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**62 Universities**

Discussion forum

**313 courses**

Video lectures

**2.7 million students**

Community

**196 countries**

**1.45 million enrolls/month**

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



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



UNIVERSITY OF  
TORONTO



National Taiwan University



Universitat Autònoma  
de Barcelona



THE UNIVERSITY OF  
MELBOURNE



a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



THE UNIVERSITY OF TOKYO



Technische Universität München



UNIVERSITY  
OF LONDON  
INTERNATIONAL  
PROGRAMMES



UNAM  
Universidad Nacional  
Autónoma de México



UNIVERSITÉ  
DE GENÈVE



NUS  
National University  
of Singapore



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



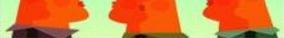
Universiteit  
Leiden



TECNOLÓGICO  
DE MONTERREY.



LMU  
LUDWIG-  
MAXIMILIANS-  
UNIVERSITÄT  
MÜNCHEN

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

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



## 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.

## 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:  $\frac{x \cos(x) - \sin(x)}{x^2}$

## Structured data

	A	B	C	D
1		2012	2013	2014
2	Units sold	20,000	30,000	35,000
3	Revenue	400,000	600,000	700,000
4	COGS	100,000	150,000	175,000
5	Ad spend	30,000	40,000	40,000
6				
7	<b>Distributor model</b>			
8	Sales People	1	2	5
9	Dist. per sales person	3	5	8

## Computer programs

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

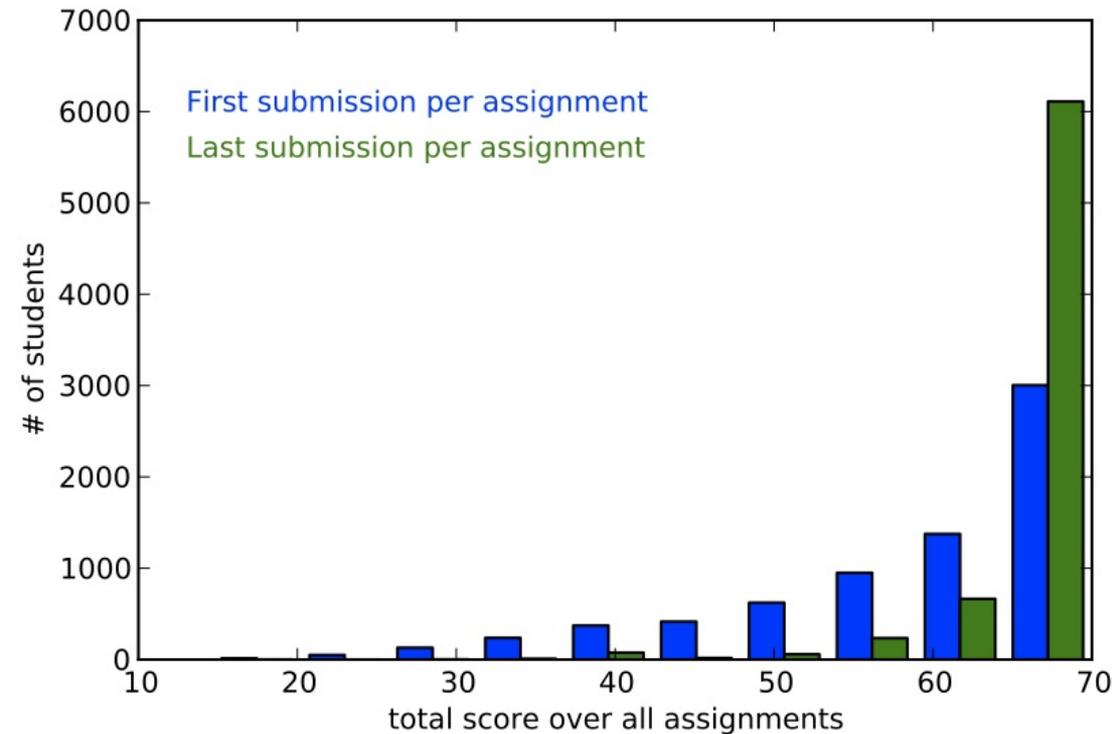
for (pixel: image) {
    // your code here
    pixel.setRed(0);
    pixel.setGreen(pixel.getGreen() * 10);

