"21st Century Education"

What should students learn in the 21st Century?

A colloquium of the CENTER FOR CURRICULUM REDESIGN

in collaboration with the BUSINESS AND INDUSTRY ADVISORY COMMITTEE TO THE OECD (BIAC), and the OECD CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION (CERI)

Sponsors:
BIAC
Foundation Henri Moser
OECD

Dates

Monday June 4 – Wednesday June 6 from 9:00 am to 5:00 pm

Location

OECD Conference Centre, 2 Rue Andre Pascal, Paris, France

Purpose:

What should students be learning in the 21st century? This session will discuss top-level changes in the school curriculum, in terms of what topics and subjects should be added, and just as crucially, what should be *removed*.

Rationale:

In the 21st century, humanity is facing severe difficulties at the societal (global warming, financial stresses), economic (globalization, innovation) and personal levels (employability, happiness). Technology's exponential growth is rapidly compounding the problems via automation and off-shoring, which are producing social disruptions. Education is falling behind the curve[1], as it did during the Industrial Revolution. The last profound changes to curriculum[2] were effected in the late 1800's as a response to the sudden growth in societal and human capital needs. As the world of the 21st century bears little resemblance to that of the 19th century, education curricula are overdue for a major redesign.

Key questions to explore:

1. *What should students learn to be successful in the world of the 21st century?* In light of human aspirations and economic needs, what disciplines should be learned that are not routinely so yet? Which ones should be dropped? The full triad of Knowledge, Skills, and Character will be explored, and keeping in the forefront the meta-layer/fourth dimension of: learning how to learn, interdisciplinarity, etc. Both formal and informal educations will be addressed, and the interrelationships between the two.

2. *What are the feedback loops between the What and the How?* For instance, what should foreign language teaching become in an age of automated machine translation? what kind of Mathematics should be taught given availability of computing power? what are we learning from the Neuroscience of education? Etc.

Goals:
- Formally set the stage: *to create redesigns of the curricula informed by research, needs and demands of the 21st century*
- Begin key dialogues, and the work plans around them, to achieve the goals via collaborative co-creation

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[1] Goldin/Katz "The race between education and technology"
[2] Aka "standards", "programmes" etc depending on the country

AGENDA

Day 1: Framing the issues	
9:00 – 10:15	*Introductions, welcome, setting the stage* • CCR & BIAC – Charles Fadel • OECD – Andreas Schleicher
10:15 – 10:45	Presentation: *What does it mean to Redesign?* – Jennifer Groff (CCR)
Break	
11:00 – 11:45	Presentation: *Exponential technologies and their impact* – Charles Fadel (CCR)
11:45 – 12:45	Presentation: *Why (or why not) Curricula?* – Keri Facer (U. of Bristol)
Lunch	
13:45 – 15:15	Working session: *Curriculum frameworks and Futurists table* (CCR to facilitate)
Break	
15:30 – 18:00 with mini-break at 17:00	Presentations: CCR Jurisdictions (Alberta (via video at 16:00), Finland, Korea, Ontario (via video at 15:30), Singapore) – *sharing progress to date, concerns, difficulties. How have they *removed* anything?*

Day 2: Laying the foundation for a rethink	
9:00 – 9:30	Presentation: *What else should be learned? The importance of Character* – Attilio Oliva (BIAC)
9:30 – 10:15	Presentation: *The Oivallus project: what do employers want and need?* – Marita Aho (BIAC)
10:15 – 11:00	Presentation: *What do economies want and need? Review of the CCR Economists meeting* – Charles Fadel (CCR)
Break	
11:15 – 12:00	Presentation: *PISA's future, PIAAC, and Skills Strategy* – Andreas Schleicher (OECD/EDU)

12:00 – 12:45	Working session: *Why do we teach what we teach, and how does it change in the coming decades? What else should be learned?* (CCR to facilitate)
Lunch	
14:00 – 15:00	*Continued* – Working session: *Why do we teach what we teach? What else should be learned?* (CCR to facilitate)
15:00 – 15:45	Presentation: *Why Robotics?* – John Abele (Founder, Boston Scientific and Former Chairman, FIRST Robotics, via video)
Break	
16:00 – 17:00	Presentation: *What Mathematics do people really use?* – Merrilea Mayo, via video

Day 3: Setting the stage for innovation	
9:00 – 10:00	Presentation: *Innovation in Teaching: CERI's Innovative Teaching for Effective Learning project* – Dirk Van Damme (OECD/EDU)
10:00 – 11:00	Presentation: *Stop Teaching Calculating, Start Teaching Math* – Conrad Wolfram (Founder, Wolfram Research – Mathematica, via video)
Break	
11:15 – 11:45	Presentation: *Why Journalism?* – Esther Wojcicki (VP Creative Commons)
11:45 – 12:15	Presentation: *What does Neuroscience tell us about What should be taught?* – Jennifer Groff (CCR)
12:15 – 13:00	Working session: *How do we incorporate Skills, Character, and the Meta layer?* (CCR to facilitate)
Lunch	
14:00 – 15:00	Presentation: *Why is change so needed? and how do we make it happen?* – Sir Michael Barber (Pearson, via video)
15:00 – 15:45	Working session: *What should be removed? What else should be taught? (every participant makes a case, 2-3 minutes per person)*
Break	
16:00 – 17:00	Working session: *Synthesis, and how do we affect change?*
Adjourn	