

Teaching in times of pandemics: a threat or an opportunity?

Online panel discussion, November 16th, 2020

Prelude to the NESTET 2021 Conference

Panellists

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Department of Communication and Learning in Science (CLS)
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Research areas:

- Both formal and informal aspects of learning, in particular technology-enhanced learning.
- Lifelong learning and public understanding of science.
- Massive Open Online Courses (MOOCs) and their pedagogy.
- Impact and relationship with society.
- Remote teaching.
- Flipped or blended learning models.

Website:

<https://www.chalmers.se/en/staff/Pages/christian-stohr.aspx>



Panellists

Andreas Schleicher

Director for Education and Skills

Organisation for Economic Co-operation and Development (OECD)

- Initiated and oversees the Programme for International Student Assessment (PISA) and other international instruments.
- Worked for over 20 years with ministers and education leaders around the world to improve quality and equity in education.
- Past Director for Analysis at the International Association for Educational Achievement (IEA).
- Studied Physics in Germany.
- Received a degree in Mathematics and Statistics in Australia.
- Recipient of numerous honours and awards.
- Honorary Professor at the University of Heidelberg, Germany.



Teaching in times of pandemics – a threat or an opportunity

Christian Stöhr

A decorative graphic at the bottom of the slide, consisting of a dark blue horizontal band with a white, torn-paper-like edge above it, and a lighter blue gradient area above that.

Success factors during covid-19 crisis

- Institutions with clear strategies for online education
- Experience in online course delivery
- Support for teachers and students
- Educational technologists, course designers, media specialists
- Synchronous and asynchronous interaction



Photo by [Julia M Cameron](#) from [Pexels](#)



Photo by [Francesco Paggiaro](#) from [Pexels](#)

Problem areas

- Translating classroom teaching to online doesn't work well
- Teachers and students who lack necessary skills and support
- Study skills
- Technical issues
- Home environment
- Social isolation
- Examination



What blend of traditional and digital methods and tools best support the learning outcomes of your course?

Creating safe spaces

- Community of trust
 - Clear structure and rules
 - Facilitation
 - Socialisation
 - Support
-
- Five stage model
<https://www.gillysalmon.com/five-stage-model.html>



Synchronous interaction

- Simple socializing activities in the beginning and during the course
- Variety – mix input with discussion
- Focus on engagement (flipped classroom)
- Channels for communication – chat, polls, external tools (Mentimeter, Padlet etc)
- Breakout groups
- Breaks



COVIDO, ERGO ZOOM



Asynchronous interaction

- Do we really need so many Zoom meetings?
- Less stress
- Time to reflect
- Collaborative spaces
forums, storyboards, mindmaps

Video

- Recorded lectures
 - short
 - embedded questions (YouTube)
 - ask them to pause and reflect
 - lead into discussion
- Build relationships: welcome film, short weekly video summaries (vlog)
- Video feedback
 - screencasting tool
 - comment on students' assignments

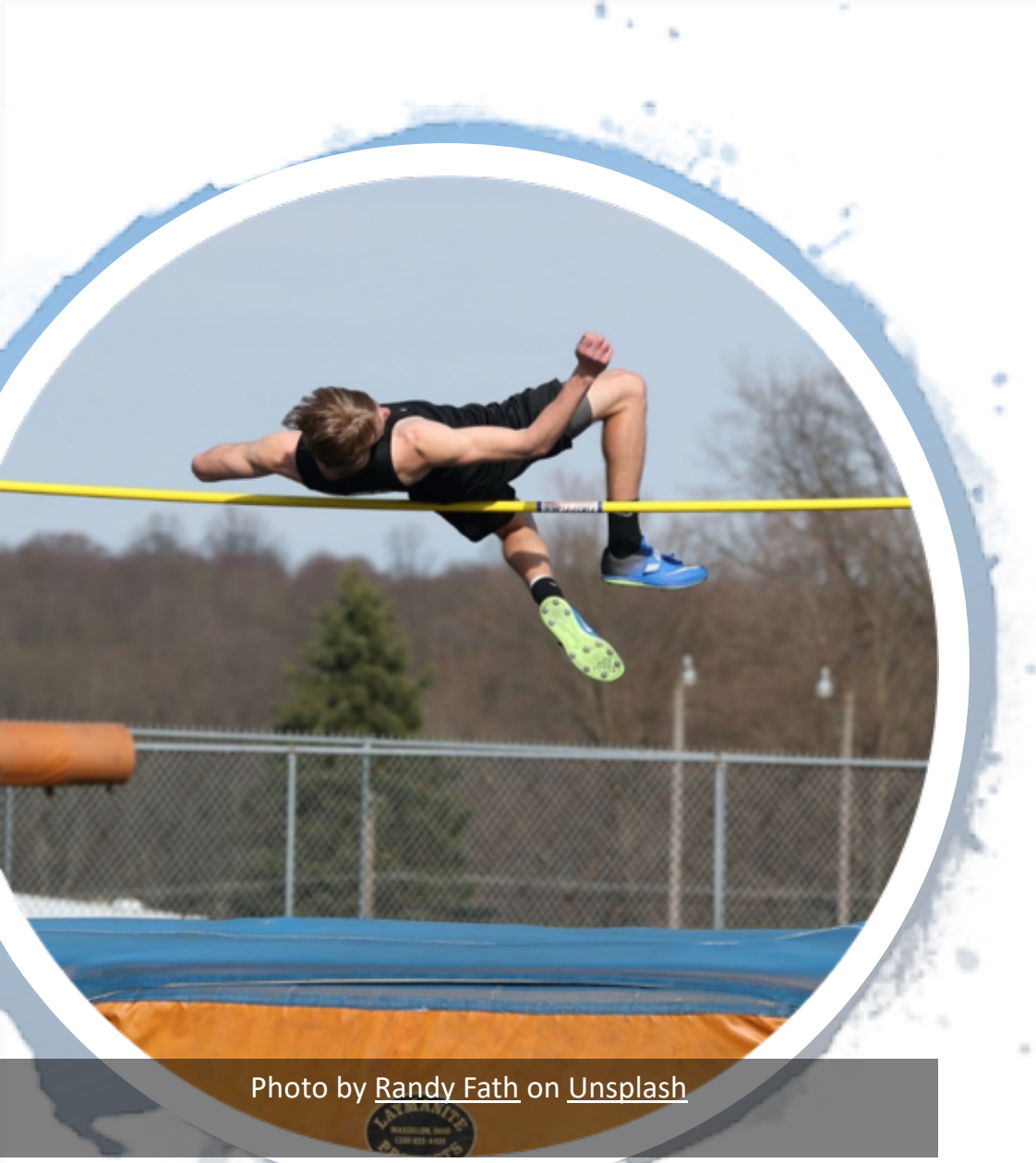


Photo by [Ekaterina Bolovtsova](#) from [Pexels](#)



