Education Disrupted, Education Reimagined
WISE and Salzburg Global Seminar, 16 April 2020
Andreas Schleicher
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

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

- Average
- Disadvantaged schools
- Advantaged schools

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
An effective online learning support platform is available

Percentage of students in schools whose principal agreed or strongly agreed that an effective online learning support platform is available

![Graph showing the percentage of students in schools whose principal agreed or strongly agreed that an effective online learning support platform is available. The graph compares the average, disadvantaged schools, and advantaged schools across various countries.](Fig A12)
Learning time ≠ learning outcomes

Productivity

Time in school

Learning out of school

Note: Learning time is based on reports by 15-year-old students in the same country/economy in response to the PISA 2015 question: 'How many hours did you spend on learning activities in school during the past year?' Productivity is measured by score points in reading per hour of total learning time.
Student Well-Being

- Cognitive
- Psychological
- Physical
- Social
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

Fig III.11.7

Greater Life Satisfaction

Change in students' average life satisfaction associated with a one-unit increase in the school-level indices

- Index of disciplinary climate
- Index of exposure to bullying
- Index of sense of belonging at school
- Index of teacher support
- Index of teacher feedback
- Index of student co-operation
- Index of student competition

After accounting for student and school characteristics
Before accounting for student and school characteristics
Student co-operation and competition

Fig III.8.1

Index of student co-operation

Index of student competition

Student co-operation is relatively higher than student competition

Student competition is relatively higher than student co-operation
Growth mindset and reading performance

Average reading score

OECD average

Higher 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)

R² = 0.47
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":

All linear regression models account for students’ and schools’ socio-economic profile.
The kinds of things that are easy to teach and test have also become easy to digitize.
Education won the race with technology throughout history, but there is no automaticity it will do so in the future.

Inspired by “The race between technology and education”
Pr. Goldin & Katz (Harvard)
The multi-faceted world of knowledge
The human world of knowledge
The small world of the curriculum
The small world of the curriculum
The small world of the curriculum
The small world of the curriculum
The small world of the curriculum
The small world of the curriculum
The True
The realm of human knowledge

The Good
The realm of ethics and judgement

The Just and Well-Ordered
The realm of political and civic life, binding social capital

The Sustainable
The realm of natural and physical health

The Beautiful
The realm of creativity, esthetics and design

The Prosperous
The realm of economic life

The big world of learning
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

- Bullying 10 yo
- Bullying 15 yo

- 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
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

-60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60

ASSERTIVENESS  COOPERATION  CREATIVITY  CRITICAL THINKING  CURIOSITY  SELF-EFFICACY  EMOTIONAL CONTROL  EMPATHY  ENERGY  META-COGNITION  ACHIEVEMENT MOTIVATION  OPTIMISM  PERSISTENCE  RESPONSIBILITY  SELF-CONTROL  SOCIABILITY  STRESS RESISTANCE  TOLERANCE  TRUST

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

**Standardized regression coefficients**

Relation between students’ gender and their SE skills

- 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
Based on a balanced, broad set of domains

- **Emergent Literacy**
  - Listening, understanding

- **Emergent numeracy**
  - Dealing with numbers and patterns

- **Self-regulation**
  - Regulating mental processes

- **Cognitive skills**

- **Social-emotional skills**

- **Empathy and trust**
  - Understanding and trusting others

- **Prosocial behaviour**
  - Controlling impulses, cooperating with others
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
Innovative projects and the use of ICT can be useful strategies to address the current challenges to school

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

<table>
<thead>
<tr>
<th>Practice</th>
<th>Classroom management</th>
<th>Clarity of instruction</th>
<th>Cognitive activation</th>
<th>Enhanced activities</th>
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</thead>
<tbody>
<tr>
<td>Tell students to follow classroom rules</td>
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<tr>
<td>Tell students to listen to what I say</td>
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<td>Calm students who are disruptive</td>
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<td>When the lesson begins, tell students to quieten down quickly</td>
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<td>Explain to students what I expect them to learn</td>
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<td>Explain how new and old topics are related</td>
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<td>Set goals at the beginning of instruction</td>
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<td>Refer to a problem from everyday life or work</td>
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<td>Present a summary of recently learned content</td>
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<td>Let students practise similar tasks</td>
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<td>Give tasks that require students to think critically</td>
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<td>Have students work in small groups to come up with a solution</td>
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<td>Let students to solve complex tasks</td>
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<td>Present tasks for which there is no obvious solution</td>
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<td>Let students use ICT for projects or class work</td>
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<td>Give students projects that require at least one week to complete</td>
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<td>Industrial systems</td>
<td>World class systems</td>
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<tr>
<td><strong>Some</strong> students learn at high levels (sorting)</td>
<td><strong>All</strong> students need to learn at high levels</td>
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<tr>
<td>Routine cognitive skills</td>
<td>Complex ways of thinking and doing</td>
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<td>Standardisation and compliance</td>
<td>High-level professional knowledge workers</td>
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<td>‘Tayloristic’, hierarchical</td>
<td>Flat, collegial</td>
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<td>Primarily to authorities</td>
<td>Primarily to peers and stakeholders</td>
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</table>
Find out more about our work at www.oecd.org/pisa

- PISA 2018: Insights and Implications
- PISA 2018 Results (Volume I): What Students Know and Can Do
- PISA 2018 Results (Volume II): Where All Students Can Succeed

Take the test: www.oecd.org/pisa/test

FAQs: www.oecd.org/pisa/pisafaq

PISA indicators on Education GPS: http://gpseducation.oecd.org

PISA Data Explorer: www.oecd.org/pisa/data

Email: Andreas.Schleicher@OECD.org