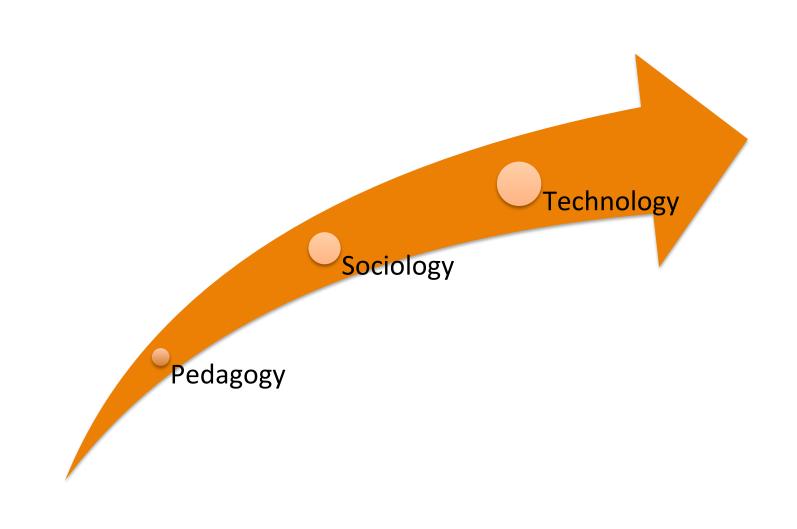
Mind blowing tech

T: @donaldclark

W: planblearning.com

E: donald.clark@hotmail.co.uk

W: wildfirelearning.co.uk



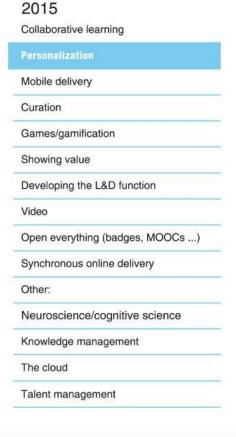
Artificial Intelligence Personalised learning



Results 2015-17: the year of personalization?

	2017
1.	Personalization/adaptive delivery
2.	Collaborative/social learning
3.	Micro learning
4.	Virtual and augmented reality
5.	Consulting more deeply with the business
6.	Showing value
7.	Mobile delivery
8.	Artificial intelligence
9.	Curation
10.	Games/gamification
11.	Neuroscience/cognitive science
12.	Video
13.	Developing the L&D function
14.	Personal knowledge mastery (PKM)
15.	Other:
16.	MOOCs

	016
C	ollaborative/social learning
Pe	ersonalization/adaptive delivery
C	onsulting more deeply with the busines
M	obile delivery
M	icro learning
G	ames/gamification
N	euroscience/cognitive science
Sł	nowing value
Cı	uration
De	eveloping the L&D function
Sy	ynchronous online delivery
Vi	ideo
Kı	nowledge management
M	OOCs
W	earable tech
0	ther:



1.	Personalization/adaptive delivery
2.	Collaborative/social learning
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MogAl