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

print(image);
```

Run

Autograded Homeworks and Exercises

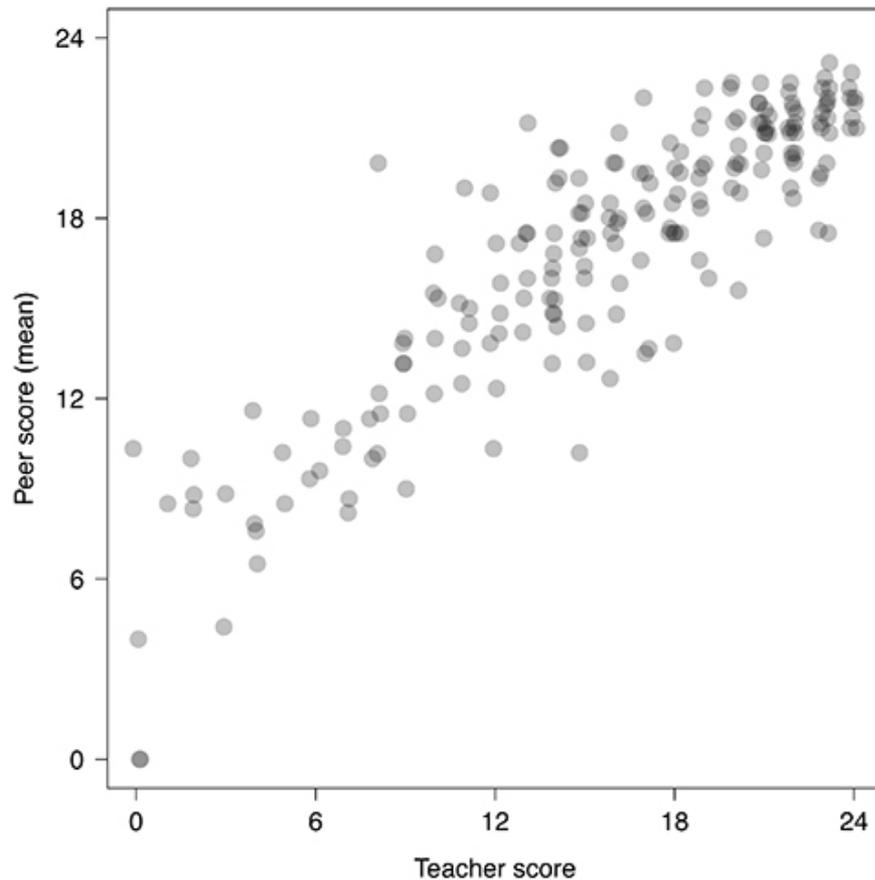


For students of similar current performance, mastery-based score improvements correlate with future performance



Mitch Duneier  
Princeton

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



# Peer Grading Accuracy (Soc101, Princeton)

## LaPtabel laptop table



Ramaswamy Venkatachalam  
Gujarat, India

