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High Tech / High Touch

The Potential Power of Artificial Intelligence to Personalize Learning for Every Child

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and Management
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Commission
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Shifting environment and need for new skills

40%

Employers

Already find it difficult to
recruit people with the skills
they need

65%

Children entering primary school

Will work in jobs that do not
exist yet

1st

Industrial revolution

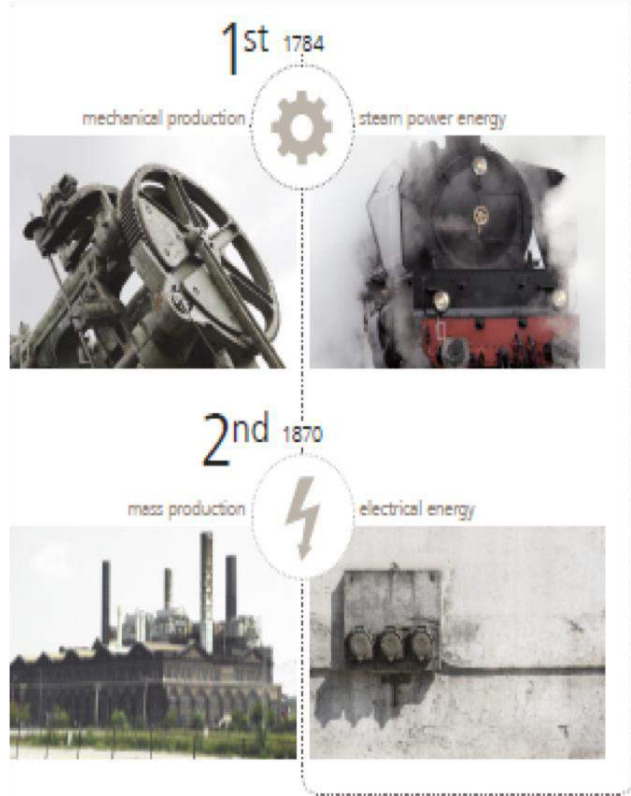
Current classroom and
schooling models designed
almost 200 years ago

From Learning Crisis To Learning Generation

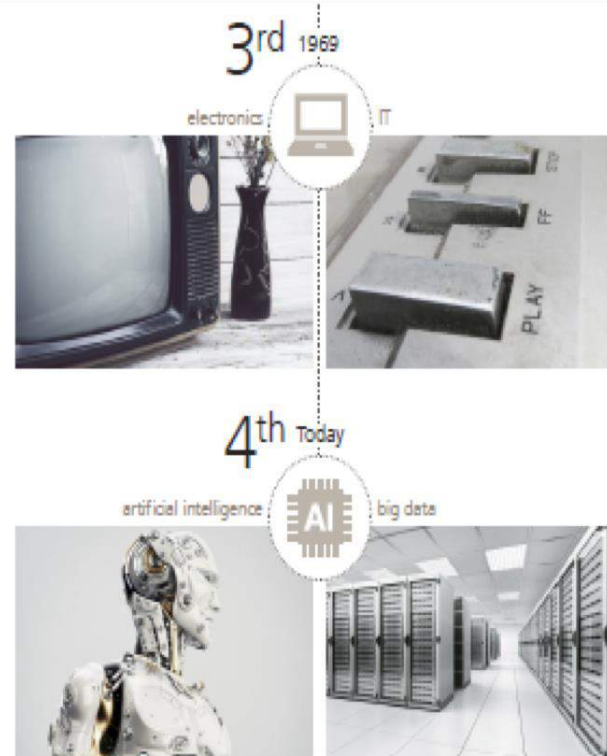
- **The Education Commission** sounded solemn warning that by 2030, 825 million young people, roughly half of young generation today, would reach adulthood without skills they need to thrive in work and society.
- One of the root causes of the global learning crisis is the system failure of the **mass production model** of the classroom, where teachers deliver uniform and standardized content through lectures for the students in the classroom with little space to adjust for of their potential and needs.
- Our **next generation** should benefit from **mass personalized learning** in schools, taking advantage of innovative pedagogies that have been accumulated for decades and education technologies that have advanced at an amazing speed.

