITY OF EDINBURGH</p>	<p>Jan 28th 2013 5 weeks long</p>
	<h3>Introduction to Computer Networks</h3> <p>Arvind Krishnamurthy, David Wetherall, John Zahorjan</p> <p>UNIVERSITY OF WASHINGTON</p>	<p>Jan 28th 2013 10 weeks long</p>
	<h3>Grow to Greatness: Smart Growth for Private Businesses, Part I</h3> <p>Edward D. Hess</p>	<p>Jan 28th 2013 5 weeks long</p>

**The Humanities, Sciences, Engineering, Business, ....**



## Commonwealth Education Trust

The Commonwealth Education Trust invests in primary and secondary education and the professional development of teachers throughout their careers. Through education it seeks to enhance the opportunities for children from all walks of life to contribute to the sustainable development of their communities.

Launched May 1st!

Top schools of education, top museums, and the Commonwealth Education Trust



Foundations of Teaching for Learning 1: Introduction  
August 2013



Foundations of Teaching for Learning 2: Being a Teacher  
September 2013



Foundations of Teaching for Learning 3: Learners and Learning  
November 2013



Foundations of Teaching for Learning 4: Curriculum  
February 2014



Foundations of Teaching for Learning 5: Planning for Teaching and Learning  
April 2014



Foundations of Teaching for Learning 6: Introduction to Student Assessment  
June 2014

“Coursera’s ambitious agenda to take teacher training and professional development to scale using technology is an important and crucial innovation on the road to meeting our global education goals.”  
(Gordon Brown, May 2013)

# Teacher Professional Development



I applied to the Fulbright Scholarship to study at the US. In the interviews and in the essay, one of the things I stood up was my experience with Coursera, the evaluators were very glad with my story, and I received the scholarship!

*(Raul Coaguila)*



## Reach in Developing World

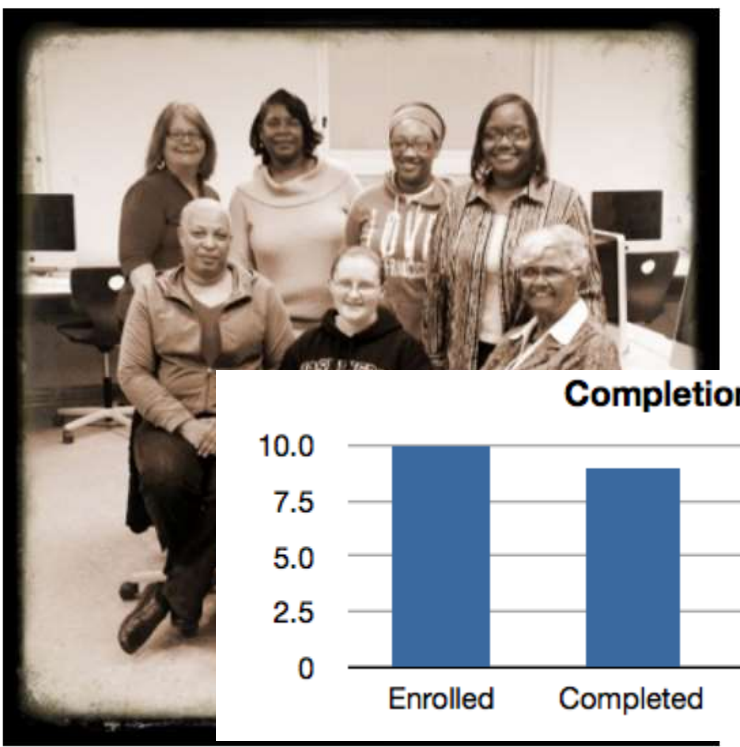
(Jan-Apr 2013):

- 33% of total visits
- 4.7M unique visits
- India: 824,444 uniques
- Africa: 310,606 uniques
  - biggest countries: Egypt, South Africa, Ethiopia, Algeria
- Southeast Asia: 487,536 uniques
  - biggest countries: Philippines, Thailand, Vietnam
- South & Central America: 1,239,953 uniques
  - biggest countries: Brazil, Chile, Argentina, Colombia, Ecuador, Peru, Venezuela, Bolivia

