What should students learn in the 21st century?
With a special “Thank You” to the Fondation Henri Moser for its founding support and trust, and our existing partners.
Testimonial from our 24-year-old webmaster

Center for Curriculum Redesign

Posted on January 10, 2012

Introducing the website for the *Center for Curriculum Redesign*, an organization dedicated to the improvement of school curriculum for the modern world.

While I was never the kid to bemoan the uselessness of school curricula, at this point I might say I feel positively bamboozled by it; when it comes to making a living, I feel ill-advised and ill-prepared. So it’s an honor—and perhaps validation—to have been given the opportunity to work with the organization whose purpose is to revamp an education that left so many of us stranded.

You can check out the website I made for them here: The *Center for Curriculum Redesign*

http://leeviathan.com/
Roger Schank’s view

There are only two things wrong with the education system:

1. What we teach
2. How we teach it.

CCR’s focus is “What”, and the interplay with “How”
Sunday January 15

- 8:00 – 8:30 am: aggregate, breakfast, introductions
- 8:30 - 9:30 am: Charles Fadel rules of engagement; description of CCR and goals
- 9:30 – 10:45 am: Keri Facer via skype, presenting on “Beyond Current Horizons”; Q&A

Break

- 11:00- 12:15: Jillian Darwish, presenting on “2020 forecast”; Q&A
- Lunch
- 1:00 – 2:15: Devin Fidler presenting on IFTF’s “Future work skills”; Q&A

Break

- 2:30 – 3:45: Charles Fadel presenting on “The rate of change of technology”; Q&A

Break

- 3:45 – 5:00: Riel Miller presenting on “Beyond neo-classical economics - the future of Value creation”; Q&A

Break

- 5:15 – 6:00: conversation – what sense do we make of it all?
- 6:00 – 8:30: dinner (Red House - Cambridge)
Monday January 16

- 8:00 – 10:00 am: aggregate, breakfast, review questions (amend as needed), discuss how to proceed (all) based on Charles’s proposed template (co-design template and fill it)

- All day: small group work and presentations sharing insights (all)
  - Synthesizing the views
  - Answering the questions
  - Asking the next questions and defining the next steps

- End time: 4:00 pm to allow for plane-catching.
Let’s Be Our Versatile Selves

Open-minded and open-hearted
Global and altruistic
Candid and respectful
Thorough yet concise
Deep and broad
Joyful and humorous

"The important thing is... to be able at any moment to sacrifice what we are for what we could become."

Charles Du Bos
Views & Assumptions

• Our horizon: 2020-2040
• Education systems can actually adapt and catch up (will be debated)
• Add more assumptions here during the day:
  A)
  B)
Improving supplementing reinventing New paradigm

Existing Providers

Formal Learning

Digital technologies

Informal Learning

learner ownership

New Entrants

reinventing

Our Locus?

Source: Innovation Unit
Key questions to explore

1. What are the consequences of a VUCA world?

2. Are we factoring in technology’s growth sufficiently? Can we reasonably predict significant inflection points in ICT, Biotech, and Energy – and their impact?

3. What are the demands created by 1) and 2) on education systems?

4. Can they adapt fast enough? (if not, what is the hedge?)

→ What should be the key tenets of a 21st century curriculum?

   How can we harness/blend informal systems?
We are already buffeted

Globalization
Financial Meltdown
Overconsumption
Global Warming
And thrown into

Volatility
Uncertainty
Complexity
Ambiguity
The stakes have never been higher

War is Peace
Freedom is Slavery
Ignorance is Strength.

George Orwell, “1984”
We know the benefits of Learning

Economic competitiveness

Learning

Lifelong personal prosperity

Social & environmental wellbeing
Yet, Curriculum reflects the late 1800’s
Nor tomorrow’s
In the age of exponential technologies...
...technology and education are in a race
To address the issues we need deeper learning

Character:
• Adaptability
• Resilience
• Persistence
• Ethics, etc.

Skills:
• Creativity/Innovation
• Critical thinking
• Communication
• Collaboration, etc.