Fourth Industrial Revolution requires and enables mass customization in education

From Mass Production System



Toward Mass Customization System



Personalised learning has been tried for decades but has not been provided at a mass scale for every student

From Mass Production to Mass Personalization

Learn to Test



Learn to Learn

Shallow Learning



Deep Learning

Vertical Learning

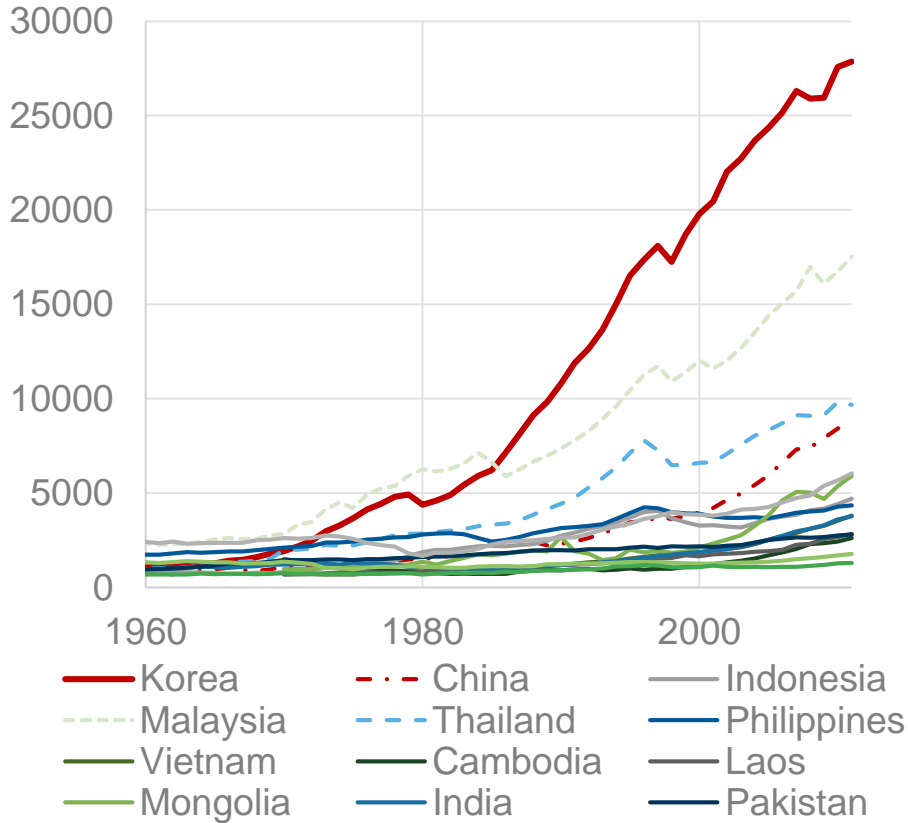


Horizontal Learning

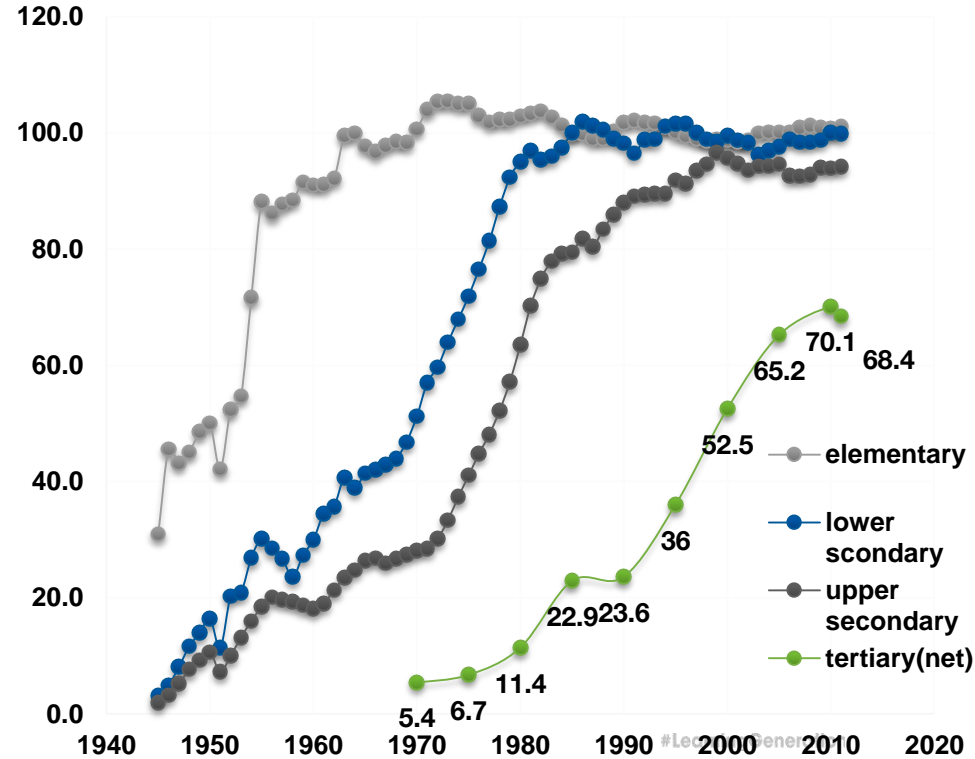
South Korea's achievement of both sustained economic development & democracy is mainly due to its investment in people