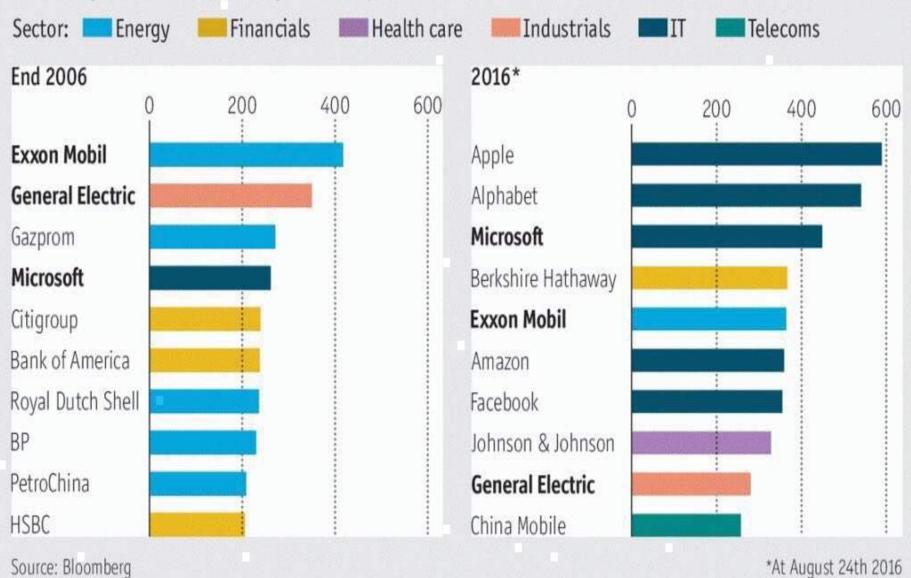






A virtually new world

World, largest listed companies by market capitalisation, \$bn



*At August 24th 2016

BCG's ten most INNOVATIVE companies 2016

- 1. Apple
- 2. Google
- 3. Tesla
- 4. Microsoft
- 5. Amazon

- 6. Netflix
- 7. Samsung
- 8. Toyota
- 9. Facebook
- **10. IBM**





10 things that make brains bad learners



- 1. 20+ yrs to educate
- 2. Inattentive
- 3. Cog. overload
- 4. Forget
- 5. Demotivated
- 6. Social & cog. Biases
- 7. Sleep 8 hours
- 8. Can't download
- 9. Can't network
- **10**. Die

