Thematic Session 3: Innovations in education: Improving Access and quality

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4. QUALITY EDUCATION

Formal education system
- 4.2 Pre-primary
- 4.1 Primary & Secondary
- 4.3 TVET & HE
- 4.5 Equality for All (incl. gender and disabilities)

Skills agenda
- 4.7 Sus. Dev. & Global Citizenship
- 4.4 Skills for Work
- 4.6 Adult Literacy

Flanking measures
- 4.a Learning Environments
- 4.b Scholarships
- 4.c Teachers and Educators

Source: Based on UNESCO (2016b)
A digital divide was exposed during the pandemic with 60% of adults lacking the digital skills required to work, learn and access critical services online.

Source: Global Risks Report 2021, World Economic Forum
Effect of pandemic on education:

- kids lagging behind
- mental health conditions
+ “leap-frog” in using digital technologies
+ more connected
Some figures

- Digital divine is increasing and > 50% of kids are on wrong side of the divine.

- 37% of the world’s population – or 2.9 billion people – have still never used the Internet (96 per cent live in developing countries).

- > 10 US$ trillion losses in future.

- Today’s students may earn $49,000 to $61,000 less over their lifetime owing to the impact of the pandemic on their schooling (Mckinsey).

- K–12 student learning was significant, leaving students on average five months behind in mathematics and four months behind in reading by the end of the school year.
By the end of the 2020–21 school year, students were on average five months behind in math and four months behind in reading.

Cumulative months of unfinished learning due to the pandemic by type of school, grades 1 through 6

<table>
<thead>
<tr>
<th>Learning gap</th>
<th>By race</th>
<th>By income</th>
<th>By location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>Schools that are majority . . .</td>
<td>Household average, per school</td>
<td>School site</td>
</tr>
<tr>
<td>5 months behind</td>
<td>Black</td>
<td>&lt;$25K</td>
<td>City</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>$25K–$75K</td>
<td>Suburb</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>&gt;$75K</td>
<td>Rural</td>
</tr>
<tr>
<td>Reading</td>
<td>Black</td>
<td>&lt;$25K</td>
<td>City</td>
</tr>
<tr>
<td>4 months behind</td>
<td>Hispanic</td>
<td>$25K–$75K</td>
<td>Suburb</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>&gt;$75K</td>
<td>Rural</td>
</tr>
</tbody>
</table>

¹Town or suburb.

Source: Curriculum Associates I-Ready assessment data
Parents reported increases in mental health conditions and concerning behaviors in their children.

My child suffers from the following conditions, %

- Anxiety: +5 p.p.\(^1\)
  - Prepandemic: 32
  - During the pandemic: 37

  - Prepandemic: 20
  - During the pandemic: 26

My child exhibits the following behaviors, %

- Social withdrawal
    - Prepandemic: 31
    - During the pandemic: 39
    - Prepandemic: 9
    - During the pandemic: 13
  - All the time: +5 p.p.
    - Prepandemic: 5
    - During the pandemic: 6

- Self-isolation
    - Prepandemic: 31
    - During the pandemic: 38
    - Prepandemic: 6
    - During the pandemic: 10
  - All the time: +3 p.p.
    - Prepandemic: 3
    - During the pandemic: 3

- Lethargy
    - Prepandemic: 25
    - During the pandemic: 30
    - Prepandemic: 16
    - During the pandemic: 18
  - All the time: +1 p.p.
    - Prepandemic: 3
    - During the pandemic: 3

- Irrational fear
    - Prepandemic: 24
    - During the pandemic: 28
    - Prepandemic: 14
    - During the pandemic: 17
  - All the time: +1 p.p.
    - Prepandemic: 3
    - During the pandemic: 3
The COVID-19 crisis has accelerated the digitization of customer interactions by several years.

Average share of customer interactions that are digital, %

<table>
<thead>
<tr>
<th>Region</th>
<th>Adoption acceleration</th>
<th>Precrisis</th>
<th>COVID-19 crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>3 years</td>
<td>20 (June 2017)</td>
<td>20 (June 2017)</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>4 years</td>
<td>36 (May 2018)</td>
<td>32 (Dec. 2019)</td>
</tr>
<tr>
<td>Europe</td>
<td>3 years</td>
<td>18 (Dec. 2019)</td>
<td>19 (July 2020)</td>
</tr>
<tr>
<td>North America</td>
<td>3 years</td>
<td>25 (July 2020)</td>
<td>41 (June 2020)</td>
</tr>
</tbody>
</table>