Multi-modality and -accessibility

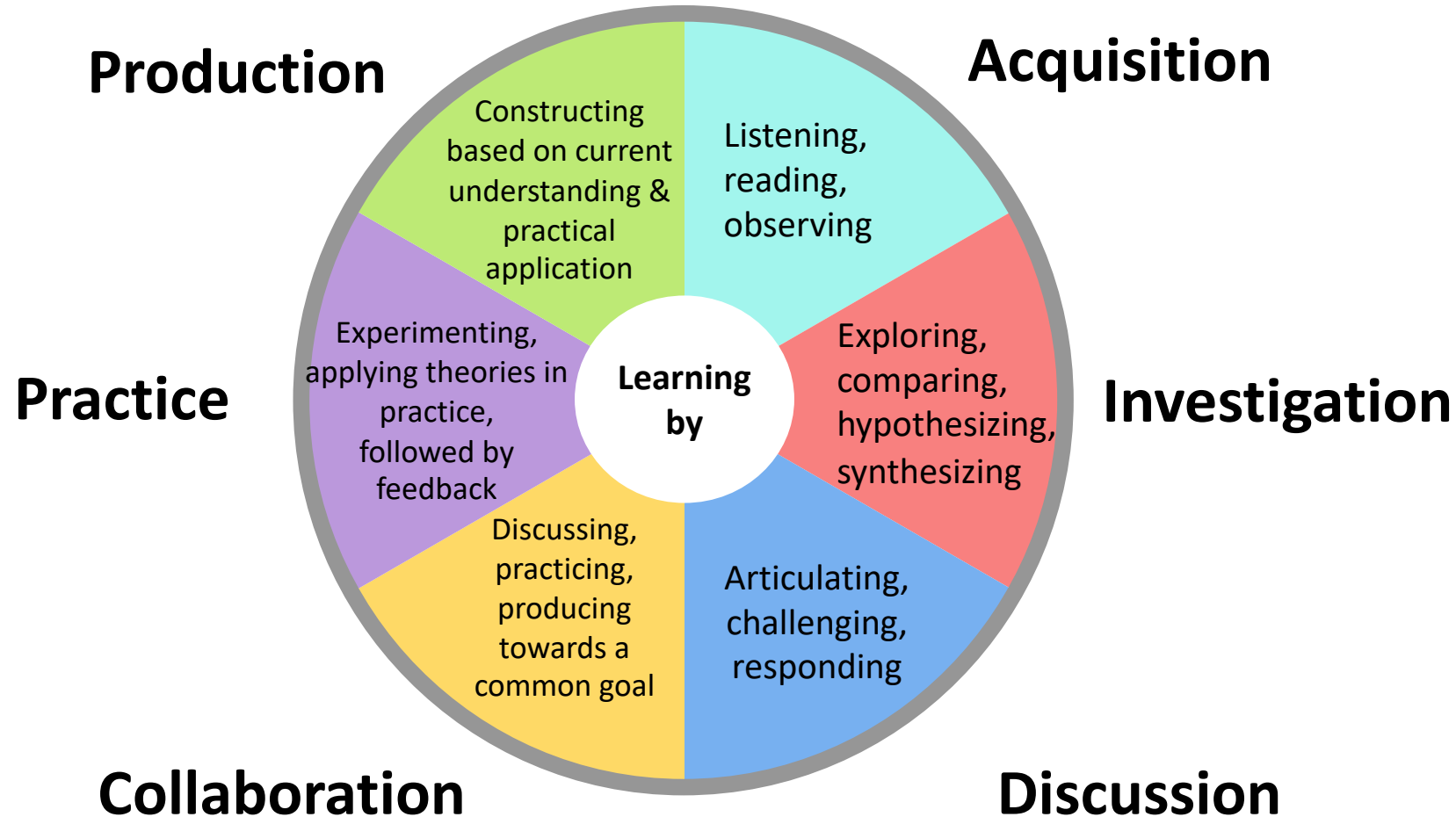
- Different media
- Alternatives to video – text manuscript
- Subtitles
- Mobile-friendly
- More focus on low bandwidth asynchronous communication
- Ability to download for offline access



LMS – raise the bar!

- "Scroll of death"
- Hub for all course activity
- Multimodal arena: video, audio, sharing
- Active learning: forum, quiz, wiki etc.
- Integrated with media platform, Zoom, student web, admin systems
- Learning analytics

Course design – getting the right blend



Laurillard, D. (2012). Teaching as a Design Science. London: Routledge.
[ABC Learning Design](#) (University College London)

We're all in this together

- Avalanche of guides to teaching/learning online
- Webinars
- Teacher support communities (Facebook groups)
- Sharing – open culture
- Creative solutions

Contact me: christian.stohr@chalmers.se

Thanks and credits to Alistair Creelman!

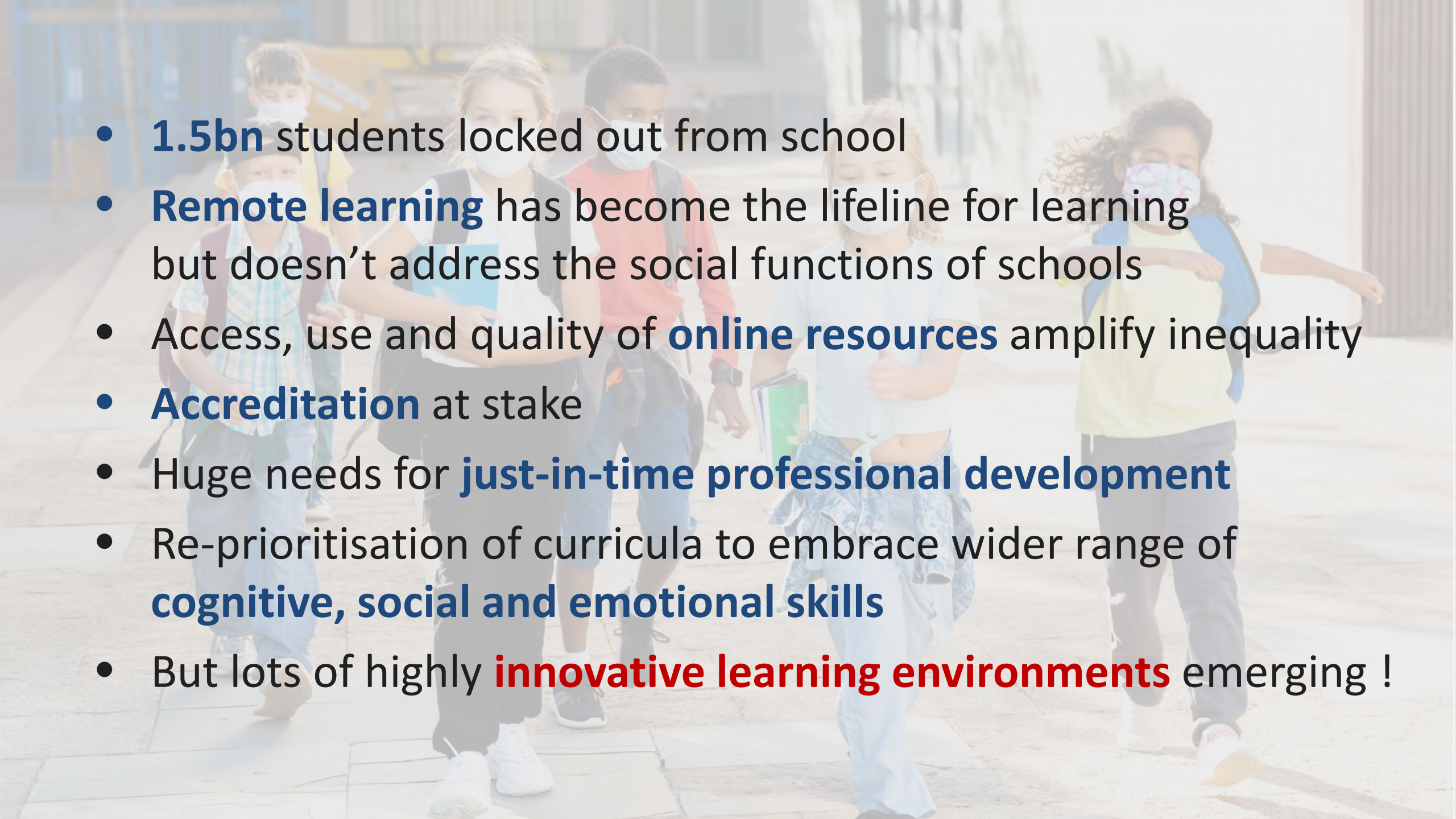
Photo by [clark cruz](#) from [Pexels](#)