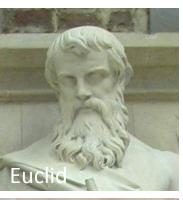




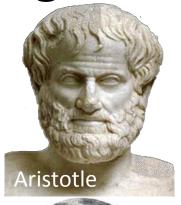


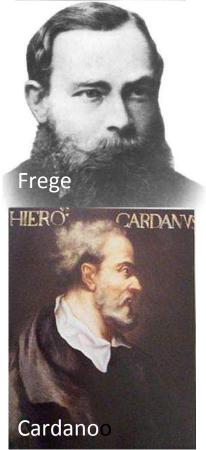


History of algorithms

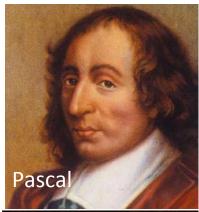


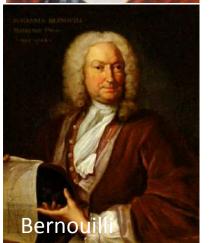




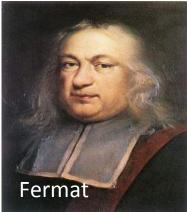




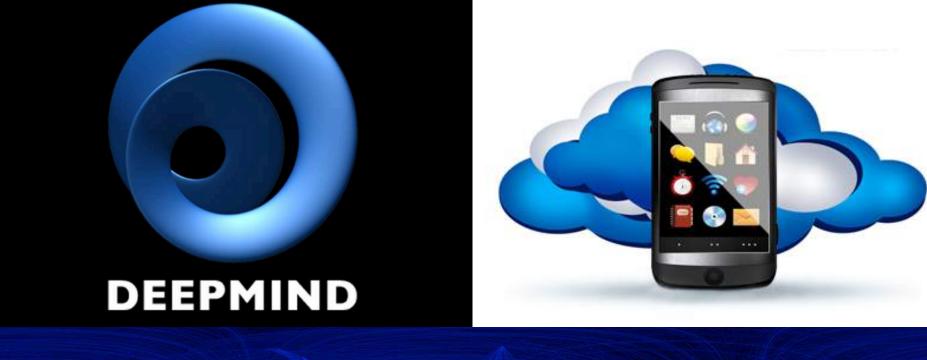












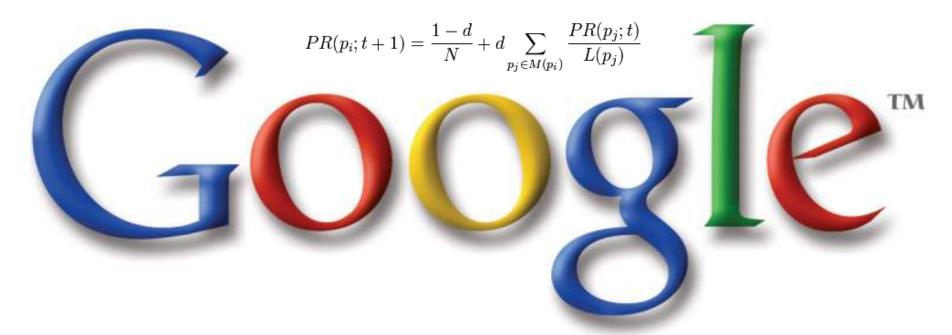


6 things Trainers do that AI will do

- 1. Answer questions find stuff
- 2. Student support
- 3. Good subject knowledge
- 4. Create and teach courses
- 5. Adapt to needs of all learners
- 6. Assess

6 things teachers do that AI will do

- 1. Answer questions find stuff
- 2. Student support
- 3. Good subject knowledge
- 4. Creat and teach courses
- 5. Adapt to needs of all learners
- 6. Assess











62 (m - 3) + 3m - 6 12 13m - 2(3 - 6m) $21. \ 9x - 7 = 13 - 4x$ chairs sells

price of the $X = \frac{20}{13}$ The table ind the price the a simile table with four chairs odd integers such that the was more than the combined price of A Find three consecutive odd inte 27 (3-x)(1 - 6)5. Give a reason for each step of the e O exp +0=0 0+1-0) The same

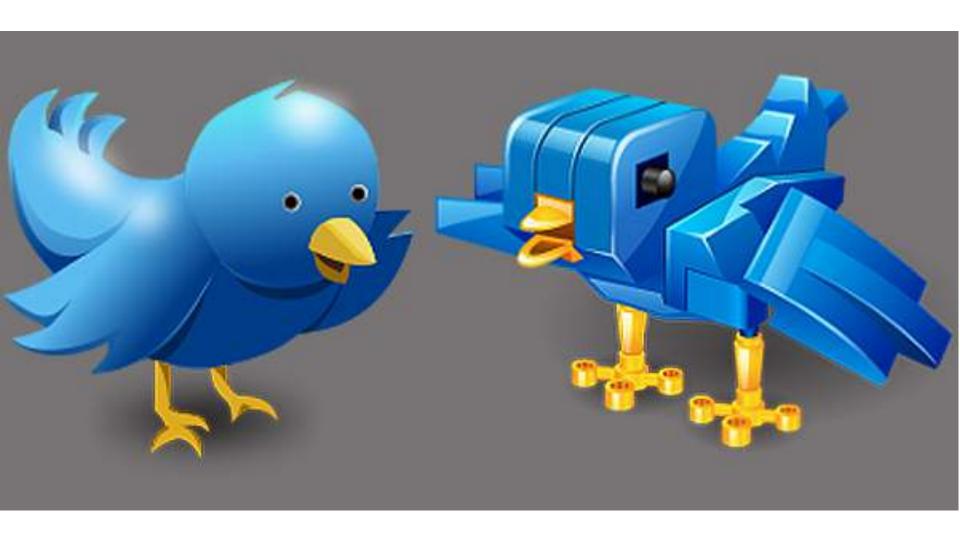
Chris Piech's team (Stanford & Google)