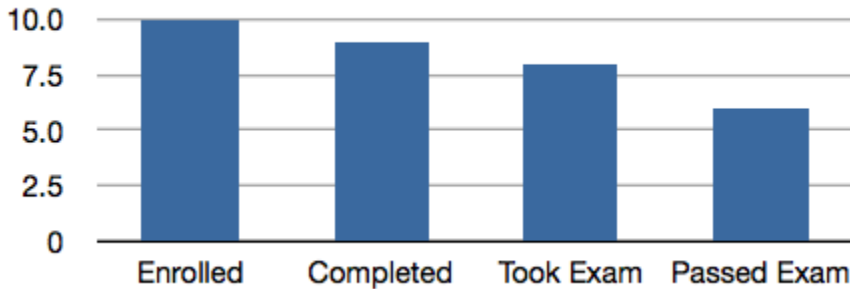




Grow to Greatness



Completion Results

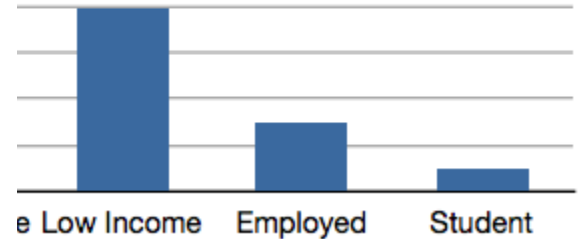


Age Demographic



- 16-18
- 18-25
- 25-35
- 35-45
- 45-55
- 55-65
- 65+

Income Demographic



Sharon Watkins, Ohio



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)*

**STUDENT EXPERIENCE**



# users on site



Timeline



Real Course



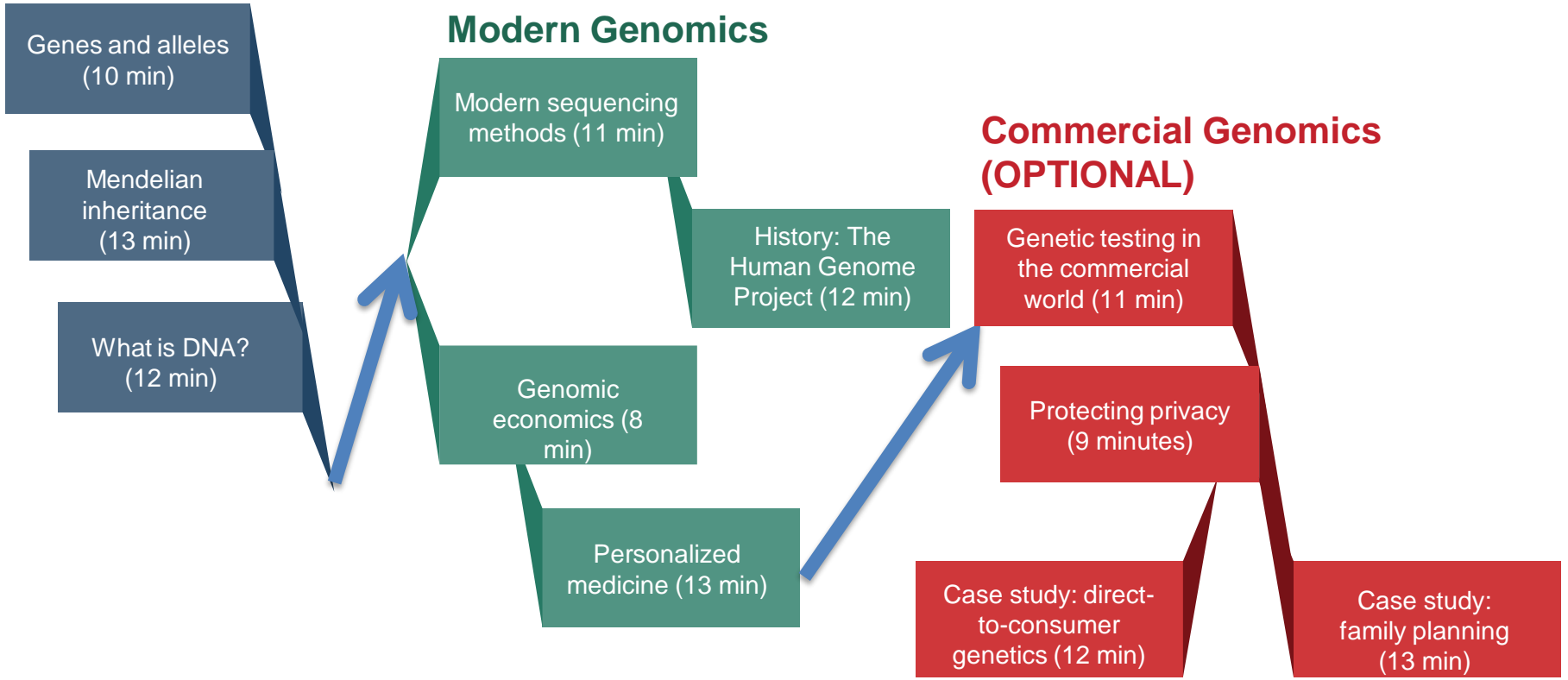
**I** Sustainability



 Introduction to Sociology