## DuoSlim portable device holder



Aranzazu Hurtado Ruiz  
Madrid, Spain

## Neo-WD space-efficient workdesk

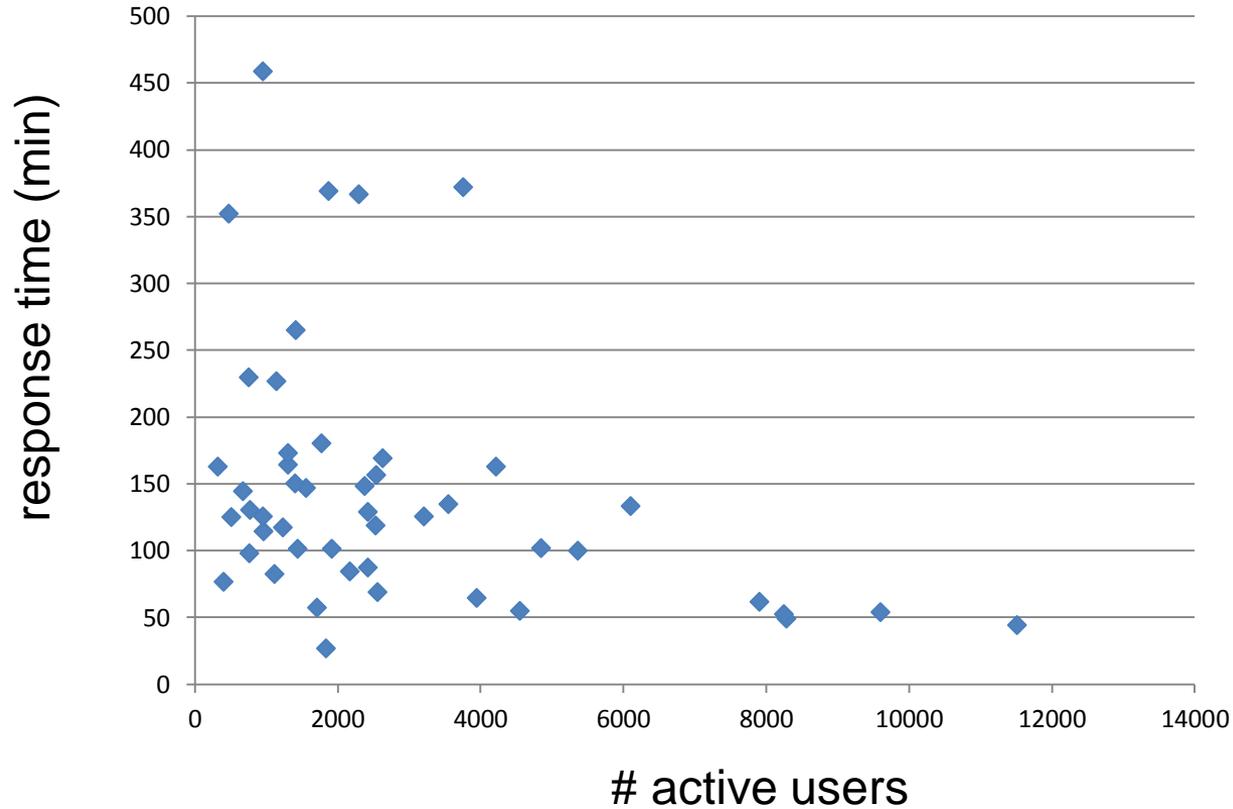


Paul Mendoza  
Manila, Philippines

**Creative, open-ended assignments via peer grading**

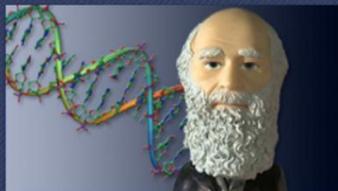


**Fellow students on these forums really gave the sense that I wasn't just sitting in my office working on it by myself. The spirit of cooperation and information sharing has been far more than any “non-virtual” course I ever took.