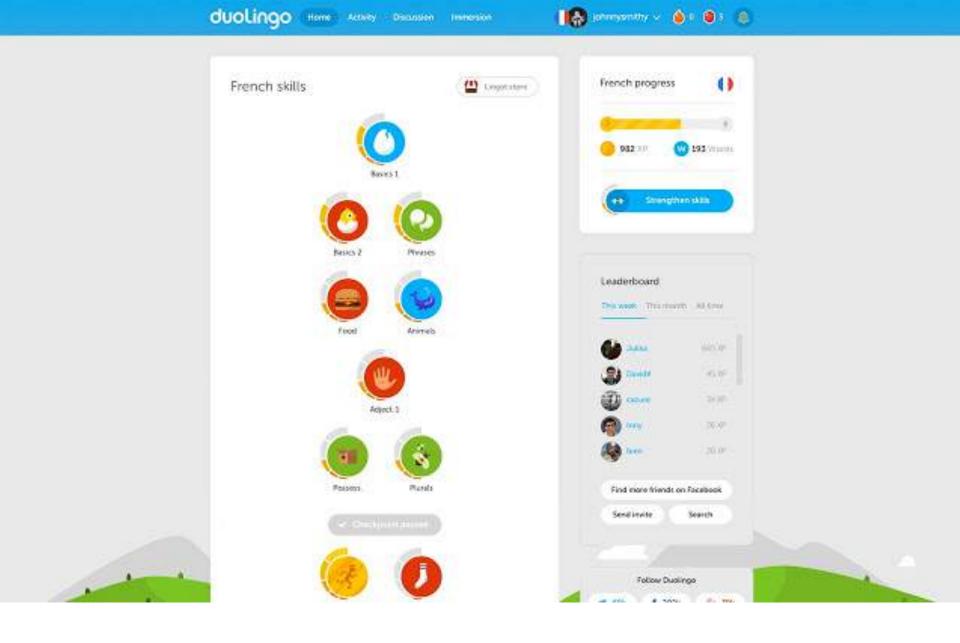
$$\chi'' - \chi^2 \sqrt{6} + \chi^2 \sqrt{2} - \sqrt{12}$$
 $\chi'' + (\sqrt{2} - \sqrt{6}) \chi^2 - 2\sqrt{3}$
 $\chi'' + \sqrt{2} \chi^2 - \sqrt{6} \chi^2 - \sqrt{12}$
 $\chi'' + \sqrt{2} \chi^2 - \sqrt{6} \chi^2 - \sqrt{12}$

1.4m answers Khan Academy Accuracy presently 85% Better than a teacher

6 things teachers do that AI will do

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46 languages

150M

Value 0.5B

duolingo

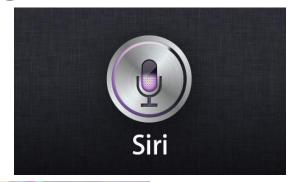


Say hello to Bots!

The most advanced way to learn a language.

Chat-bots

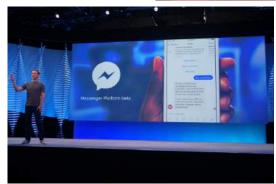


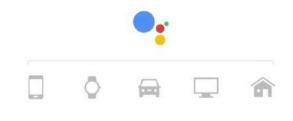






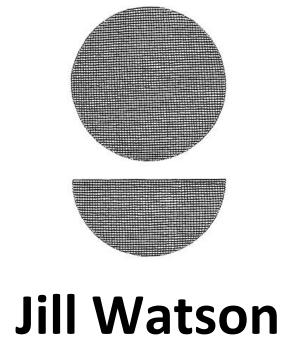












350 students
Online course 10,000 queries per semester
One year's work for a full time teacher

Four semesters of query data 40,000 questions and answers Bluemix (IBM's app development environment for Watson) Time delay!

Georgia Tech









6 teachers do that AI will do

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PREPARING FOR THE FUTURE OF ARTIFICIAL INTELLIGENCE

Executive Office of the President National Science and Technology Council Committee on Technology

October 2016



Al tutor learns from data provided by real experts

- Delivers one-to-one expertise
- Intensive 16-week course
- Al tutored learners

"frequently outperform Navy experts with **7-10 years** of experience in both written tests of knowledge and real-world problem solving.... by a wide margin"

Recommendation 3: to support R&D to determine whether AI and other technologies could **significantly improve student learning outcomes**.

Recommendation 4. Agencies should ensure that Federal employee training programs include relevant Al opportunities.

AR/NTR

Virtual Reality Augmented reality

AR: Hololens



Learning theory

- Attention total
- **Emotion** intense
- Learn by doing
- Context real
- Transfer to real world
- Retention increased



Why does VR matter?