**Many Different Formats**

## Basic Genetics Refresher (OPTIONAL)

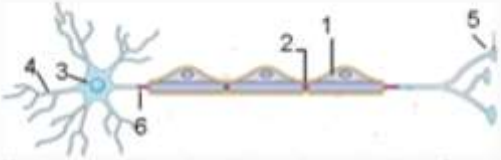






## Multiple choice

**Question 1**



Match the name of the section with the number as plotted in the figure

AIS – Axon Initial Segment

## Short answer (regular expression)

Who discovered the theory of general relativity?

Submit

## 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

## Math expressions

**Question 1**

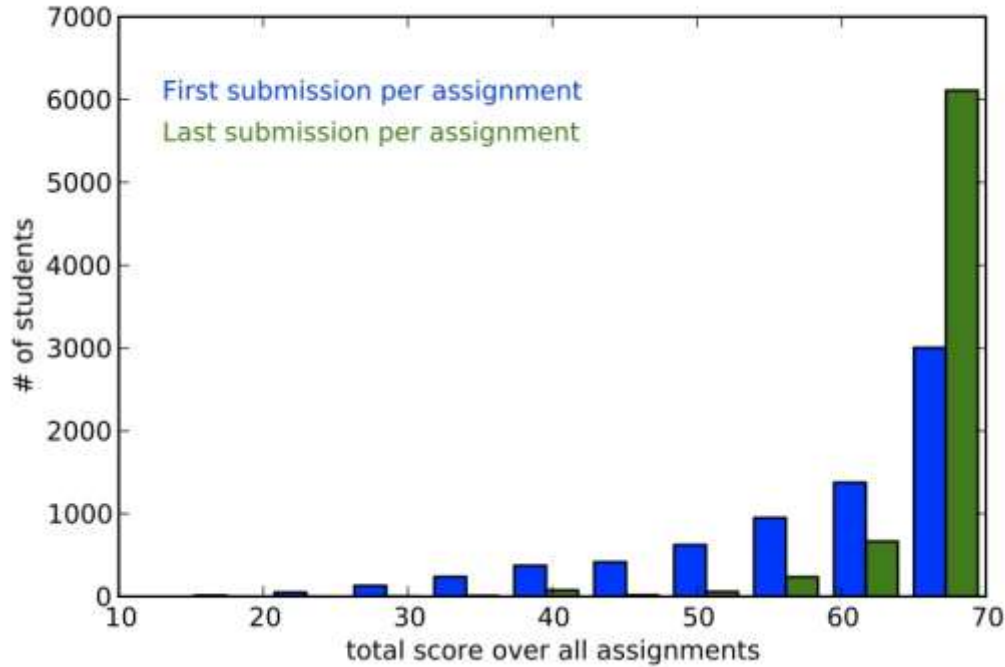
What is the derivative of  $\frac{\sin(x)}{x}$  w.r.t.  $x$  ?

