Børne- og Undervisningsudvalget 2020-21 BUU Alm.del - endeligt svar på spørgsmål 117 Offentligt

### Schooling disrupted – schooling rethought Copenhagen, 5 September 2020

**Andreas Schleicher** 

- 1.5bn students (and their parents) learned over the last two months that learning is not a place but an activity
- Remote learning has become the lifeline for learning but doesn't address the social functions of schools
- Access, use and quality of online resources amplify inequality
- Accreditation at stake
- Huge needs for just-in-time professional development
- Re-prioritisation of curricula and strategies for re-opening of schools needed
- But lots of highly innovative learning environments emerging !

Working together

924

#### **Evaluation of contingency strategies**

(Averages across 36 countries, May 2020)



## The crisis exposed the many inequities in our school systems

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#### Lost individual income due to Corona-induced learning loss

| Learning loss<br>(school-year equivalents) | Pooled<br>(0.232) | US<br>(0.274) | Lowest<br>[Greece]<br>(0.137) | Highest<br>[Singapore]<br>(0.501) |  |
|--|-------------------|---------------|-------------------------------|-----------------------------------|--|
| 0.25                                       | 1.9%              | 2.3%          | 1.1%                          | 4.2%                              |  |
| 0.33                                       | 2.6%              | 3.0%          | 1.5%                          | 5.6%                              |  |
| 0.50                                       | 3.9%              | 4.6%          | 2.3%                          | 8.4%                              |  |
| 0.67                                       | 5.2%              | 6.1%          | 3.0%                          | 11.1%                             |  |
| 1.00                                       | 7.7%              | 9.1%          | 4.6%                          | 16.7%                             |  |

Note: The values in parentheses in the row headers are the income return per standard deviation of individual test scores.

**Source:** Author calculations based on Hampf, Wiederhold and Woessmann, (2017<sub>[8]</sub>), "Skills, Earnings, and Employment: Exploring Causality in the Estimation of Returns to Skills", Large-scale Assessments in Education, Vol. 5/1, pp. 1-30.

#### Focus of contingency strategies (Averages across 36 countries, May 2020)

#### Table 10

To a great extent
To some extent

20 80 0 40 60 100 %

Ensure the continuity of the academic learning of students Ensure continuity/integrity of the assessment of student learning Provide professional support, advice to teachers Ensure social development of students Ensure support for parents and caregivers to support student... Support education of disadvantaged students **Ensure well-being of students Ensure well-being of teachers** Revise graduation/grade transition policy to allow student... Ensure provision of other social services to students Ensure medical attention to teachers affected by Covid-19 Support students at risk of violence at home Ensure medical attention of students affected by Covid-19

#### Instructional resources used (Averages across 36 countries, May 2020)





## **Re-opening schools**

Strategies for the new normal

**Evidence** from previous epidemics suggests **school-closure** can prevent < 15% of infections



Source: OECD, Flattening the covid-19 peak: Containment and mitigation policies

#### Health measures included in the reopening plans

(Averages across 36 countries, May 2020)

#### Table 22



#### What strategies will be used for school reopening?

(Averages across 36 countries, May 2020)











## Technology can amplify and scale innovative teaching

### Capital flows and digitalisation of education

Education is still at an early technology adoption stage, with comparatively low market capitalisation



Sources: HolonIQ, World Health Organization, Goldman Sachs, Standard & Poors. All figures are rounded estimates based on source research.