VR is a mediumnot a gadget

Learning theory

- Attention total
- **Emotion** intense
- Learn by doing
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- Transfer to real world
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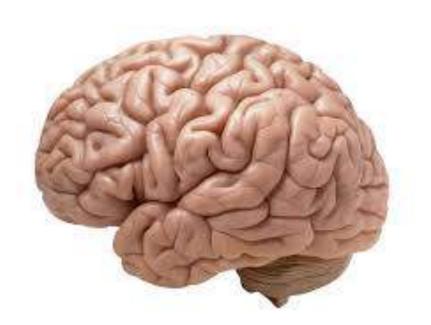






Learning theory

- Attention total
- Emotion intense
- Learn by doing
- Context real/imagined
- Transfer to real world
- Retention increased



Functional needs

- 1. Immersive photographs
- 2. Immersive moving video
- 3. Immersive graphic worlds
- 4. Navigate through worlds
- 5. Hotspots
- 6. Manipulate objects
- 7. Avatar interaction
- 8. Multiplayer interaction
- 9. Create things
- 10. Hybrid real/virtual VR

6 things teachers do that AI will do

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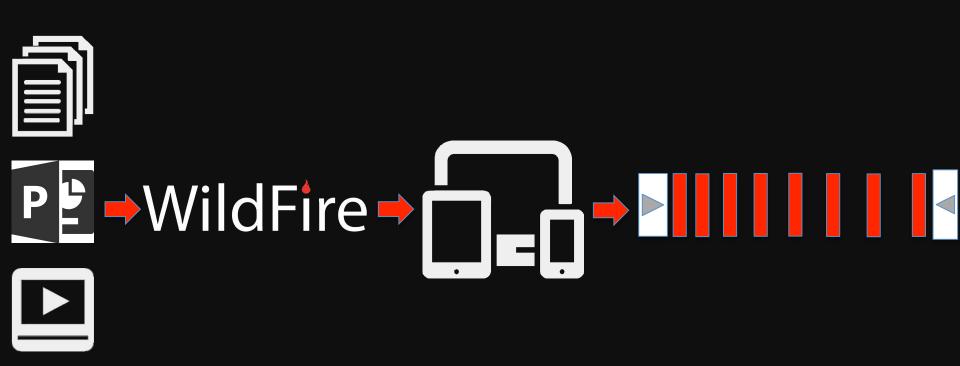
...then curation

Al curates links to:

- Google
- YouTube
- TED
- Khan
- Wikipedia
- Documents

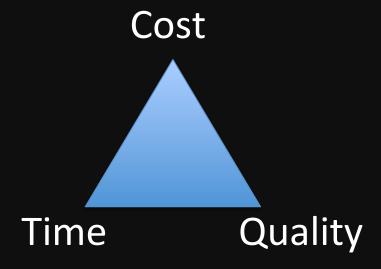
ANT text or video

...then spaced practice



wildfirelearning.co.uk

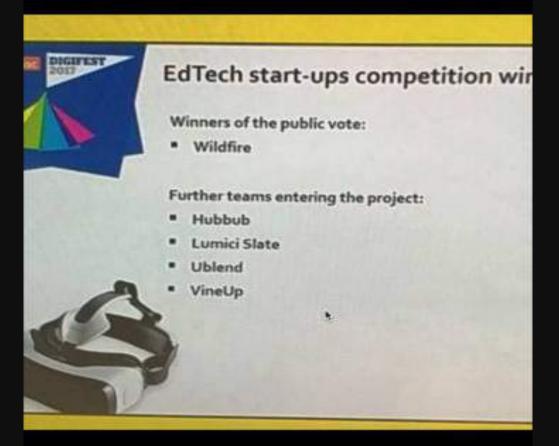
WildFire



Radical reduction in production times (minutes not months)
Maintains or increases quality (high retention)
Huge decrease in costs (15-20%)

WildFire





Most Innovative
New Product
Learning Technologies

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CogBooks[™]