Schooling disrupted – schooling rethought

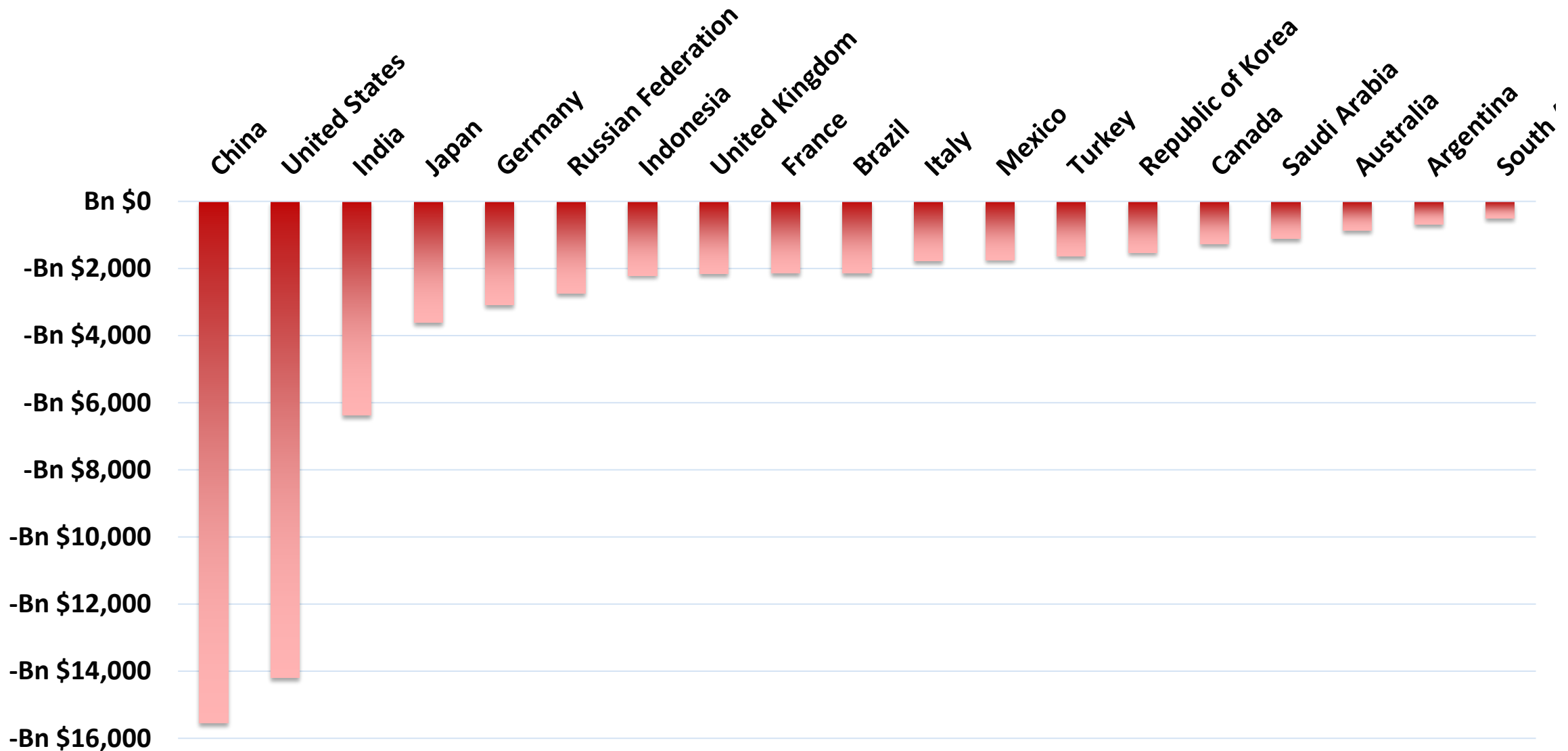
Teaching in times of pandemics

NESTed Andreas Schleicher

- 
- **1.5bn** students locked out from school
 - **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 to embrace wider range of **cognitive, social and emotional skills**
 - But lots of highly **innovative learning environments** emerging !

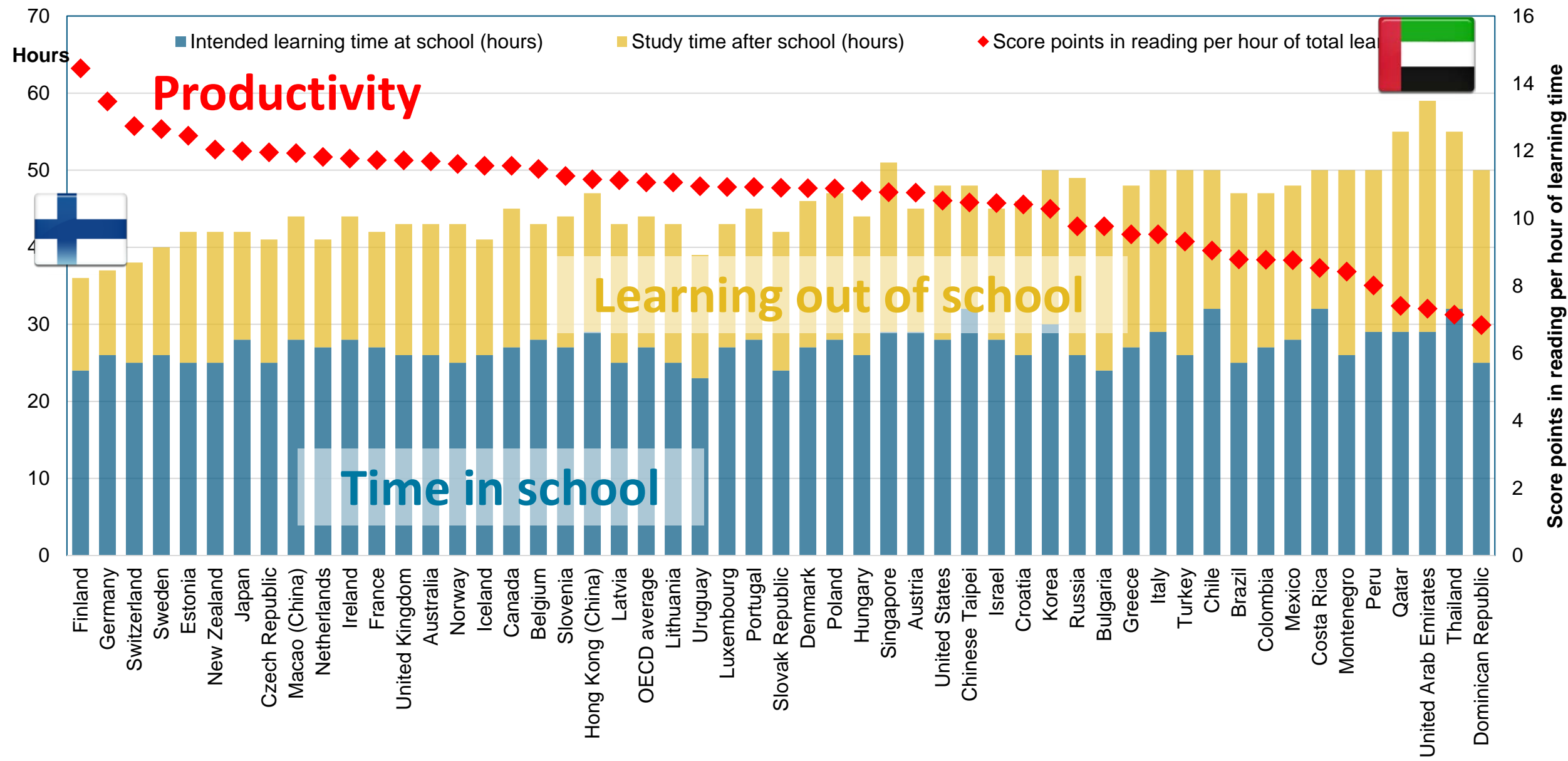
Present value of **lost GDP** due to Corona-induced learning loss