**      *(Sanjaya Kumar)*



**Peer Teaching in the Large**

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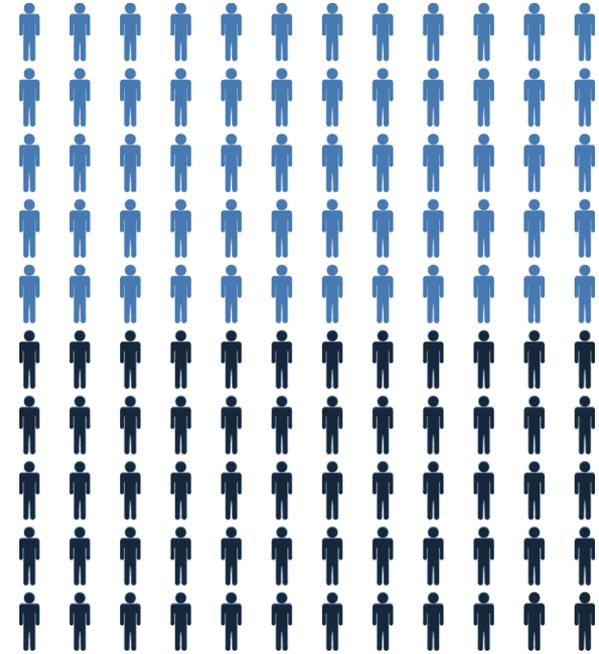
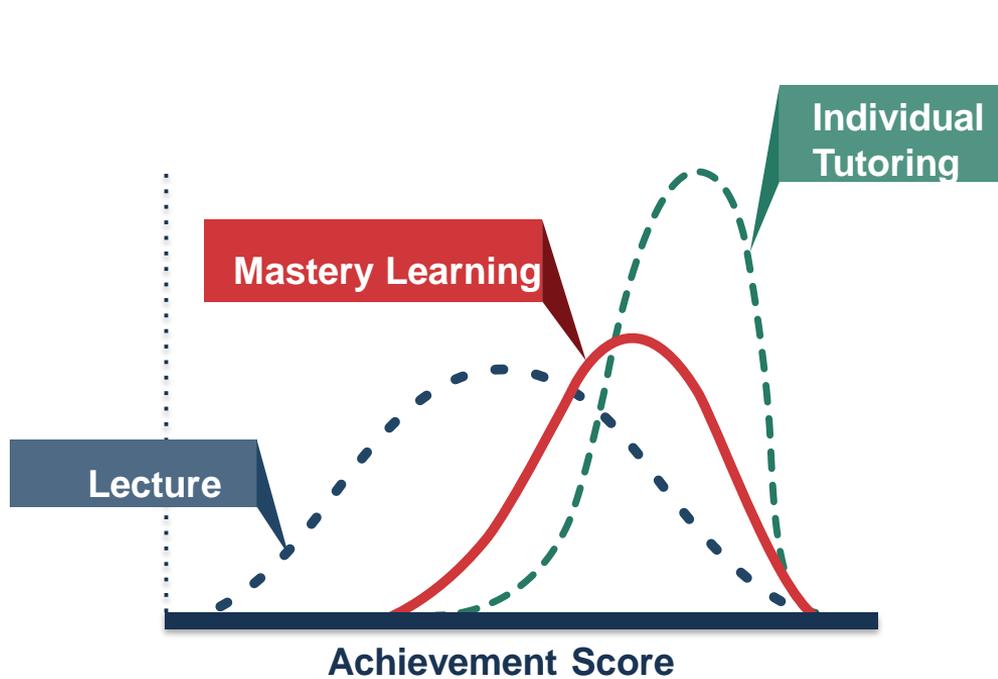
# Signature Track Courses



Digital webcam proctoring

**ACE CREDIT Assessment (review underway)**

"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

“ The mind is not a vessel that needs filling, but wood that needs igniting. ”