1Years ahead of the average rate of adoption from 2017 to 2019.
<table>
<thead>
<tr>
<th></th>
<th>Plausibility</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural disasters</td>
<td>High</td>
<td>Potentially very high, depending on severity and duration of the shock</td>
</tr>
<tr>
<td>Economic shock / Crisis</td>
<td>Increasing in an interconnected global world</td>
<td>Depending on severity duration of the shock</td>
</tr>
<tr>
<td>(Cyber) War</td>
<td>Depending on context</td>
<td>likely high depending on type of warfare</td>
</tr>
<tr>
<td>Internet disrupted / Communications cut</td>
<td>Low</td>
<td>Extremely high, particularly if it coincides (accidentally or intentionally) with one of the other shocks</td>
</tr>
<tr>
<td>Human – machine interfaces / General Artificial Intelligence (AI)</td>
<td>Still unknown</td>
<td>Still unknown</td>
</tr>
</tbody>
</table>

Digital infrastructure

Teaching methods

Unleash start-ups

Special cases

ed-tech and innovations

How to build sustainable digital infrastructure?
What are the new education methods?
How to teach teachers to work with new methods and digital technologies?
How to encourage more of ed-tech companies?
How to involve unprivileged communities?

More WWW connection e.g. use of Starlink Ukraine E-government

Flip classroom
Blend teaching
Hands on (innovation grants)
Khan academy
Teaching teachers
Teaching science

Support of ed-tech
Build innovation ecosystem

Unprivileged communities
Teaching during the crises and refugees
Innovations in education: improving access and quality:

This session would look not only at promising technology and organizational solutions and trends, but also look at what has been achieved in terms of increased access and quality of education worldwide and what could be achieved in the future. Emphasis could be placed on equity issues (including gender equity) and access to quality education through digital access, including good practices in leveraging technology to overcome the setbacks due to the COVID-19 pandemic. It will highlight innovations in teaching and learning, such as active learning and the use of artificial intelligence in tailoring on-line learning, especially for underserved children and adults, and for addressing a range of equity and equality issues. The session will also address the issue of public trust in science.
Promoting ed-tech technologies and innovative learning methods:

- providing internet connection (e.g. Ukraine case with Elon Musk) and digital skills
+ employing innovation methods
+ supporting startup ecosystem
Examples of innovation in teaching and ed-tech

Digital classroom. Personalised approach (e.g. Khan Academy, the same context at different content). Engage – interactive. Flip classroom (teacher is not gatekeeper but guides, using different source). Student hand-on (VIP course). Teach 21 century skill, creating website, use HPC. Augmented reality.

‘Anatomy Next’, a Latvian startup
Building trust in science by education

- Pandemics demonstrated that trust in science (use of vaccine) saving lives

+ Need to teach science and critical thinking in early stages of education
Special support for underserved and marginalised population

- refugees crisis
- access to education
+ teaching teachers
The organisation of session

- 3-4 speakers
- A pre-recorded 3-4 minute presentation followed by about 20-30 minutes facilitated Q&A by the moderator
- Q&A from audience
Looking for the speakers

1. Developing digital education systems
2. A founder of start-up working with ed-tech
3. New education methods including science educators
4. Post-crises (psychologist) for education
Possible speakers

5. Teaching methods for marginalised population

Dr Nesha Hanif

University of Michigan – she has taught an excellent modile of Pedagogy in Action initially from her experiences and roots in the Caribbean to expanding it to marginalised communities in the USA and further validation in Sub-Saharan Africa.

EMPOWERMENT PEDAGOGIES AND INTERVENTIONS

Using new teaching methodologies, innovative education modules are developed to empower marginalized populations in the areas of HIV/AIDS, violence and reproductive health, modules are currently being used by CBOs in Jamaica, University of Zululand, Durban, Cape Town, Johannesburg and Soweto, South Africa and the USA. Recent quantitative research shows that over 70,000 people have been reached by this pedagogy. nd Latin and Central America
cont. possible speakers

Khan Academy founder
Tech Girls (Latvia)
Former president of Estonia

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Possible questions to speakers

How could global crises (cyber)wars, epidemics, natural disasters, economic shocks, etc) impact the functioning of education under the different scenarios and how we can prepare for them?

How to better support education system to facilitate use of digital technologies?

How are your STI roadmaps contributing to support innovative education in your country?

...
Reimagine education

In a world facing a learning crisis, digital learning should be an essential service.

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