(average 1/3 school year lost)



Source: Hanushek and Woessmann (OECD, 2020)

PISA 2018: Learning time ≠ learning outcomes



Reading literacy in PISA

Student performance

OECD average reading score

7%

...can distinguish between fact and opinion,
based on implicit cues pertaining to the content or source of the information

9%

2000

2003

2006

2009

2012

2015

2018

$$f(x)=3x +4$$

1

e-learning

7

%

$\frac{1}{2}$

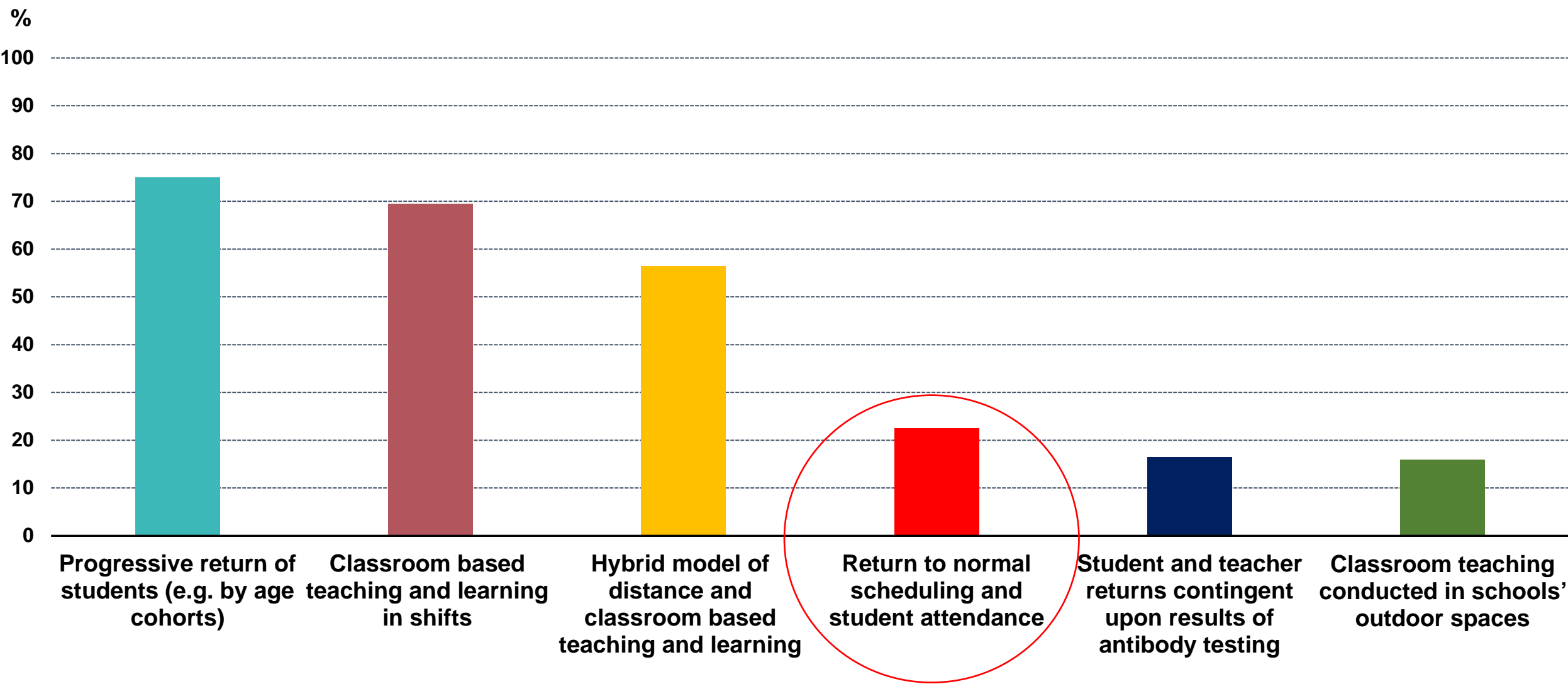
Innovation and alternative arrangements



What strategies will be used for school reopening?

(Averages across 36 countries, May 2020)

Table 17



New learning experiences

- Many online and distance learning and other innovative approaches such as AR, VR and AI were created, adapted and expanded.

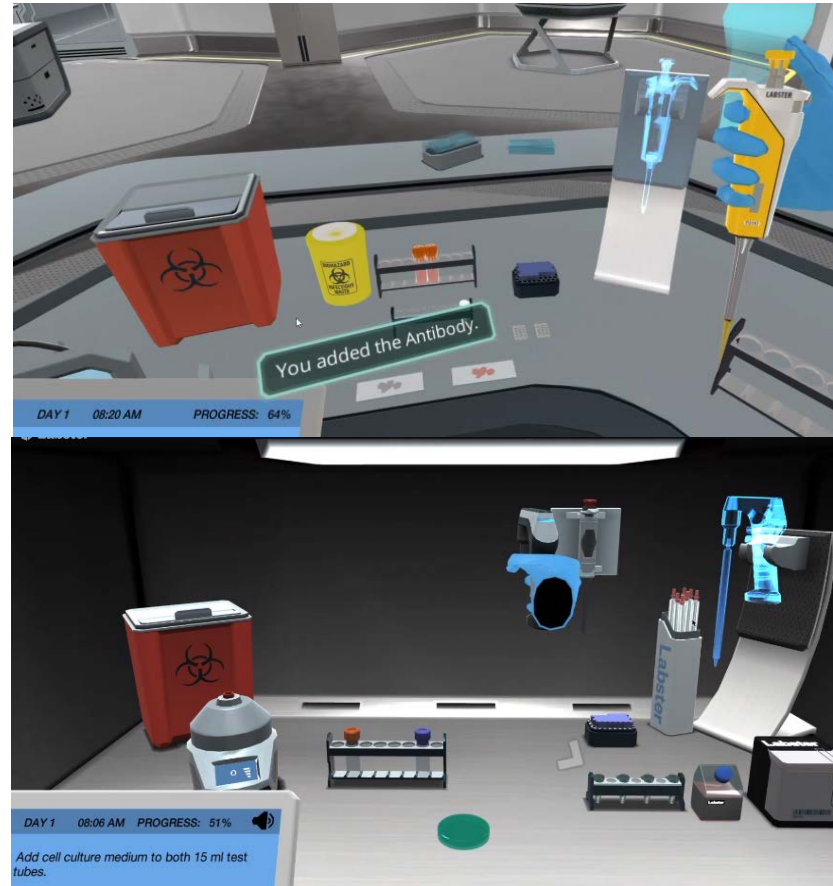
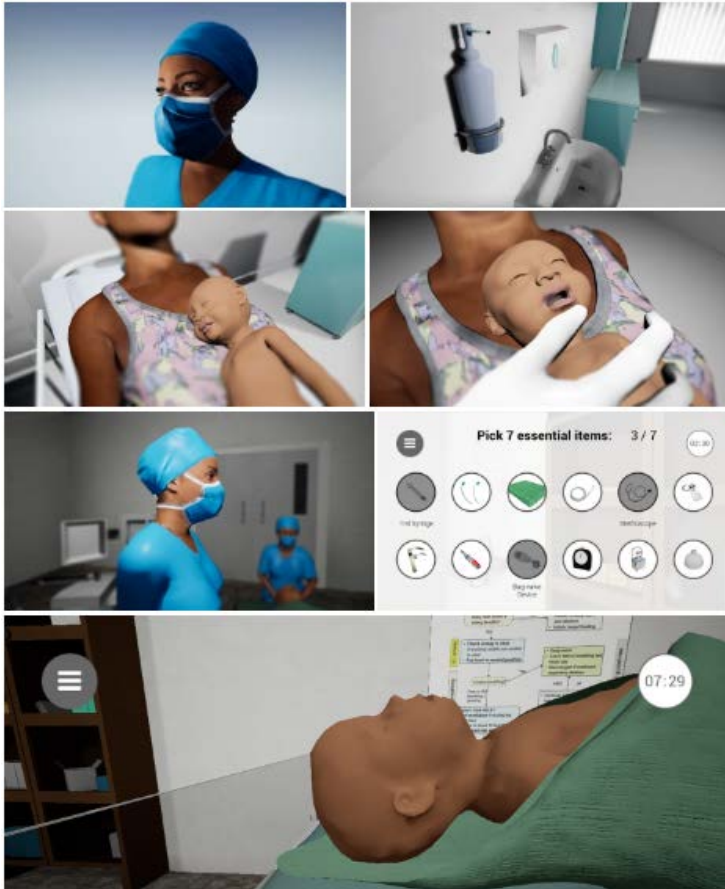