—Plutarch

*from Ian Kidd's translation of Essays*



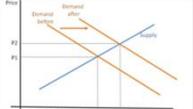
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**COURSES (215)**

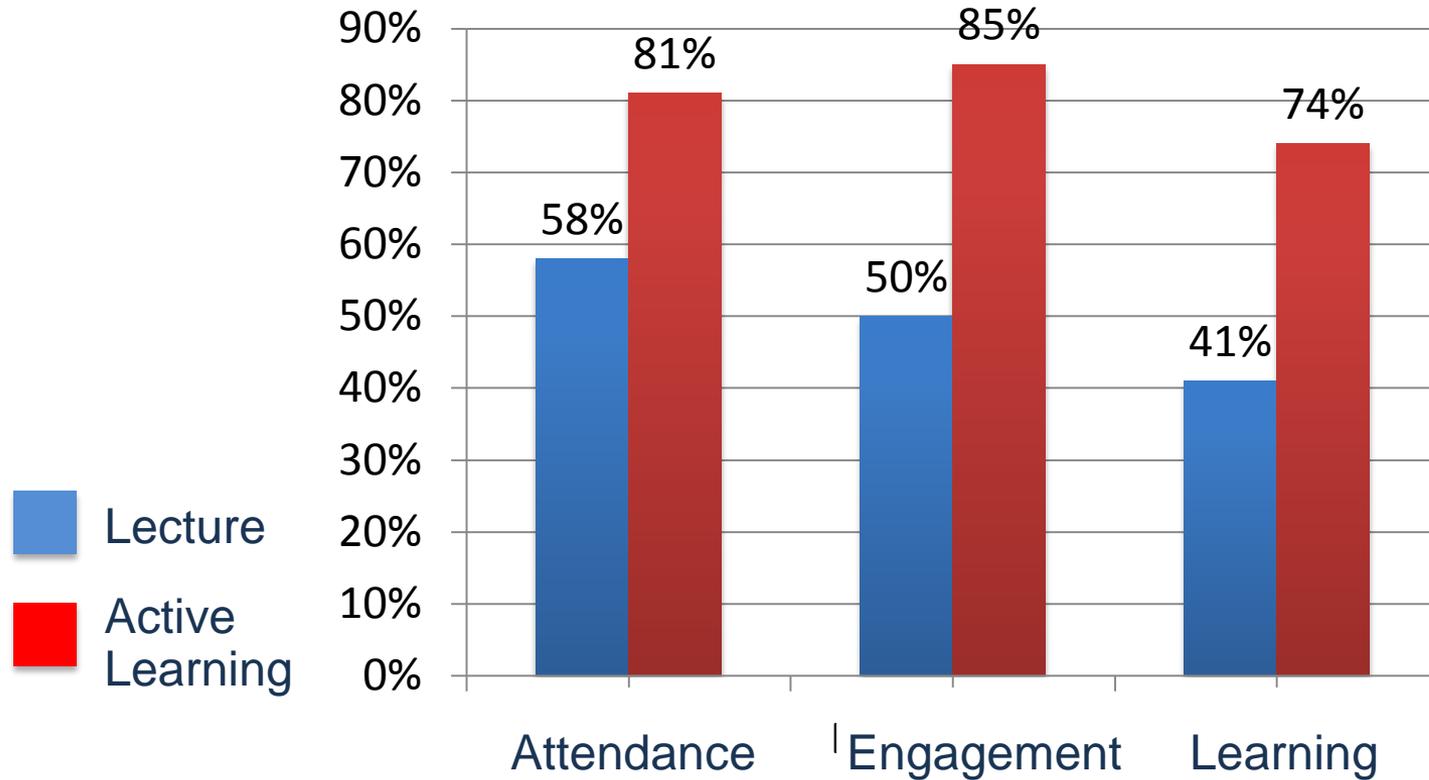
 <p><b>Astrobiology and the Search for Extraterrestrial Life</b> University of Edinburgh Started a day ago (5 weeks long)</p>	 <p><b>Microeconomics for Managers</b> University of California, Irvine Started 8 days ago (10 weeks long)</p>	 <p><b>The Social Context of Mental Health and Illness</b> University of Toronto Started a day ago (8 weeks long)</p>
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# Blended Learning

"Improved Learning in a Large-Enrollment Physics Class."

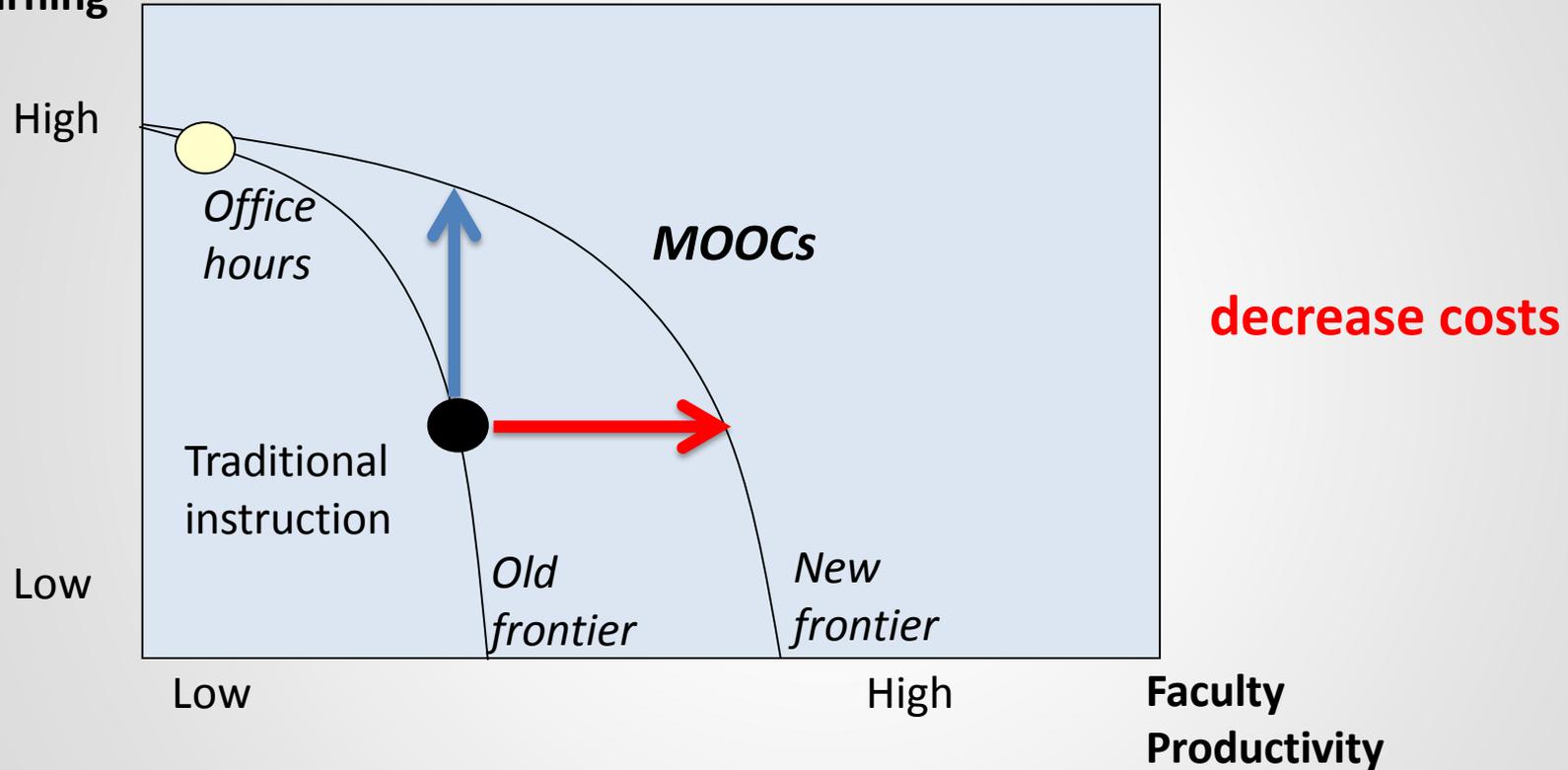
L. Deslauriers, E. Schelew, and C. Wieman. *Science* (2011).



**Active Learning in the Classroom**

# improve learning

Student Learning



## A New Frontier for Education