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Korea's Per Capita GDP increase compared to other Asian Countries

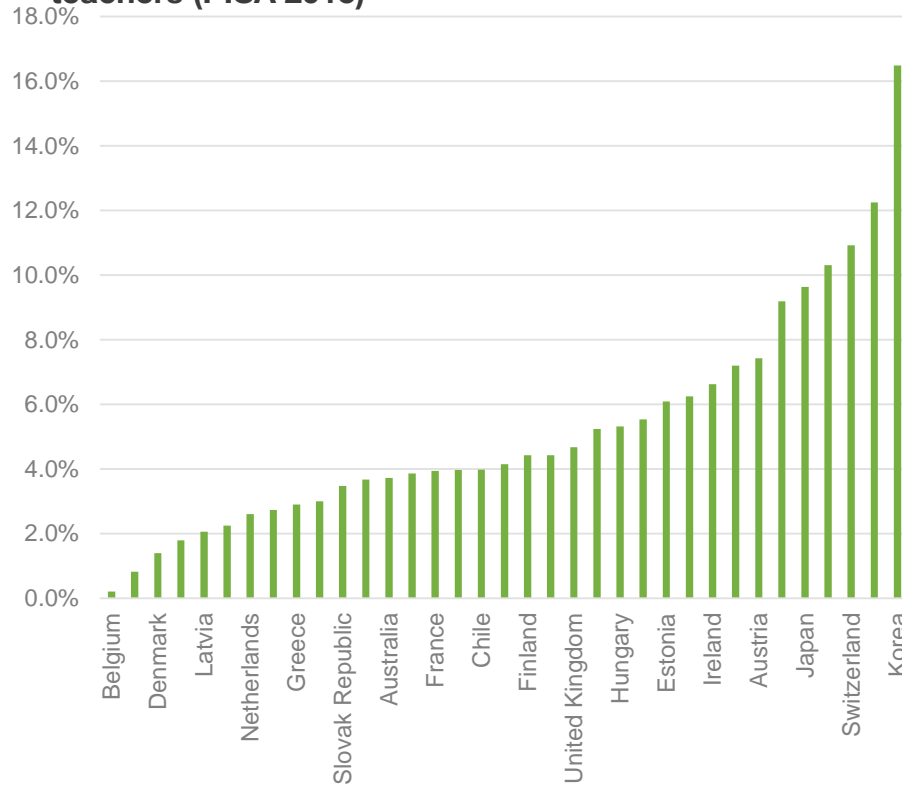


Korea's enrollment rates increase: good example of progressive universalism

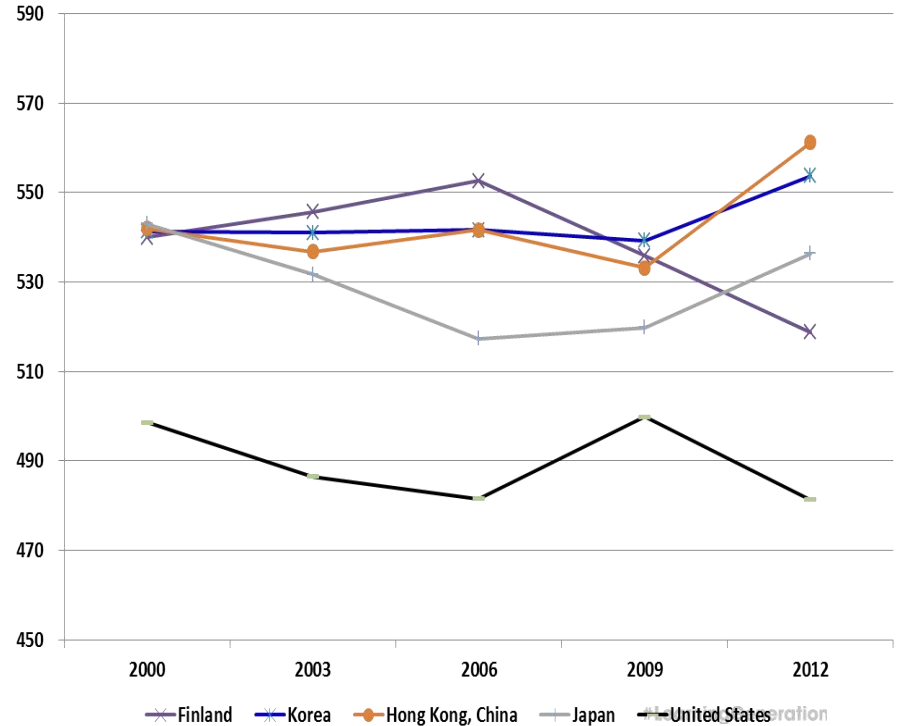