Relevant Knowledge in:
• Languages
• Humanities/Arts
• Science/Technology/Engineering/Math
Yet Curriculum has evolved slowly
While students beg for relevance

“Please, Ms. Sweeney, may I ask where you’re going with all this?”
Now Neuroscience explains why

Cortical plasticity is conditional upon *relevance*

*Doing* fosters deeper learning via transfer mechanisms
This is not a new debate

**British Grammar School Subjects c. 1800**
- Latin
- Greek
- English*
- Reading*
- Writing*
- Arithmetic*

**Benjamin Franklin’s Philadelphia Academy Subjects**
- French
- German
- Spanish
- Handwriting
- Bookkeeping
- Drawing
- Geometry
- Astronomy
- Geography
- Rhetoric
- Oratory
- Morality
- Natural Philosophy
- History
- Natural History
- Mechanics
- Gardening

* usually optional
It is humankind’s wisdom

Confucius (551-479 BC):
“I hear and I forget, I see and I remember, I do and I understand”

Michel de Montaigne (1533-1592 AD):
“rather a mind shaped than a head full”
So it is grand time to act

unless we want a Dickensian society
We are facing ourselves

“We have evolved traits [such as group selfishness] that will lead to humanity's extinction – so we must learn how to overcome them”

Christian de Duve
Nobel prize in Medicine 1974
And there are no superheroes to rescue us
So imagine if we rethink *What* is taught
Rebalance education
Reassess Knowledge for relevance
Learn Skills
Build Character
Harness interdisciplinarity
Leveraging our entire selves

head hand heart
We will solve societal crises
We will improve economic prosperity
We will provide personal fulfillment
For a better world
To do so:
CCR brings together key global players, + other NGOs

Fondation Henri Moser

+ other Academia

+ other Foundations

+ other Jurisdictions

+ other Organizations

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...to redesign education standards, *(Math as example here)*
...on the basis of all dimensions,
... at the meta- and macro-level,

<table>
<thead>
<tr>
<th>Level</th>
<th>Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meta level</td>
<td>International</td>
<td>CCR, PISA</td>
</tr>
<tr>
<td>Macro level</td>
<td>System/society/nation/state/jurisdiction</td>
<td>National standards or curriculum</td>
</tr>
<tr>
<td>Meso level</td>
<td>School/institution/sub-system</td>
<td>School- or district-specific curriculum</td>
</tr>
<tr>
<td>Micro level</td>
<td>Classroom</td>
<td>Instructional plan and materials</td>
</tr>
<tr>
<td>Nano level</td>
<td>Individual/personal</td>
<td></td>
</tr>
</tbody>
</table>

...deeply embedding real-world needs  (Math as example here)

Board of Advisors  
(Incl. Jurisdictions)

Math SME organizations:
- IMU
- NCTM
- MAA
- AMS
- EMS

5 Star Academics: (will represent disciplines broadly)
- Biology/Biotech/Chemistry
- Economics/Business
- Philosophy/Literature
- Physics/Engineering
- Psychology/Sociology

20 Successful Practitioners:
- Art/Design
- Art/Performing
- Business (entrepreneur)
- Communications/Media
- Construction/Architecture
- Engineering (EE or ME)
- Farming/Fishing/Forestry
- Finance
- Law
- Manufacturing
- Medicine/Nursing
- Retail (owner)
- Transportation/Logistics

5 Math Curriculum Experts (3x, 1 reporting):
- Algebra
- Arithmetic
- Calculus
- Geometry
- Stats & Probs

5 Math SME organizations:
- IMU
- NCTM
- MAA
- AMS
- EMS

5 Star Math Teachers:
- Algebra
- Arithmetic
- Calculus
- Geometry
- Stats & Probs

5 full-time CCR team: synthesis

Curriculum SMEs

Teacher SMEs

Subject SMEs

Academics

Practitioners
...gathering global views & socializing

- Luminaries
- Teachers
- Students
- Public
- Webchatter

- 200 essays
  Publish online and as book

- 20,000 teachers
- 200,000 students
- 2 Million parents
  Web-based surveys, publish online

- 2 Billion items
  Analysis of tweets, blogs, searches etc.
  Publish online

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Adoption & Scaling

*Significant, high profile end-users are part of the design:*

Top-down via all involved key jurisdictions (Alberta,, Finland, Korea, Massachusetts, Singapore, etc)
2012 Timing

Winter & Spring:
Preparatory pillars:
• Futurists
• Human capital
• Assessments
• Neuroscience
• EdTech

Summer & Fall:
Larger scope:
• Plenary (top-down design)
• Subject One (Maths)
Process Timing

2012 (ongoing):
- Definition
- Funding
- Team building
- Top-down design start
- Subject One start

Year Two:
- Pilot one subject
- Team building for next subjects

Year Three:
- Build all subjects
- Start Scale effort

Year Four:
- Scale effort

Deliverables: frameworks and example implementations
감사합니다

Thank You

Merci

Danke

Ευχαριστίες

Dalú

Köszönöm

Tack

Gracias

Grazie

Obrigado

古典語