The Product

About Us

Blog

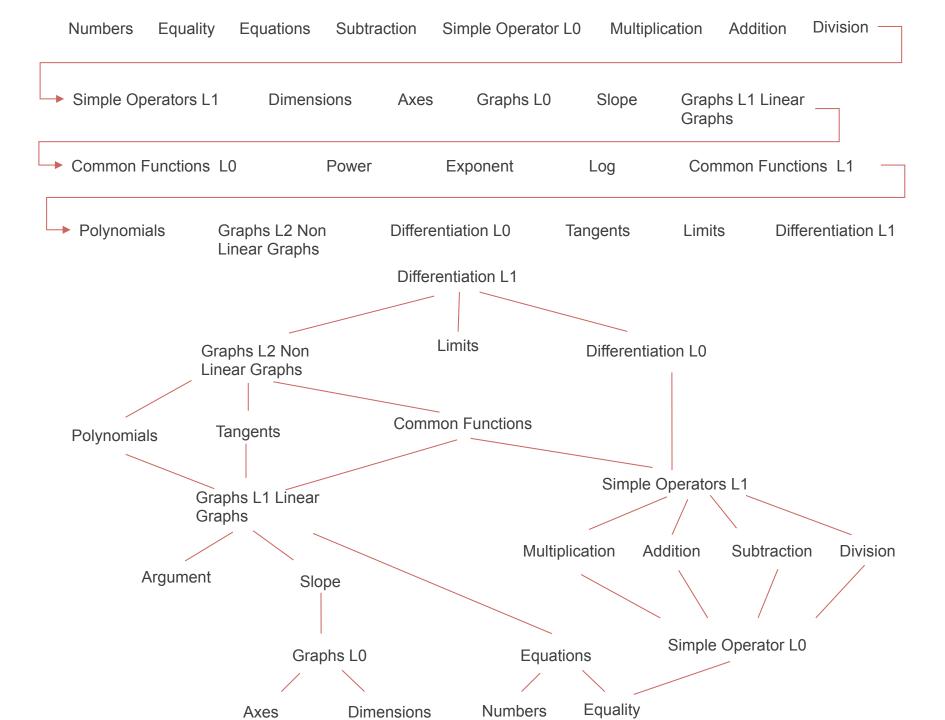
White Papers

Contact

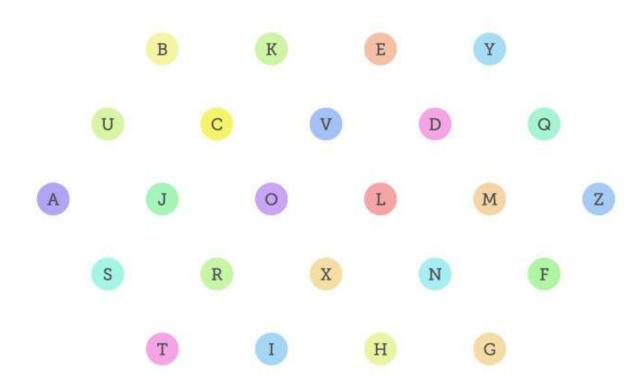
Sign in



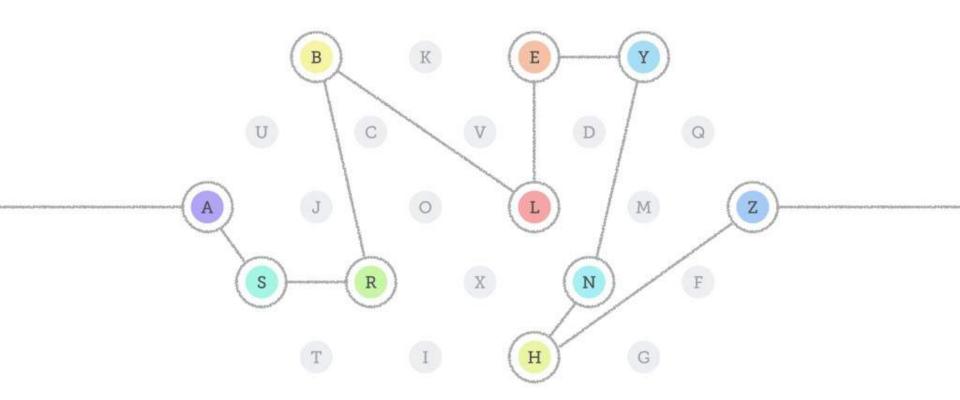
COGBOOKS.COM



Adaptive sets you free from the A to Z



Adaptive sets you free from the A to Z

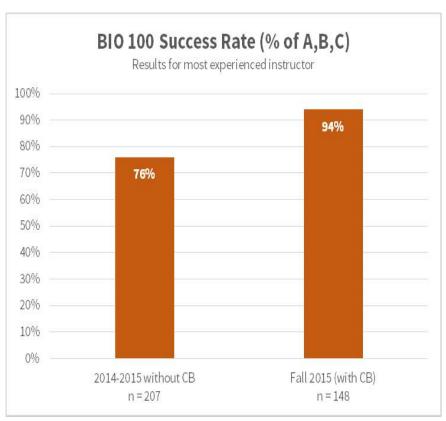


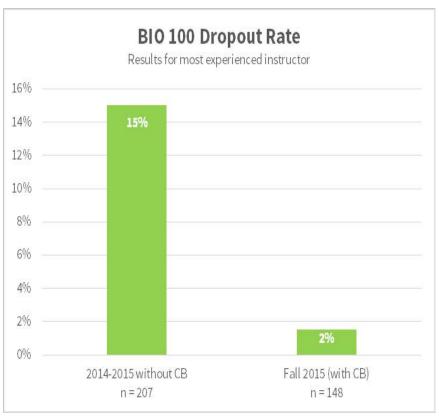
It understands you – and finds the best way through



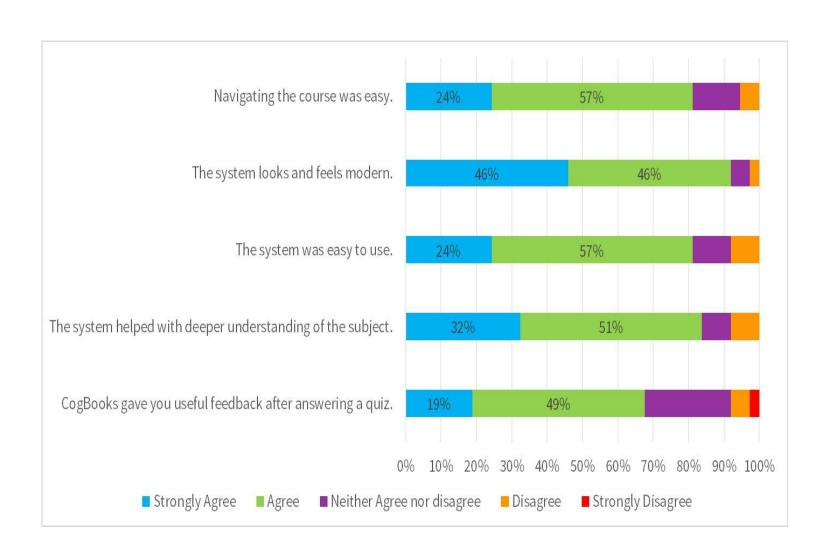
ARIZONA STATE UNIVERSITY

Results of most experienced instructor





Student Survey Results