Teachers were at the heart of the remarkable performance of Korean students

Proportion of top 5 % students aspiring to become teachers (PISA 2015)



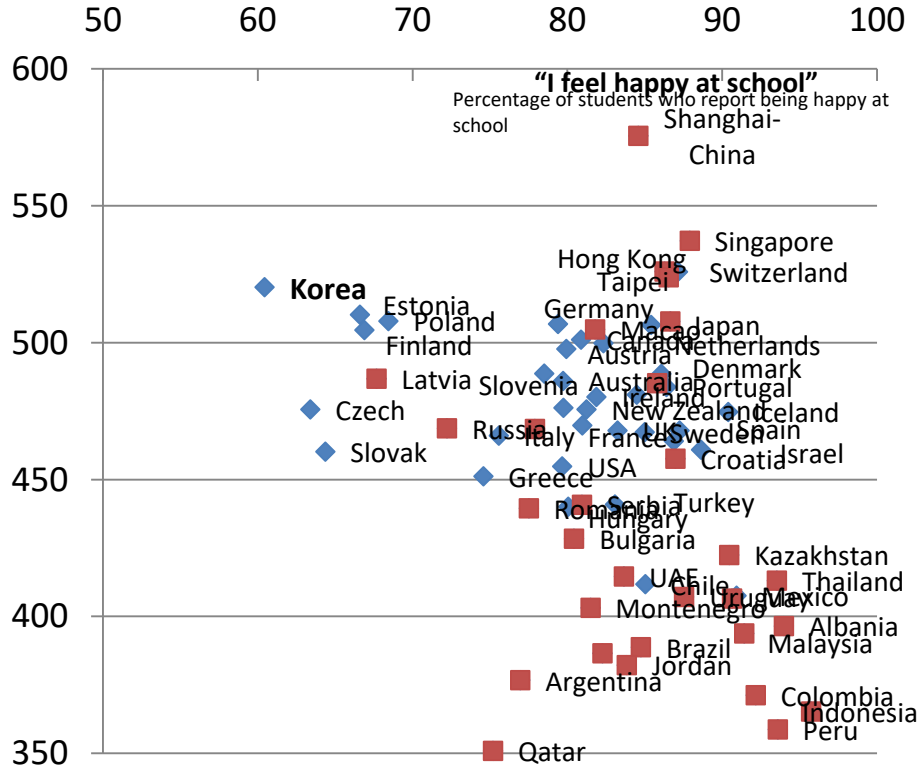
Korean students' average scores of reading, math and science on top in PISA



