Education disrupted – education rebuilt
Global Science of Learning Education Network
Andreas Schleicher
UNESCO monitoring of school closures in response to the Covid-19 crisis, as of 2 April

Global monitoring of school closures caused by COVID-19
Evidence From Previous Epidemics Suggests That School-closure Can Prevent Up To 15% Of Infections

Reduction in the share (%) of the population contracting the disease

Source: OECD, Flattening the covid-19 peak: Containment and mitigation policies
Reopening Schools May have A Different Impact Across Countries

In some countries (e.g. ITA and POL) the interaction children-elderly is much higher than in others (e.g. BEL, FIN).

Opening kindergartens and primary schools in ITA and POL may lead to a higher increase in mortality than in BEL and FIN.

Source: github.com/sbfnk/socialmixr
Impact of Covid-19 on education

• **1.5bn** students impacted by school closures
• **Remote learning** has become the lifeline for learning but doesn’t address the social functions of schools
• Access, use and quality of **online resources** amplifying inequality
• **Accreditation** at stake
• Huge needs for **just-in-time professional development**
• Re-prioritisation of curricula leads to new tensions
• But lots of **innovative learning environments** emerging!
Access to a computer for school work (PISA)

Percentage of students that have access to a computer they can use for school work

Fig A2

%
Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction

Percentage of students in schools whose principal agreed or strongly agreed that teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction

Fig A9
TECHNOLOGY IS ONLY AS GOOD AS ITS USE
Use of ICT for class work is widespread overall, but not universal...  

53% of teachers let their students use ICT for projects or classwork
Even before the crisis, the use of ICT for class work was already on the rise...

Percentage of teachers who “frequently” or “always” let students use ICT for projects or class work

Tables I.2.1 and I.2.4
Innovative projects and the use of ICT can be useful strategies to address the current challenges to school

Teaching practices
Percentage of teachers who frequently or always use the following practices in their class (OECD average - 31)

Classroom management
- Tell students to follow classroom rules
- Tell students to listen to what I say
- Calm students who are disruptive
- When the lesson begins, tell students to quieten down quickly
- Explain to students what I expect them to learn
- Explain how new and old topics are related
- Set goals at the beginning of instruction
- Refer to a problem from everyday life or work
- Present a summary of recently learned content

Clarity of instruction
- When the lesson begins, tell students to quieten down quickly
- Explain to students what I expect them to learn
- Explain how new and old topics are related
- Set goals at the beginning of instruction
- Refer to a problem from everyday life or work
- Present a summary of recently learned content

Cognitive activation
- Give tasks that require students to think critically
- Have students work in small groups to come up with a solution
- Let students solve complex tasks
- Present tasks for which there is no obvious solution
- Let students use ICT for projects or class work

Enhanced activities
- Let students use ICT for projects or class work
- Give students projects that require at least one week to complete
OWNERSHIP AND
EMPOWERMENT
Most teachers feel control over their practice.

How much professional autonomy do teachers have?

Over 90% of teachers say they have control over:
- choice of teaching methods
- assessing students' learning
- discipline
- amount of homework

84% say they are involved in deciding overall course content.

In only 56% of schools do teachers play a role in school management, according to principals.
Most teachers feel control over their practice

**Teachers' autonomy in determining course content in their target class**

Percentage of lower secondary teachers who "agree" or "strongly agree" that they have control over determining course content in their target class

Fig II.5.12
TEACHERS SEEM MORE OPEN TO INNOVATION THAN OUR INDUSTRIAL SCHOOL ORGANISATION SUGGESTS
The vast majority of teachers have a positive attitude towards change and innovation...

**Teachers’ views on their colleagues’ attitudes towards innovation**
Percentage of lower secondary teachers who "agree" or "strongly agree" with the following statements

Table I.2.35
Guidance from school leaders matters for innovation, but is not widespread across the board...

**Principals' leadership activities**
Percentage of low secondary principals who "often" or "very often" engaged in the following activities in their school in the 12 months prior to the survey

<table>
<thead>
<tr>
<th>Activity</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborating with teachers to solve classroom discipline problems</td>
<td></td>
</tr>
<tr>
<td>Working on a professional development plan for the school</td>
<td></td>
</tr>
<tr>
<td>Providing feedback to teachers based on principal's observations</td>
<td></td>
</tr>
<tr>
<td>Observing instruction in the classroom</td>
<td></td>
</tr>
<tr>
<td>Taking actions to ensure that teachers feel responsible for their students' learning outcomes</td>
<td></td>
</tr>
<tr>
<td>Taking actions to ensure that teachers take responsibility for improving their teaching skills</td>
<td></td>
</tr>
<tr>
<td>Taking actions to support co-operation among teachers to develop new teaching practices</td>
<td></td>
</tr>
<tr>
<td>Reviewing school administrative procedures and reports</td>
<td></td>
</tr>
<tr>
<td>Resolving problems with the lesson timetable in the school</td>
<td></td>
</tr>
<tr>
<td>Providing parents or guardians with information on the school and student performance</td>
<td></td>
</tr>
</tbody>
</table>