Preview

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

# Autograded Homeworks and Exercises



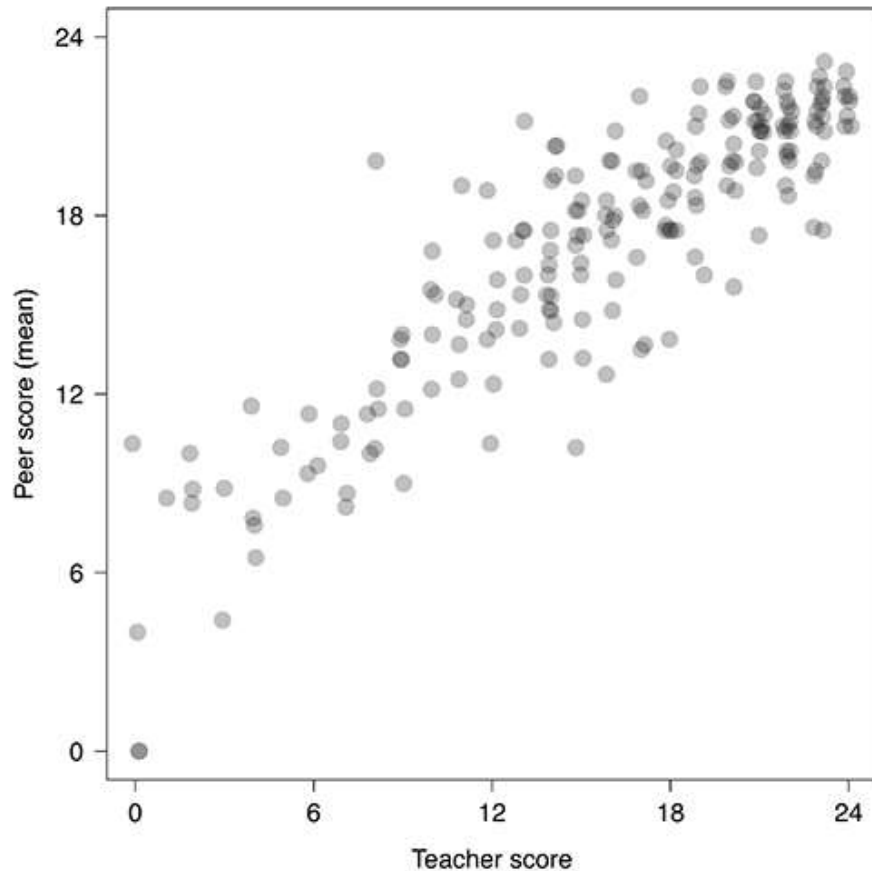


For students of similar current performance, mastery-based score improvements correlate with future performance



Mitch Duneier  
Princeton

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



# Peer Grading



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



Home

Video Lectures

Quizzes

Discussion Forums

Course Information

Course Staff

Students Map

Surveys

Final Exam

Course Wiki

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Instructor Support

Forums / Get Help Here / Course Material Help

## Information storage

Subscribe for email updates.

Sort replies by: **Oldest first** Newest first Most popular

No tags yet. + Add Tag

Student 1

a day ago

The problem summary:

How is the information stored in our brain? As in computers we use potentials, or magnetization for example to make an array of binary code (1 or 0), what is the analogous in the brain?

Steps to rep

Student 2

a day ago

-We have wit  
real time, pas

Maybe it

Student 3

a day ago

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Activated,

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Comments:

Thank you so much. S

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each one and tes

Student 4

- 5 minutes ago

I've already worked a lot on this before starting with this course (nonetheless I learned a lot of details in the course). One of the most interesting papers I found is that information is represented feature based <http://www.cs.rochester.edu/users/faculty/dana/taniluj.pdf>. I've already tried around building some small information processing algorithms based on this. If you are interested we could probably talk a bit about it.



**2490 Coursera communities**

**Global Network of Communities**





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UNIVERSITY

Introduction to Genetics and Evolution

Mohamad Noor

Regular price: \$90.00  
Introductory price: \$49.00

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### Your Work, Your Identity

Link your coursework securely to your real identity using your photo ID and unique typing pattern.



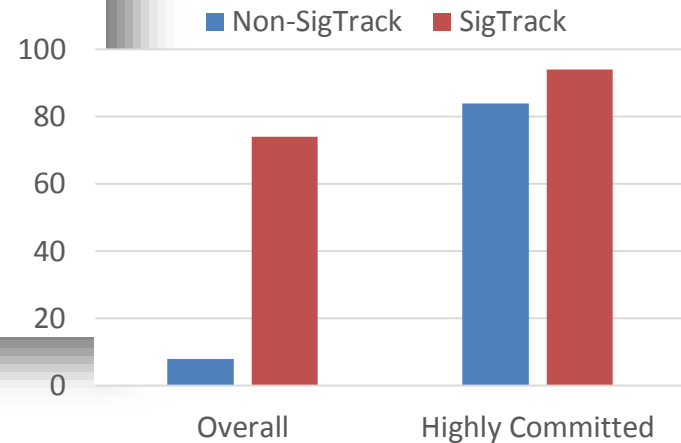
### Earn a Verified Certificate

Earn official recognition from Duke University and Coursera for your accomplishment with a verifiable electronic certificate.