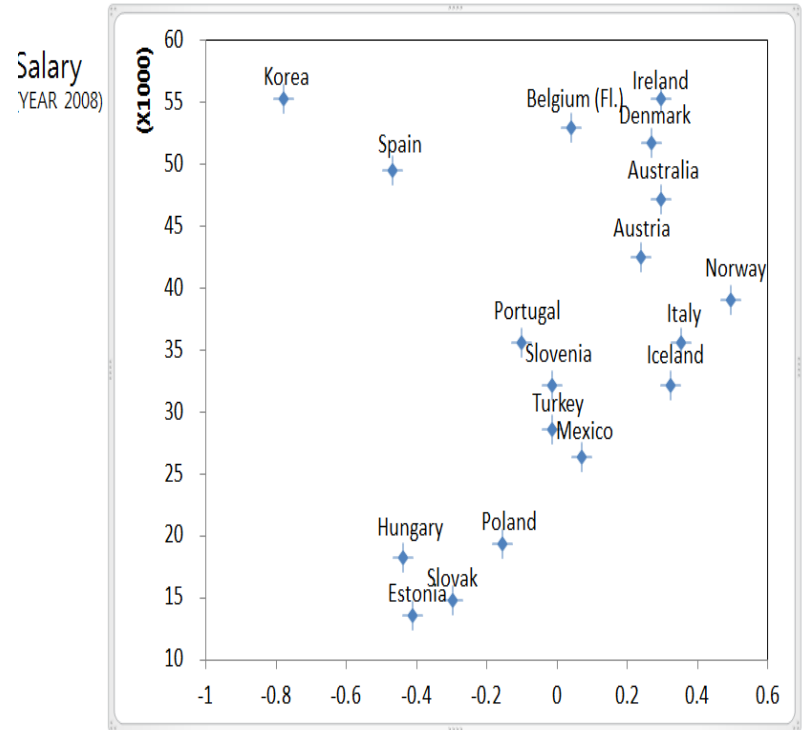
Education system geared towards mass production system has dropped students' happiness and teachers' self-efficacy in Korea

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Korean students are not happy despite high Maths scores



Korean teachers are losing self-efficacy despite high

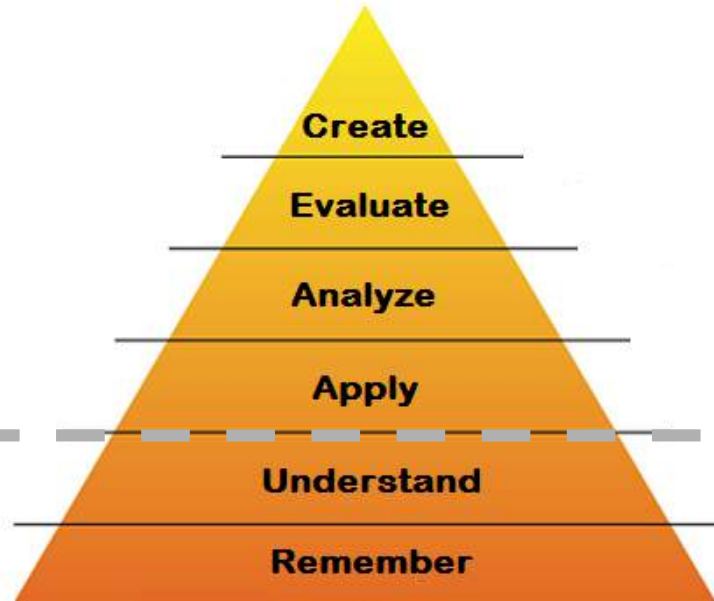


Promising results with “High-Touch and High-Tech” Learning

Innovative pedagogies (High Touch) can be combined with the cutting-edge education technology (High Tech) for massive personalized learning