**System leadership**

**Indirect instructional leadership activities**

**Direct instructional leadership activities**

**Administrative tasks**
STRENGTHENING RELEVANT OUTCOMES
Learning time ≠ learning outcomes

Note: Learning time is based on reports by 15-year-old students in the same country/economy in response to the PISA 2015 questionnaire. Productivity is measured by score points in reading per hour of total learning time.
Growth mindset and reading performance

More students holding a growth mindset:

Percentage of students who disagreed or strongly disagreed that their intelligence cannot change very much (%)

Similar relationship within most countries (Figure III.14.2)

Fig II.14.3
Growth mindset and student attitudes

Change in the following indices when students disagreed or strongly disagreed that "your intelligence is something about you that you can’t change very much":

- Motivation to master tasks
- Self-efficacy
- Fear of failure
- Learning goals
- Value of school

All linear regression models account for students' and schools' socio-economic profile.
Life satisfaction among 15-year-old students

Factors that predict poor life satisfaction:
• Anxiety with school work
• High internet use

Factors that predict high life satisfaction:
• Good teacher support
• Good parental support
• Students who talk or meet with friends after school
• More physical activity
Students' life satisfaction and school climate

Change in the school-level index associated with a one-point change on the student life-satisfaction scale

After accounting for student and school characteristics
Before accounting for student and school characteristics

Fig III.11.7

- Greater Life Satisfaction
Fostering creativity in schools: Knowledge

- Disciplinary
- Interdisciplinary
- Epistemic
- Procedural
Fostering creativity in schools: Skills

- Cognitive & meta-cognitive
- Social & emotional
- Physical & practical
Influence of students’ environment – Classroom climate

Cooperative classroom climate is positively related to SE skills

Cooperative climate 10 yo
Cooperative climate 15 yo
Influence of students’ environment – School bullying

School bullying is negatively related to students’ SE skills

Standardized regression coefficients

-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

-0.25
-0.20
-0.15
-0.10
-0.05
0.00
0.05
0.10
0.15
0.20
0.25

Bullying 10 yo
Bullying 15 yo
Importance of SE skills – Better focus, harder to distract during class

Trouble focusing is related to social and emotional skills (based on student, parent and teacher reports – older cohort)

Standardized regression coefficients

Legend: Students, Parents, Teachers
Relationship of social and emotional skills and students’ gender

Relation between students’ gender and their SE skills

Standardized regression coefficients

-0.20
-0.10
0.00
0.10
0.20
0.30
0.40

Assertiveness, Cooperation, Creativity, Critical Thinking, Curiosity, Self-efficacy, Emotional Control, Empathy, Energy, Metacognition, Achievement Motiv., Optimism, Persistence, Responsibility, Self-control, Sociability, Stress Resistance, Tolerance, Trust

Gender (males) 10 yo  Gender (males) 15 yo
Brain sensitivity of important developmental areas

- Language
- Numbers
- Peer social skills
- Emotional control

Age in years

Brain sensitivity
Based on a balanced, broad set of domains

- **Cognitive skills**
  - Emergent Literacy:
    - Listening, understanding
  - Emergent numeracy:
    - Dealing with numbers and patterns

- **Social-emotional skills**
  - Empathy and trust:
    - Understanding and trusting others
  - Prosocial behaviour:
    - Controlling impulses, cooperating with others

- **Self-regulation**
  - Regulating mental processes
An example

- Likes to learn new things
- Understands others’ feelings, like when they are happy, sad or angry
- Is emotionally moved by the problems of people in books or stories

Source: IELS Main Study
Transformative competencies

- Creating new value
- Taking responsibility
- Reconciling tensions & dilemmas
Implications for pedagogy

- Anticipation
- Action
- Reflection
When fast gets really fast, being slow to adapt makes education really slow

Industrial systems

Some students learn at high levels (sorting)
Routine cognitive skills
Standardisation and compliance
‘Tayloristic’, hierarchical
Primarily to authorities

World class systems

All students need to learn at high levels
Complex ways of thinking and doing
High-level professional knowledge workers
Flat, collegial
Primarily to peers and stakeholders
Thank you

Find out more about our work at [www.oecd.org/education/TALIS](http://www.oecd.org/education/TALIS)

- All publications
- Country notes
- Videos
- The complete micro-level database

Emails: Andreas.Schleicher@OECD.org and TALIS@oecd.org

Twitter: SchleicherOECD and #OECDTALIS

Wechat: AndreasSchleicher