#### EdTech expenditure

Digital expenditures are forecast to grow fast from USD 152 B to 342 B by 2025



Source: HolonIQ, January 2019

#### EdTech expenditure

Advanced Education Technology Expenditure, 2018 and 2025 estimate, USD Billions



### **Personalised learning**

| Teach to ONE<br>Math | Ms. Sandiford | <ul> <li>MA Se</li> </ul> | ction <b>v</b> | Studen       | t Info ▼  | Curriculum     | V      |        |                   | Adn         | nin▼ 《 | Sign Ou<br>Change Passwor<br>Version: 9.49.0 |
|----------------------|---------------|---------------------------|----------------|--------------|-----------|----------------|--------|--------|-------------------|-------------|--------|--|
| MA - Sect            | tion A601     |                           |                |              |           | TEST PRE       | P      |        | MP 4 - Round 12 ( | )5.13-05.28 | •      |  |
| 28 Students All      | MA Content »  |                           |                |              | Т         | arget Skills 3 | .17.14 |        | Results           | S           | coring |  |
| Student Name •       | Status •      | Attendance •              | WE *           | Contrib •    | HW comp • | HW acc 🔹       | Demo • | Quiz • | Points •          | Skill •     | Exit • | Midterm •                                    |
| Alvarez, Yesenia     | Т             | 100%                      | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 100%   | 56%    | 0 6 12            |             |        |  |
| Aranda, Antonio      | T             | 100%                      | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 85%    | 70%    | 0 7 12            |             | l      |  |
| Avila, Karisma       | T             | 100%                      | $\checkmark$   | $\checkmark$ | 2 of 4    |                | 75%    | 54%    | 0 10 14           |             |        |  |
| Baca, Aimee          | T             | (100%)                    | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 75%    | 59%    | 0 14              |             |        |  |
| Barajas, Leslie      | T             | (100%)                    | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 75%    | 70%    | 0 13 12           |             |        |  |
| Dabros, Violetta     | T             | (100%)                    | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 100%   | 87%    | 0 14 13           |             |        |  |
| Feliciano, Elijah    | Т             | (100%)                    | $\checkmark$   | $\checkmark$ | 4 of 4    |                | 75%    | 100%   | 0 17 13           |             |        |  |

Providing students with personalised learning materials (content map) and teach them

Assignment of individual work, peer work and lectures

#### Assessments and exams

New types of assessments through simulations and games Adaptive assessments Hands-on assessment in vocational settings Increasing reliability of machine rating for essays Predictive models may disrupt the exam model



### **Classroom analytics**

- Learning analytics helps teachers to manage their class:
  - In real time during teaching
  - As a reflective tool after teaching (professional learning)
- Data come from sensors in the classroom, learning management systems or digital activities of students
  - When should you shift to a new activity?
  - Are you losing the attention of your students? Are they engaged in their learning?
  - How do you struture your instruction time (lecture, small group, discussion, assessment, practice, etc.)?
  - Which students do you talk to and support you the most?



#### Robotics in the classroom

Robots are currently mainly used in the teaching and learning of coding (or computational thinking)

Social robots can take on the roles of teaching aides, tutors, peers and sometimes even students



#### **Blockchain in education**



## Verification of degrees and credentials

Development of digital degrees

Secure and trustworthy transfer of academic records

Lowers risks of privacy breach (given its decentralised nature)

# **Building capacity**

212 0000

DECISION





%

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 Let students practise similar tasks Give tasks that require students to think critically Have students work in small groups to come up with a solution Let students to solve complex tasks Present tasks for which there is no obvious solution Let students use ICT for projects or class work Give students projects that require at least one week to complete

#### Prevalence of pedagogical strategies (TALIS 2018)



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

## **Policy levers to teacher professionalism**

Autonomy: Teachers' decisionmaking power over their work (teaching content, course offerings, discipline practices)

> Teacher professionalism

Peer networks: Opportunities for exchange and support needed to maintain high standards of teaching (participation in induction, mentoring, networks, feedback from direct observations)

Knowledge base for teaching (initial education and incentives for professional development)

## **TALIS Teacher professionalisation index**



## **Teacher professional collaboration**

Percentage of lower secondary teachers who report doing the following activities at least once per month



#### **Teachers' self-efficacy and professional collaboration**



### **Student-teacher ratios and class size**



#### Teachers' job satisfaction and class size



Class size (number of students)

### **Teacher job satisfaction and professionalism**



# When fast gets really fast, being slow to adapt makes education really slow

| Industrial systems                  | World class systems  |
|-------------------------------------|--|
| Currice<br>Routine cognitive skills | ulum, instruction and assessment<br>Complex ways of thinking and working |
| Some students learn at high levels  | Student inclusion<br>All students learn at high levels                   |
| Standardisation and compliance      | Role of teachers<br>High-level professional knowledge workers            |
| 'Tayloristic', industrial           | Work organisation<br>Flat, collegial, entrepreneurial                    |
| Primarily to authorities            | Accountability<br>Primarily to peers and stakeholders                    |

## Thank you

Find out more about our work https://oecdedutoday.com/coronavirus/

- Schooling disrupted schooling rethought the complete report
- Country implementation examples
- Innovative education resources
- Country notes

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