Image sources: Electude Classroom and Labster Labs' virtual labs; Oxford University's LIFE project, a smartphone-based virtual learning platform

Learning analytics

- Learning analytics helps educators personalise learning
 - in real time
 - as a reflective tool
- Data come from sensors, learning management systems and digital activities of learners
 - When should you shift to a new activity?
 - Are you losing the attention of learners?
 - How do you structure instruction time (lecture, small group, discussion, assessment, practice, etc.)?
 - Which students do you talk to and support the most?



Assessments and exams



New types of assessments through simulations and games

Adaptive assessments

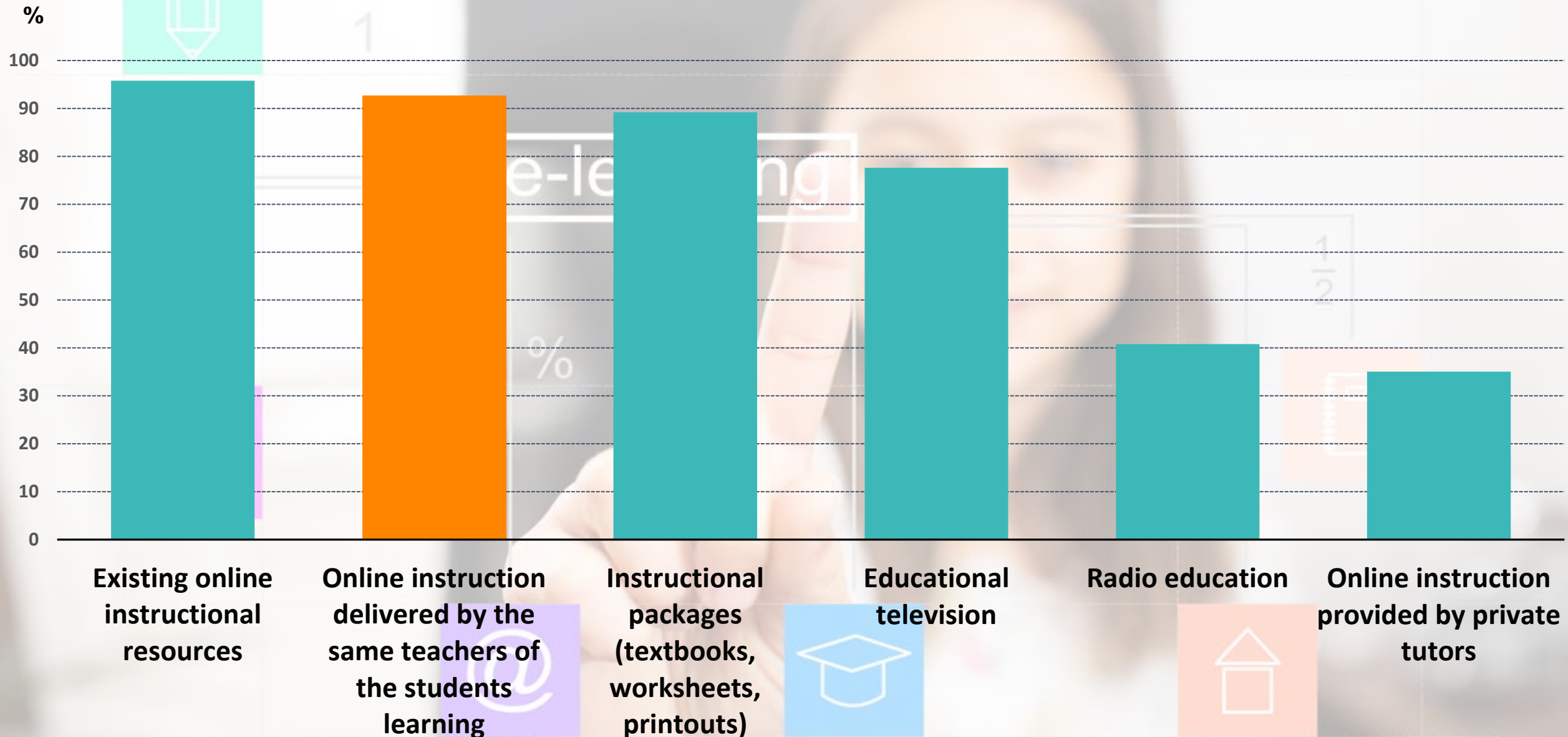
Hands-on assessment in vocational settings