### Share Your Success

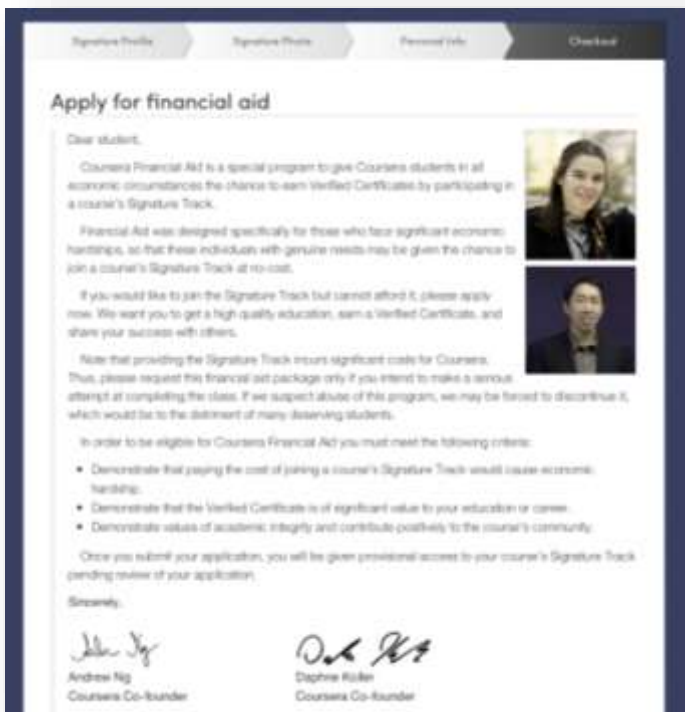
Share your course records with employers, educational institutions, or anyone else through a unique, secure URL.



# Signature Track

## Over 1,000 applications accepted

- A physician from Egypt planning to teach **Nutrition for Health Promotion and Disease Prevention** in her village despite a disorganized Ministry of Health
- A Bangladeshi professional studying **Global Sustainable Energy** to improve the 53% access to electricity in Bangladesh
- A student from Chile taking **Neurons, Synapses and Brains** to prepare to apply for a PhD in Huntington's disease research



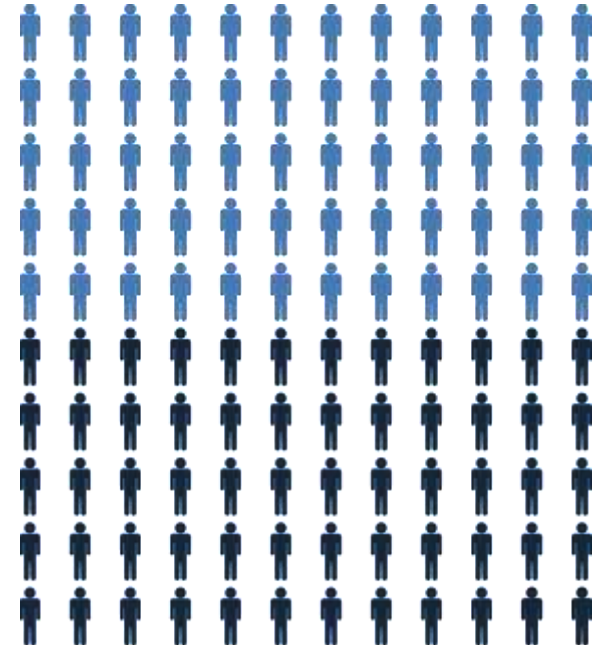
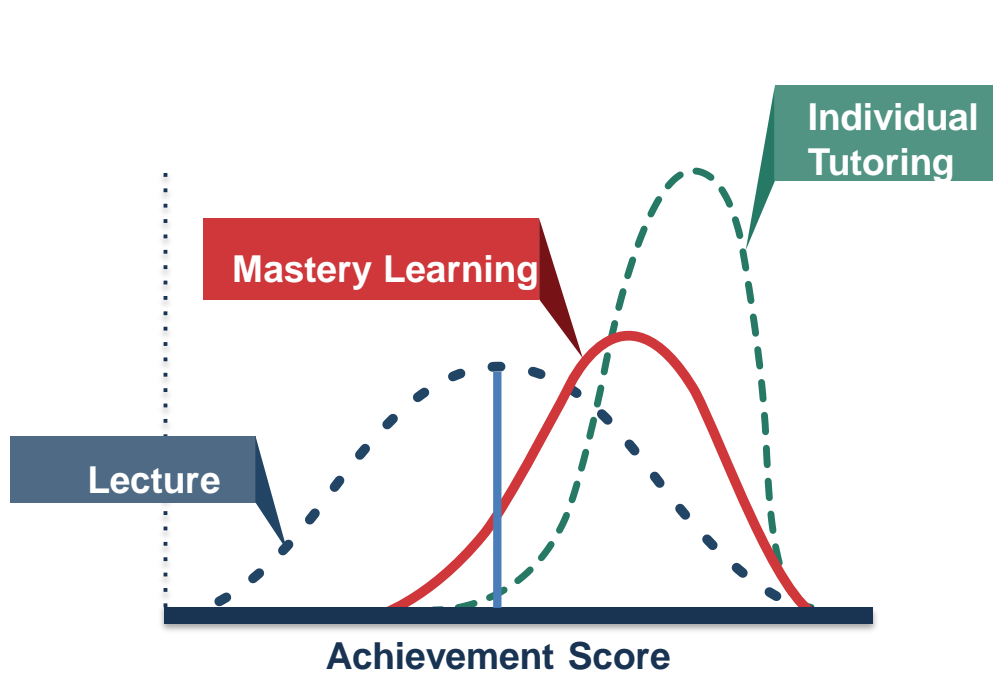
# Improving Learning

