

### Technology in education: A tool on whose terms

23 May 2024 Manos Antoninis, Director, Global Education Monitoring Report



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### The GEM Report is the tool of the international community since 2002

Editorially independent report monitoring international education goals, hosted and published by UNESCO

**Received a mandate in 2015 to monitor** progress on education in the 2030 Agenda; and strategies to achieve SDG 4

More than just a report Regional/thematic editions, online resources Role in SDG 4 monitoring framework









#### National SDG 4 benchmarking process

= national targets on 8 SDG 4 indicators for 2025 and 2030







In collaboration with the European Commission



Global Education Monitoring Report

**Technology use has grown rapidly** MOOC enrolment grew to at least 220 million in 10 years

Use varies by income, education level, teacher preparedness No distance learning for 72% of the poorest

Children can/do learn without technology Can technology solve key education challenges: equity? quality? efficiency? Many students are still not regularly exposed to technology in school

### Al is the latest technology touted with a transformative potential

Multiple uses and opportunities envisaged Personalized tutoring, immersive learning, marking, lesson planning, routine research

But major challenges and risks anticipated Assessment, algorithm abuse, trust, privacy, written language, curriculum orientation

National AI strategies emerging... ...but emphasis on capacity development, not on use for teaching and learning





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### Good impartial evidence on education technology is rare

Education technology evolves faster than we can evaluate it Products change every 36 months

**Technology adopted with little evidence** In the United Kingdom, 7% of companies did randomized trials, 18% academic studies

A lot of the evidence is generated from those trying to sell it... ...contradicting independent assessments









Technology helps content creation and adaptation, access and distribution ...and can drastically reduce costs

But online content is mainly produced by dominant groups, affecting access to it 92% of OER Commons content is in English

Higher education adopts technology the fastest and is transformed by it the most Platforms challenge universities' role



# Quality: *some* education technologies can improve *some* types of learning in *some* contexts



#### It greatly increases access to resources ...and can fill quality gaps, increase practice time, personalize instruction, help engage

but

It can be detrimental if excessive Almost one quarter of countries ban the use of smartphones in school

It should focus on learning outcomes, not on digital inputs Millions of laptops given without impact

It need not be advanced to be effective In China, recorded lessons to 100 million rural students improved outcomes by 32%



# Efficiency: various issues prevent the use of technology in education management from fulfilling its potential



Distance teacher education is efficient Online coaching is not as effective as face-to-face but can be 80% cheaper

Computer-based and computer adaptive tests open opportunities in assessment... ...but transparent data on cost are lacking

Learning data analytics improve feedback ...but data literacy is limited, datasets are not integrated, and privacy is a concern





Technology is often bought to plug a gap, with no view to the long-term costs



Full costs and benefits are underestimated In the United States, only 11% requested peer-reviewed evidence prior to adoption

Money is not always well spent Around two-thirds of education software licenses were unused in the United States

Costs are, so far, additional

Soft digital transformation in the poorest countries will increase financing gap by 50%





# Many countries lack laws, policies and regulations on the use of technology in education



Guarantee data Regulate use of personal privacy in education devices in schools PEER 16 19 Provide a device for every student/family Give subsidies/deductions to 15 families to purchase devices 20 40 % of countries have plans on cyberbullying ...61% in Europe and USA Law for universal Ensure internet provision of electricity connectivity They are effective 27 for learners A review of high-income 85 countries found that programmes had 73% success in reducing Equitable access to cyberbullying Improve access technology in school Universal internet to electricity 31 provision law 52 37

- 1. Personalization and adaptation vs social dimension of education
- 2. Inclusivity vs exclusivity
- 3. Commercial interest vs common good
- 4. Short term efficiency vs long-term costs





#### Use a compass when deciding to deploy technology in education







**Is this use of education technology** <u>appropriate</u> for context? Strengthen education systems and align with learning objectives





Reform curricula for digital tools that improve learning reflecting how students learn An AI-based system no better than traditional teaching

Design, monitor and evaluate policies with the participation of teachers and learners 41% of senior leaders consulted in the United States

Ensure solutions are designed to fit the context 43% of lower secondary teachers felt prepared to use technology for teaching even after training



Is this use of education technology equitable? Avoid benefitting privileged and marginalizing other learners



Focus on technology supporting the marginalized There is a clear tendency to promote dominant cultural norms

Set national targets on meaningful school internet connectivity by 2030 Benchmark process a landmark in SDG 4 monitoring

**Promote digital public goods in education** UNESCO and UNICEF Gateways to build international consensus about norms and quality for platforms



### Is this use of education technology scalable? Take decisions with evidence of short-term costs and benefits



Establish bodies to evaluate education technology In the United States Clearinghouse, only 2% of products had 'strong or moderate evidence of effectiveness'

Estimate total cost of ownership and implementation Initial investment in education technology accounts for just 25% of eventual total cost

Ensure transparency on public spending and terms of agreements with private companies Decentralization of decisions is difficult for schools



**Does this use of technology support <u>sustainable</u> education futures?** Take decisions with evidence of long-term costs and benefits



**Establish broad curriculum framework of digital skills** 5% of students with strong but 24% of those with weakest reading skills were misled by phishing emails

Protect learners' and teachers' human rights, wellbeing, safety and privacy 89% of products reviewed collected children's data

**Consider material and energy implications** Extending lifespan of all laptops in the EU by a year is equivalent to almost 1 million cars off the road



## #TechOnOurTerms



Keep learners' best interests at the centre of a framework based on human rights

Focus on learning outcomes, not digital inputs.

Digital technology should not be a substitute for but a complement to human interaction



## **#TechOnOurTerms**

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