Increasing reliability of machine rating for essays

Predictive models may disrupt the

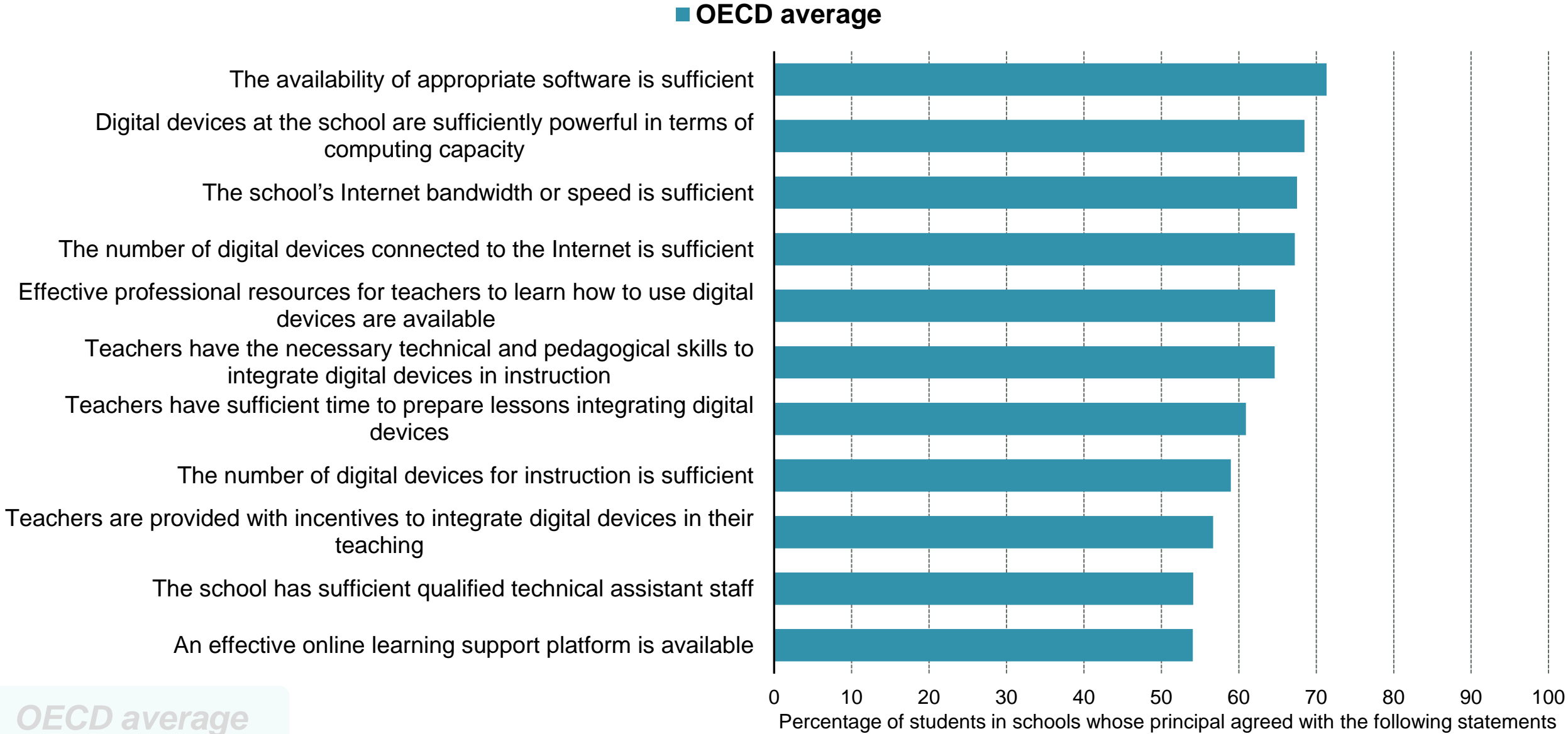


Instructional resources used (Averages across 36 countries, May 2020)