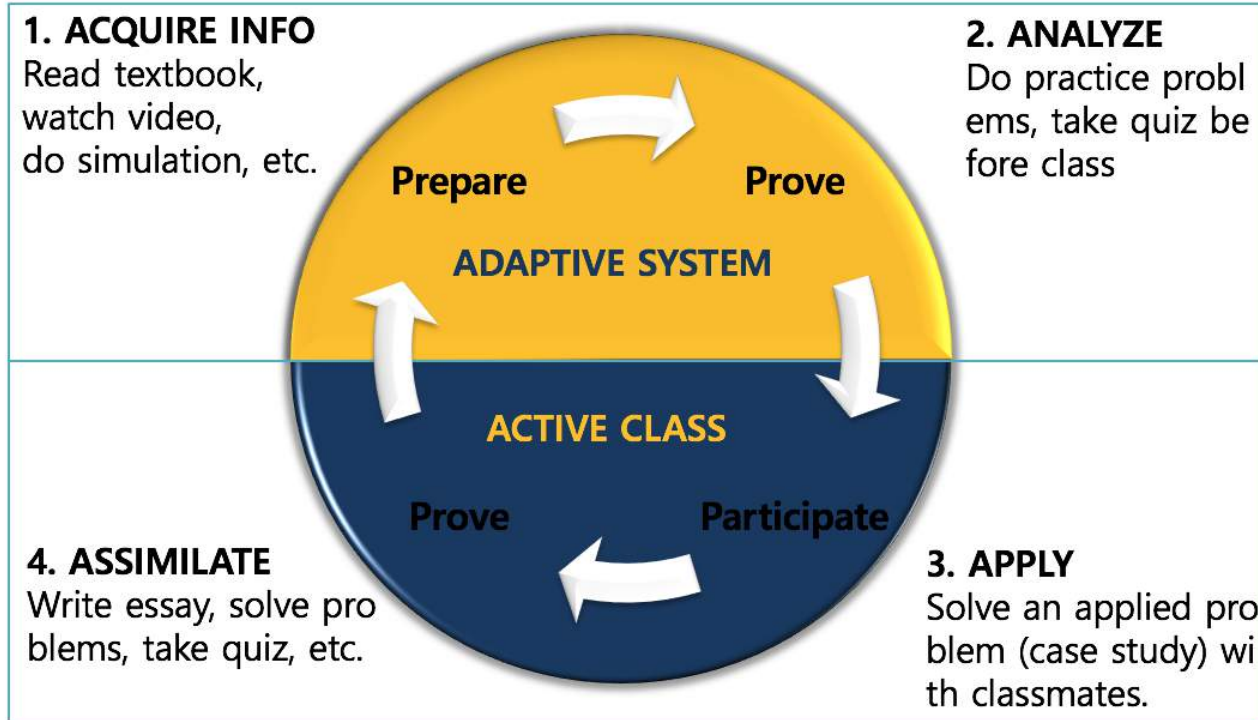
High-Touch
(Project-Based Learning)
With Teachers