Wrong student answers



**New Window into Human Learning**

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

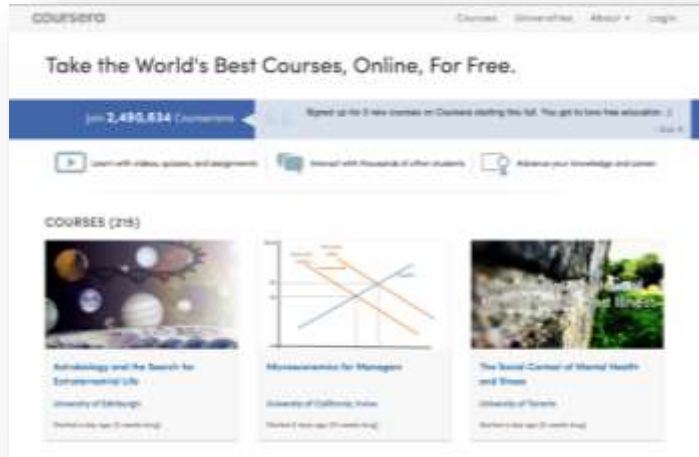


## The 2 Sigma Problem

“ 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





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



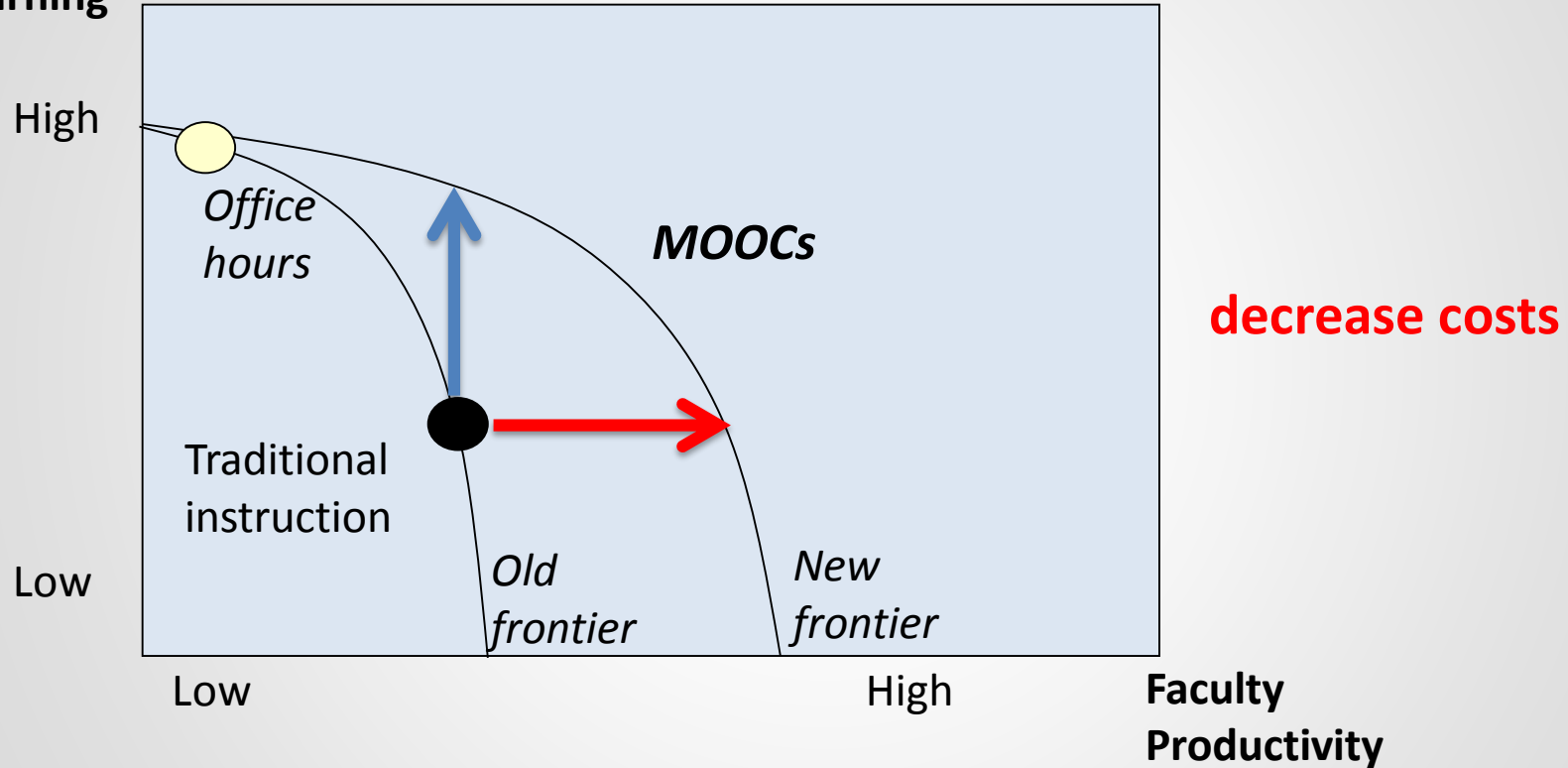
- High-touch interaction with local instructor
- Active learning, problem solving, personal attention to students