School's capacity to enhance teaching and learning using digital devices

Fig V.5.7

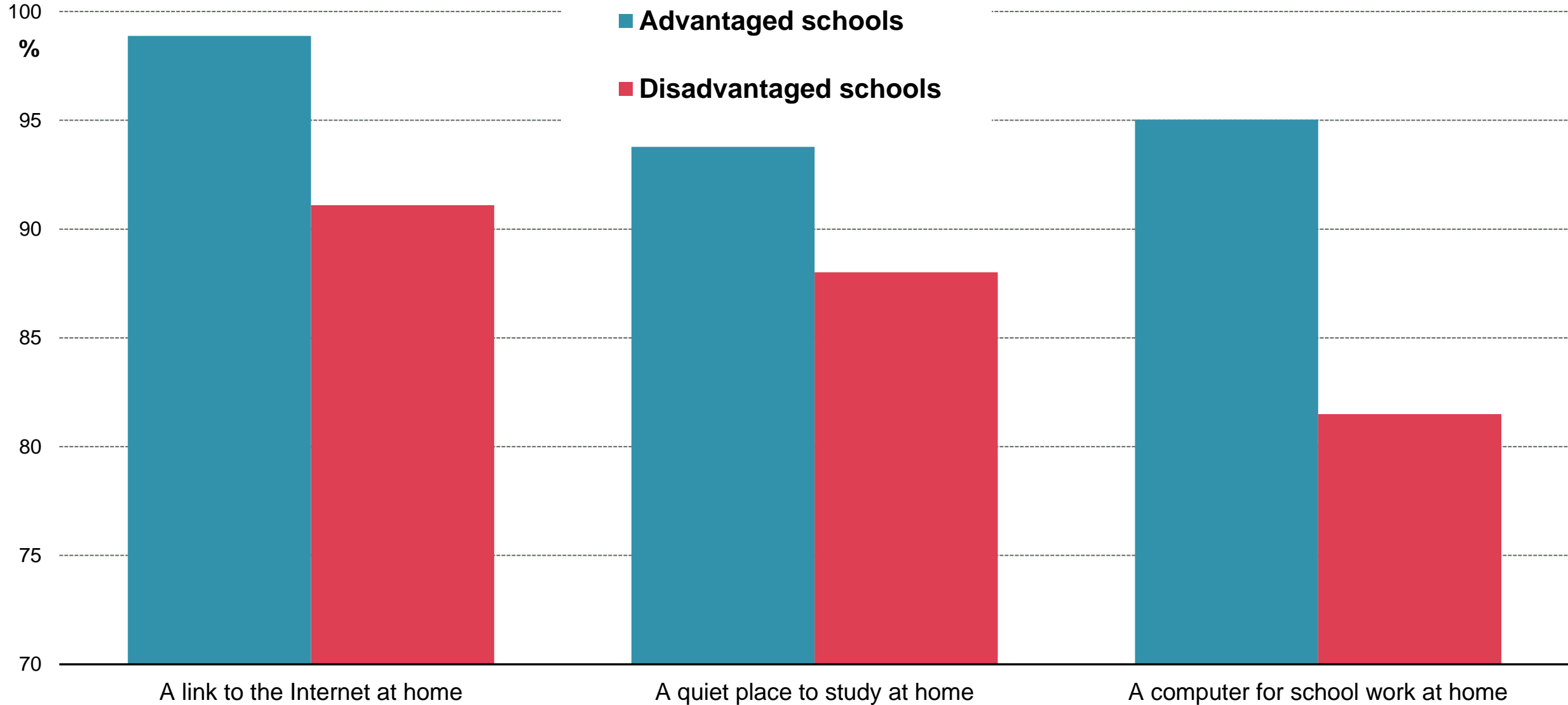




Students' online learning environment **at home**

OECD average

Fig V.9.1

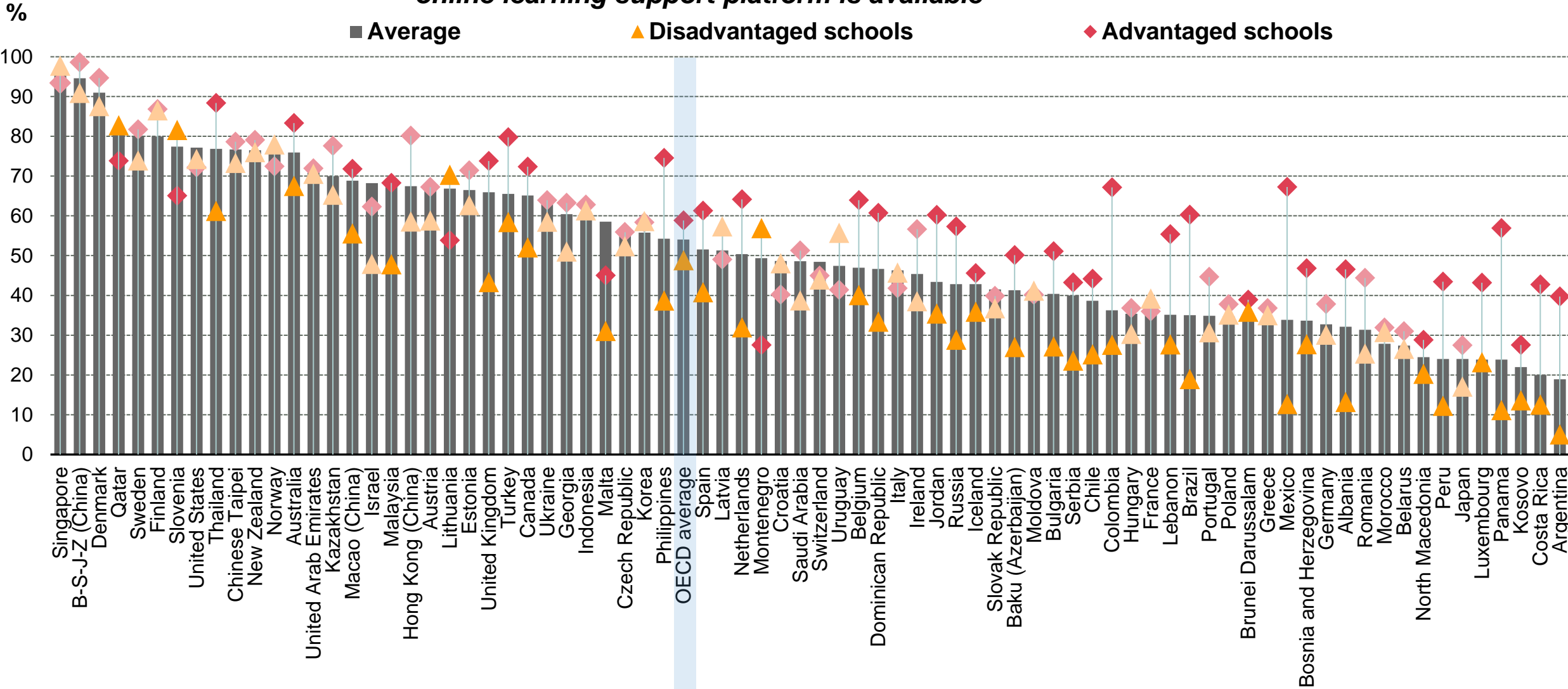




An effective online learning support platform is available

Fig A12

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

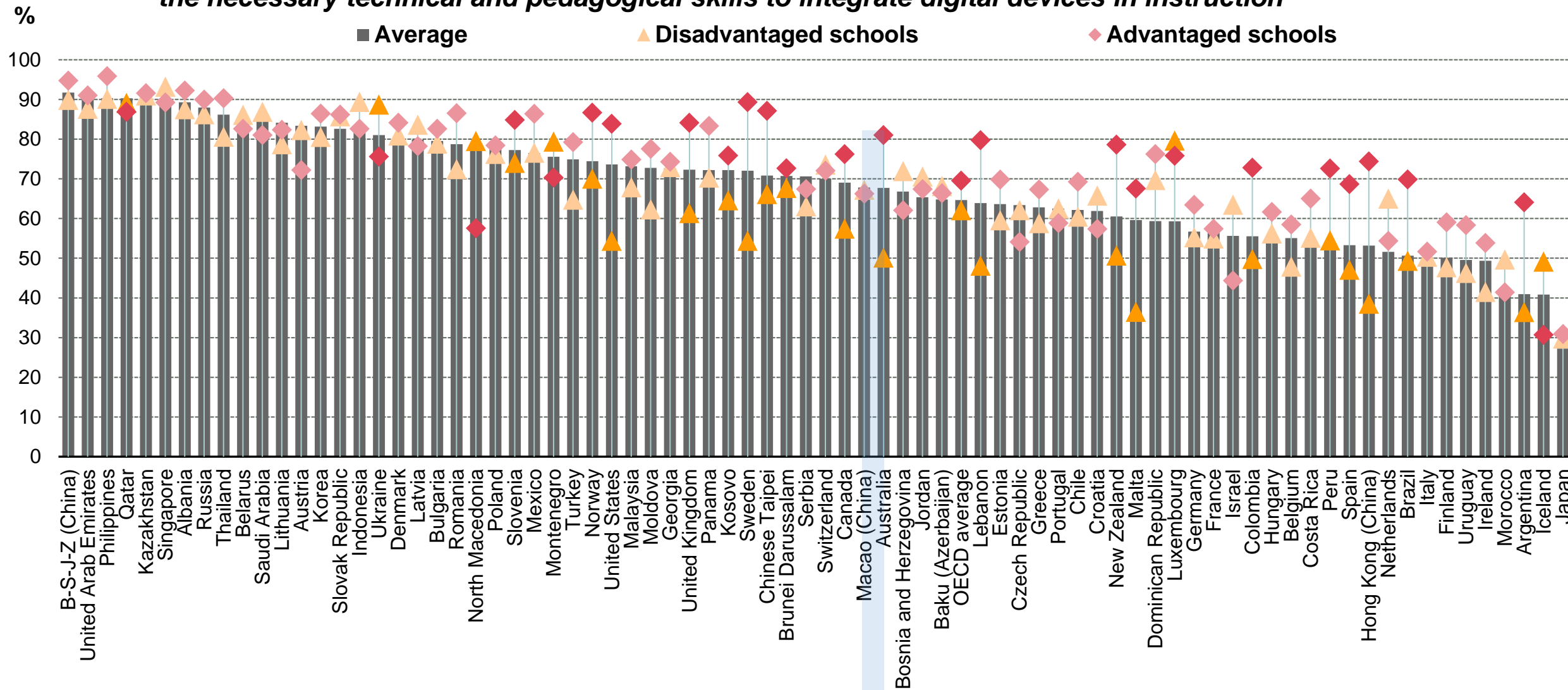




Teachers have the necessary technical and pedagogical skills to integrate digital devices in instruction