High-Tech
(Adaptive Learning)
With AI and Mobiles



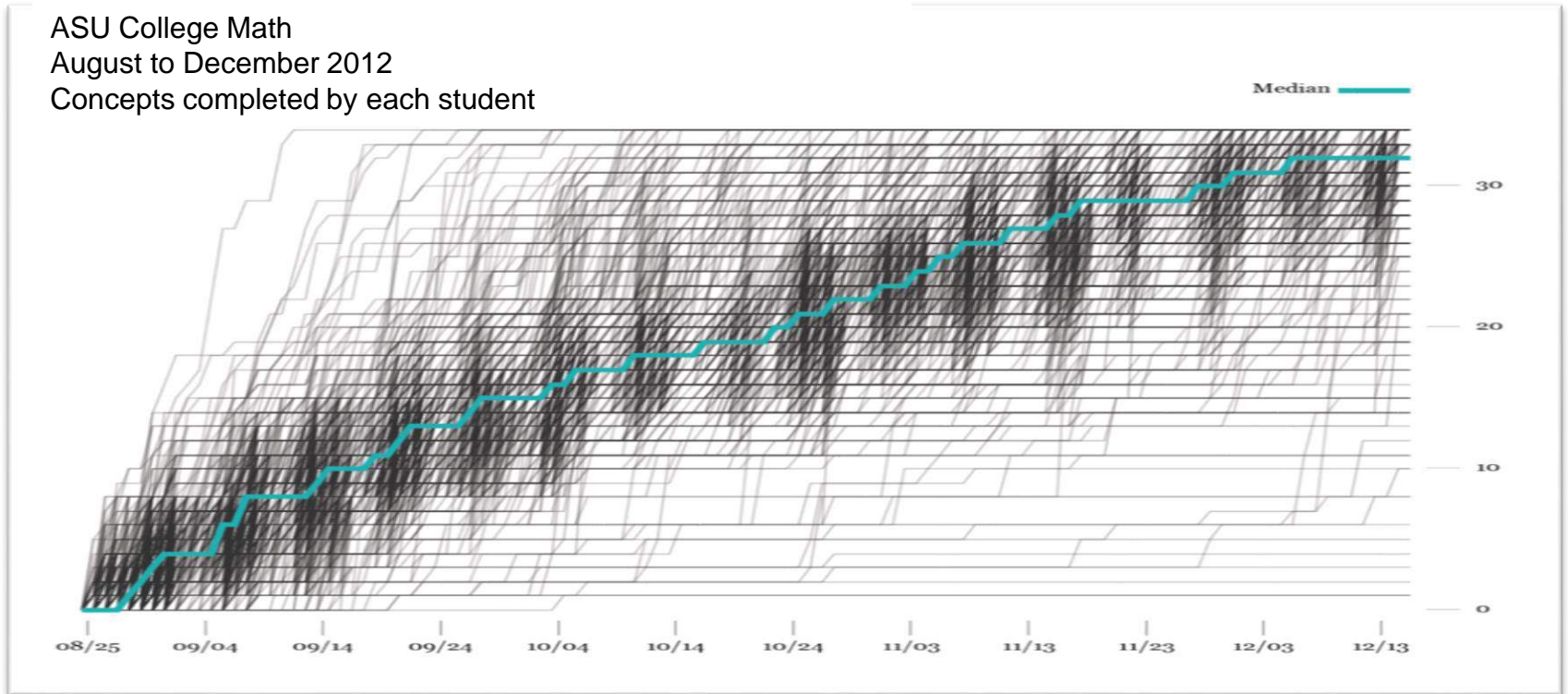
Bloom's Taxonomy

How does this approach work in practice?



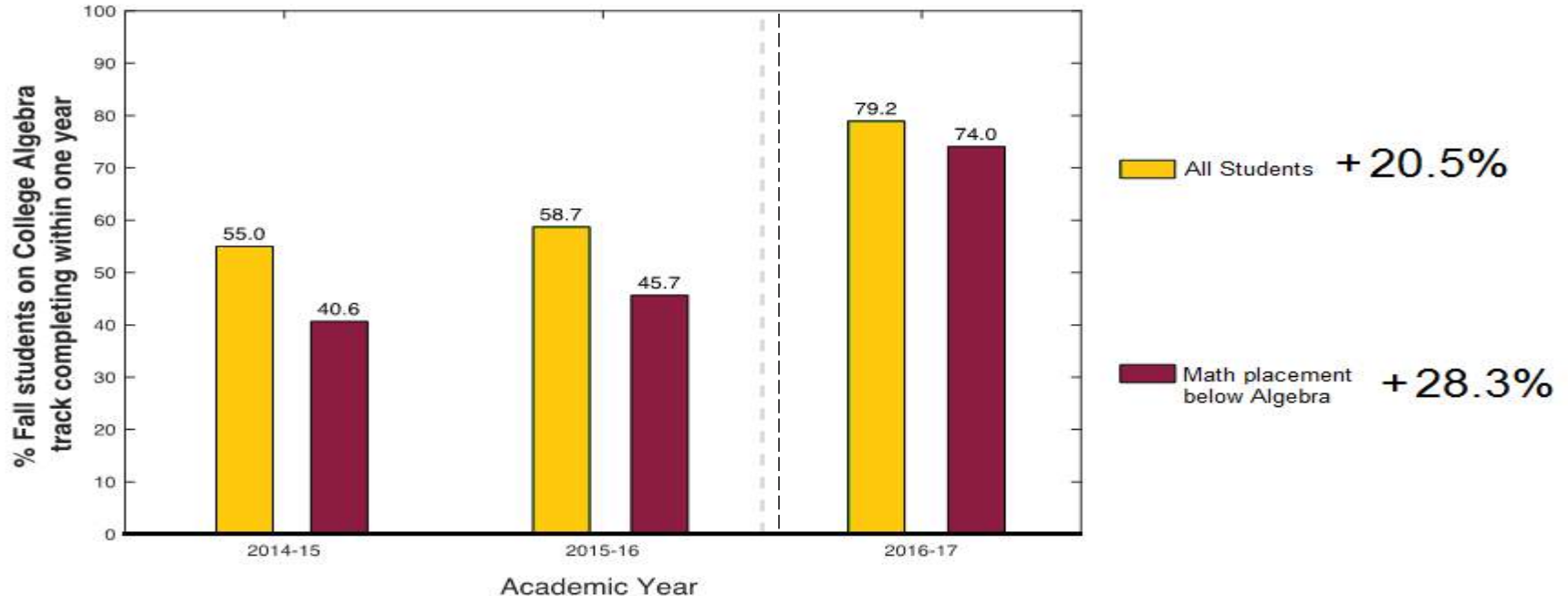
Over 65,000 students have benefited from adaptive learning systems with optimized learning paths for every student at ASU