AI EXAMPLE Best piece of online learning ever?

Risk problem – existential threat

Major Global Bank

\$1,000,000,000 fine

Compliance training does NOT work 200,000 people do high risk work Solve problem without spiralling costs?

Training the powerhouse of productivity

Immersive Simulations



- Realistic practice scenarios
- Adaptive to performance
- Forensic behaviour monitoring

Evidence led Action



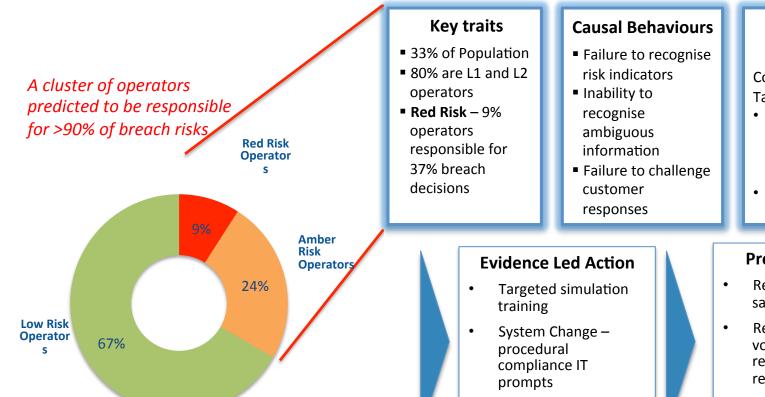
Analytics and Reporting

- User and Manager system
- Intelligent feedback, reports, diagnostics
- Assessment & certification
- Early warning notifications