# The Best of Both Worlds

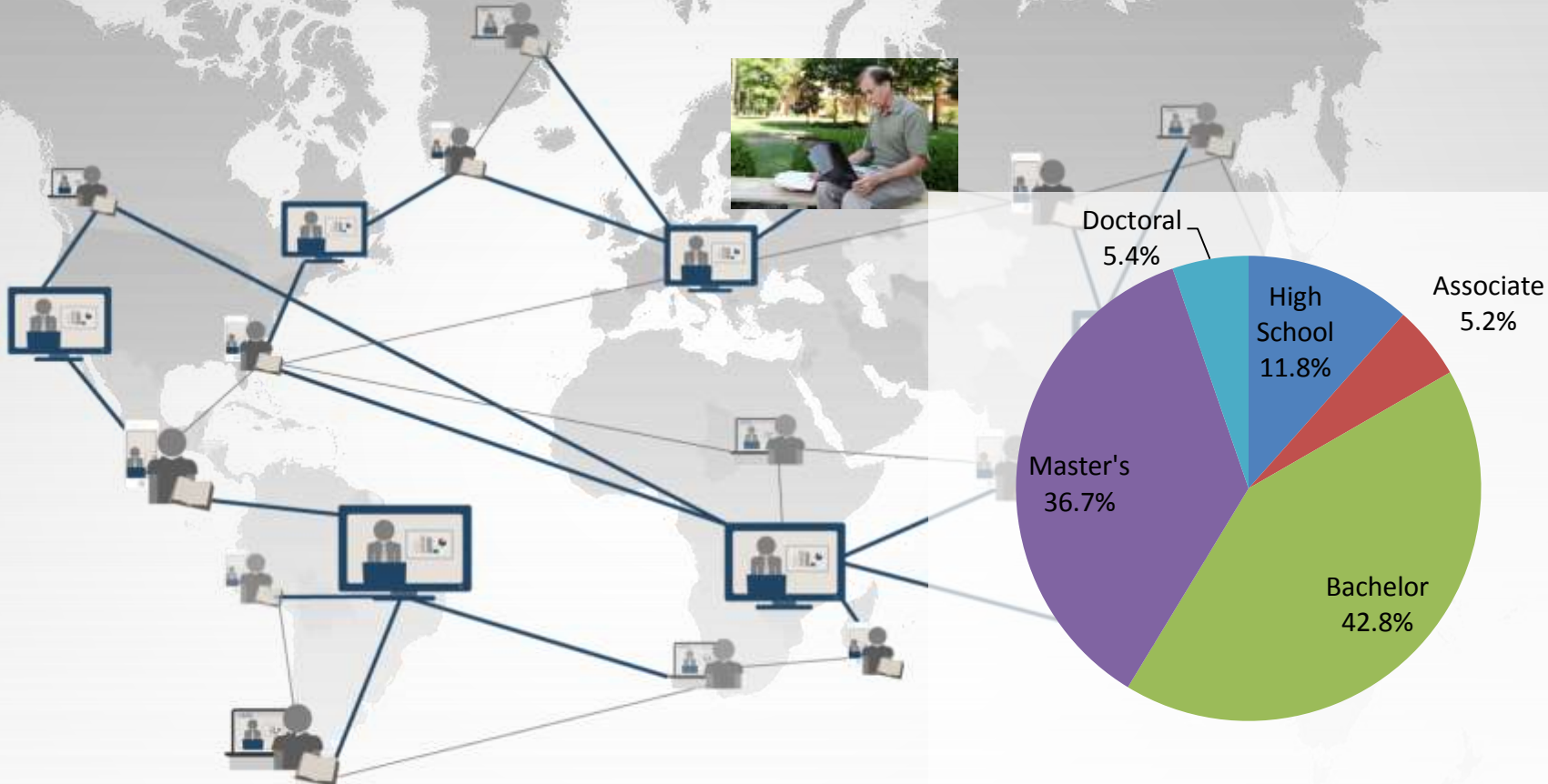


# improve learning

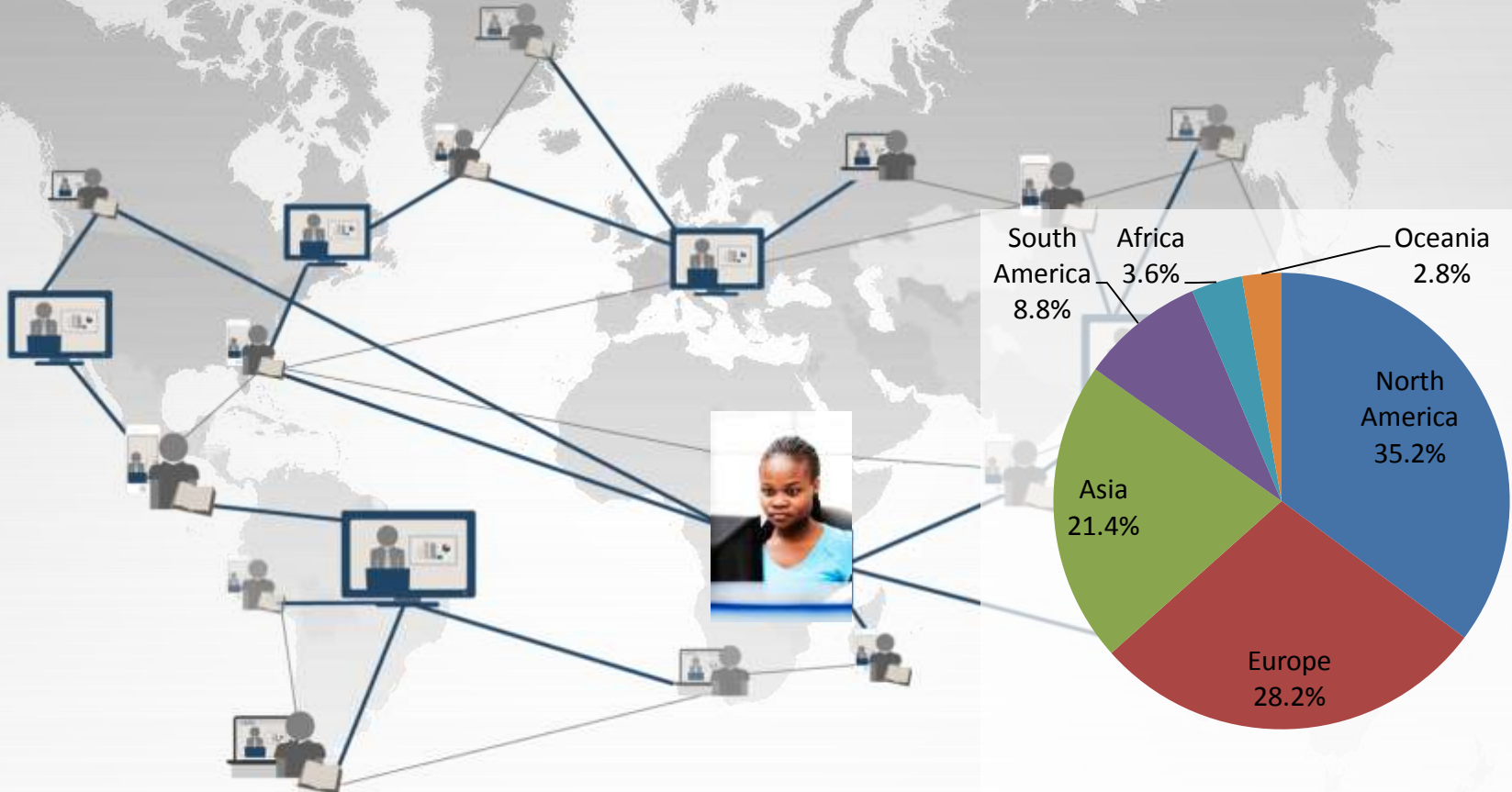
Student Learning



## A New Frontier for Education



# Lifelong Learning



**Education for Everyone**