ASU College Math
August to December 2012
Concepts completed by each student



After ASU switched to ALEKS adaptive learning system in College Algebra, the completion rate has increased by 20.5% on average, and by 28.5% for those with Maths placement below Algebra

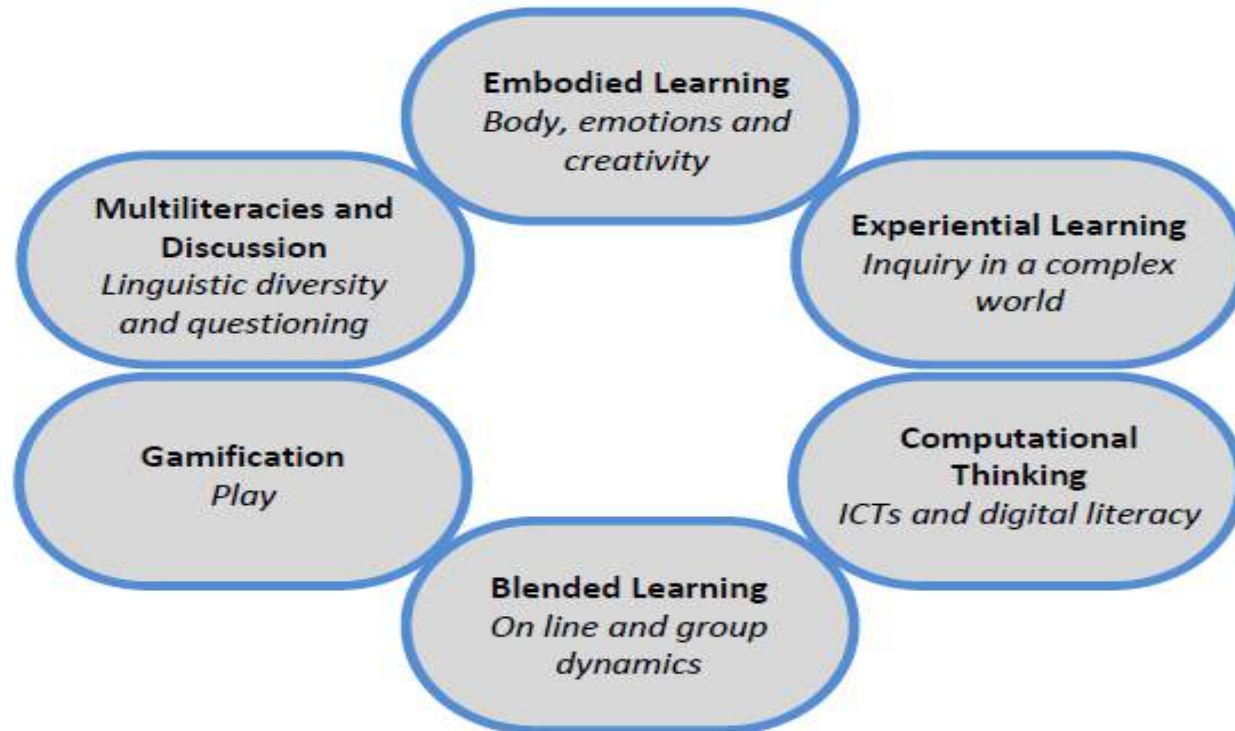
College Algebra – Fall '16 switch to ALEKS adaptive math system



* ~ 5000 students per year; Same curriculum and assessments

The success of ASU hinges on the combination of AI technologies with innovative pedagogies of professors (teachers)

Figure 4.1. Clusters of innovative pedagogies



Global Action for a Learning Generation

- Even the education workforce in an exemplary country like Korea cannot meet the demands by students and society, the international community should take action in **collectively designing and strengthening education workforce.**
- The Education Commission's **Education Workforce Initiative** is aiming to contribute to the new thinking through an **Education Workforce Report and piloting an adaptive learning prototype with the Vietnam Ministry of Education and Training** for 7th grade Maths.
- Rather than inducing low and middle income countries to follow the traditional learning model, the international community should encourage them to work together to **explore new paths for future learning.**
- We need **global action that connects educators, business, civil society and policy makers** in order to massively provide the personalized learning opportunity for everyone.
- National governments, international organizations and philanthropic foundations should work together with innovators for future learning in order to **co-design the prototypes, demonstration cases, and best practices and rigorously evaluate and take them to scale if proven.**

Thank You.

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