Performance Intelligence

- Business performance insights
- Identify cost saving/ risk / revenue drivers
- Top performers, key skills gaps, predictive analytics

Performance Impact Intelligence transforms risks and efficiency in Sanctions Screening



Performance Drag

Contribution to Targets:

- transactions predicted to contribute 30% of FCC case volume
- Performance drag-70%

 Consequences Management

Predicted Impact

- Remove 30 personnel save \$1.5m
- Reduce FCC case volume by 20-25% by reducing incorrect referrals
- Reduce reportable incidents by 50%

Scientific Performance: Analysis, Actions,
Outcomes

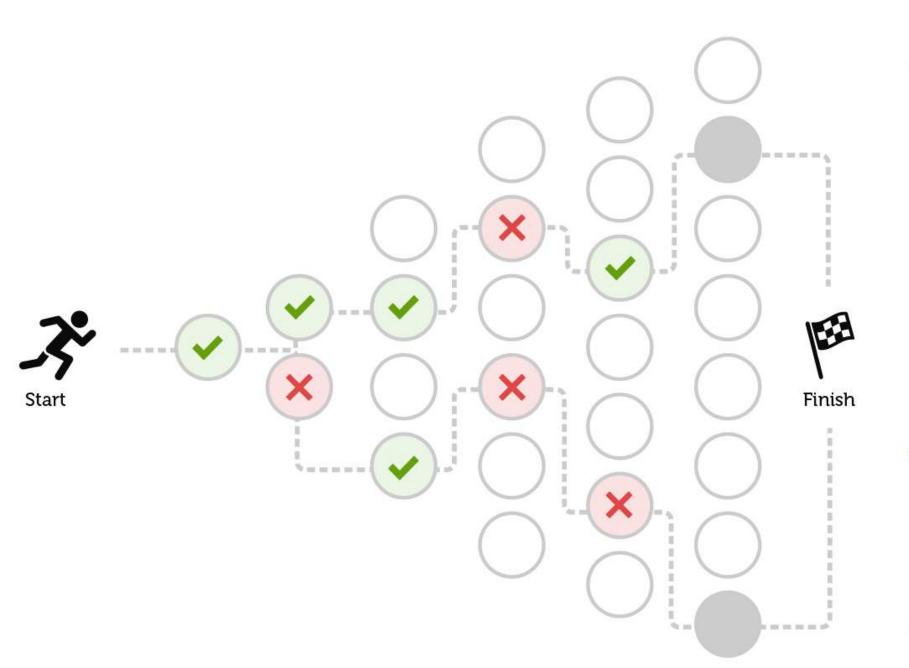
6 things teachers do that AI will do

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"If only I had a few more papers to grade" said no teacher ever.

AUTOMATED ESSAY MARKING

ADAPTIVE TESTING







10 things AI do that teachers can't

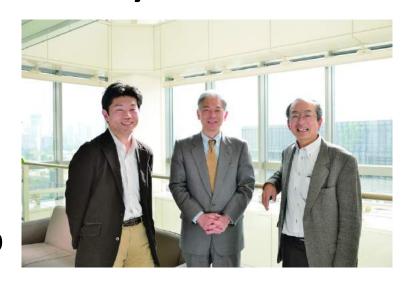
- 1. Largely free gender, race, cog biases
- 2. Never forgets
- 3. Never sleeps, tires, ill, bored
- 4. Do things that brains cannot
- 5. Personalize learning & reporting
- 6. Automatically improves courses
- 7. Network
- 8. SCALE
- 9. Always gets better
- **10.NEVER DIES**

Todai Robot Project (Noriko Arai)

Passed entrance exam: Tokyo Univ.

Maths, Physics English & History

53.8% v human 43.8%



Can Al replace graduate-level jobs?



Resistance IS futile!