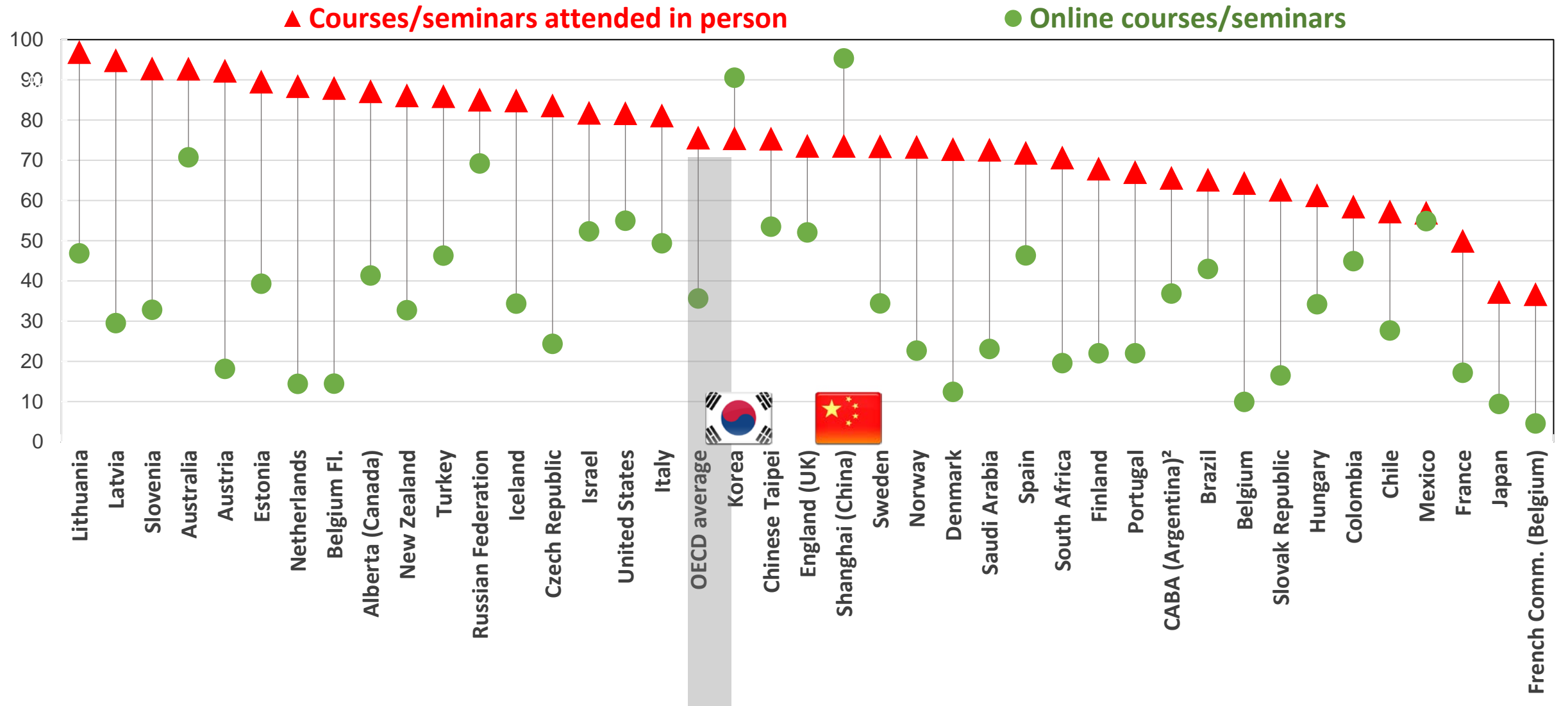
Fig A9

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



Teachers do not rely heavily on distance learning

Percentage of lower secondary teachers who participated in selected types of professional development (2018)



How do teachers collaborate with their peers?

Deeper form of collaboration are less prevalent than simple exchanges and co-ordination between teachers

How do teachers collaborate with their peers?

61% of teachers regularly discuss the development of students with colleagues

47% frequently exchange teaching materials



But only **28%** teach classes as a team at least once a month



And only **9%** routinely observe colleagues and give feedback

This kind of deeper professional collaboration is associated with higher job satisfaction, self-efficacy, and the use of innovative practices.

The future likes to surprise us !

We must explore and learn from alternative futures

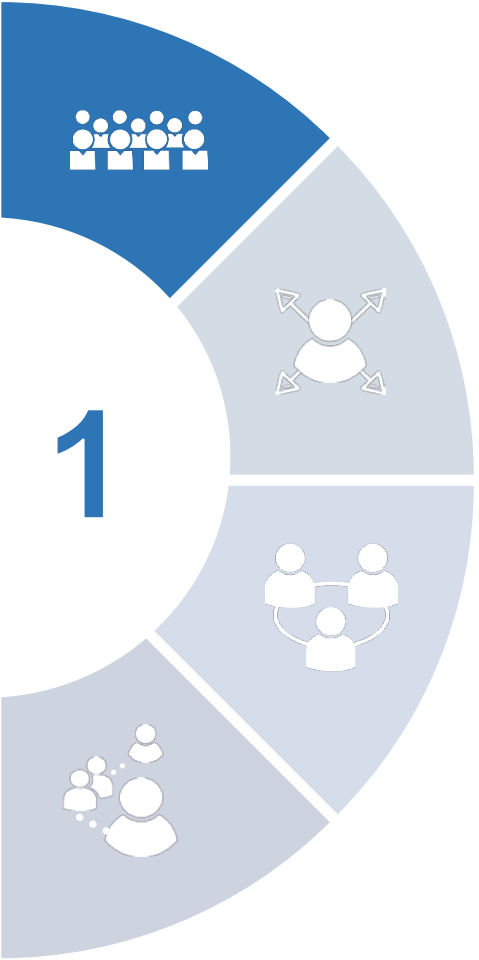


Some events are foreseeable and have a small impact...



...others are unexpected and can be highly disruptive!

Scenario 1: Schooling Extended



Participation in formal education continues to expand. International collaboration and technological advances support more individualised learning. The structures and processes of schooling remain.



Educational monopolies remain: Schools are key actors in socialisation, qualification, care and credentialing.



International collaboration and digital technologies power more personalised teaching and learning practices.



Distinct teacher corps remain, although with new divisions of tasks and greater economies of scale.

Scenario 2: Education Outsourced



Traditional schooling systems break down as society becomes more directly involved in educating its citizens. Learning takes place through more diverse, privatised and flexible arrangements, with digital technology a key driver.



Fragmentation of demand with self-reliant “clients” looking for flexible services.



Schooling systems as players in a wider (local, national, global) education market. Diversification of structures: multiple organisational forms available to individuals.



Diversity of instructional roles and teaching status operating within and outside of schools.

Scenario 3: Schools as Learning Hubs



Schools remain, but diversity and experimentation have become the norm. Opening the “school walls” connects schools to their communities, favouring ever-changing forms of learning, civic engagement and social innovation.



Strong focus on local decisions; self-organising units in diverse partnerships. Schools as hubs function to organise multiple configurations of local-global resources.



Flexible schooling arrangements permit greater personalisation and community involvement.



Professional teachers as nodes of wider networks of flexible expertise.

Scenario 4: Learn-as-you-go



Education takes place everywhere, anytime. Distinctions between formal and informal learning are no longer valid as society turns itself entirely to the power of the machine.












Traditional goals and functions of schooling are overwritten by technology. Dismantling of schooling as a social institution.



Open market of “prosumers” with a central role for communities of practice (local, national, global).



(Global) governance of data and digital technologies becomes key.

<div>OECD</div> <div>Scenarios for the Future of Schooling</div>	<div>  </div> <div>Goals and functions</div>	<div>  </div> <div>Organisation and structures</div>	<div>  </div> <div>The teaching workforce</div>	<div>  </div> <div>Governance and geopolitics</div>	<div>  </div> <div>Challenges for public authorities</div>
<div>Scenario 1</div> <div>  </div> <div>Schooling extended</div>	Schools are key actors in socialisation, qualification, care and credentialing.	Educational monopolies retain all traditional functions of schooling systems.	Teachers in monopolies, with potential new economies of scale and division of tasks.	Strong role for traditional administration and emphasis on international collaboration.	Accommodating diversity and ensuring quality across a common system. Potential trade-off between consensus and innovation.
<div>Scenario 2</div> <div>  </div> <div>Education outsourced</div>	Fragmentation of demand with self-reliant “clients” looking for flexible services.	Diversification of structures: multiple organisational forms available to individuals.	Diversity of roles and status operating within and outside of schools.	Schooling systems as players in a wider (local, national, global) education market.	Supporting access and quality, fixing “market failures”. Competing with other providers and ensuring information flows.
<div>Scenario 3</div> <div>  </div> <div>Schools as learning hubs</div>	Flexible schooling arrangements permit greater personalisation and community involvement.	Schools as hubs function to organise multiple configurations of local-global resources.	Professional teachers as nodes of wider networks of flexible expertise.	Strong focus on local decisions. Self-organising units in diverse partnerships.	Diverse interests and power dynamics; potential conflict between local and systemic goals. Large variation in local capacity.
<div>Scenario 4</div> <div>  </div> <div>Learn-as-you-go</div>	Traditional goals and functions of schooling are overwritten by technology.	Dismantling of schooling as a social institution.	Open market of “prosumers” with a central role for communities of practice (local, national, global).	(Global) governance of data and digital technologies becomes key.	Potential for high interventionism (state, corporate) impacts democratic control and individual rights. Risk of high social fragmentation.

Thank you



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