Reflections on Digital Transformation in Higher Education

PURCO SA Conference – 2023

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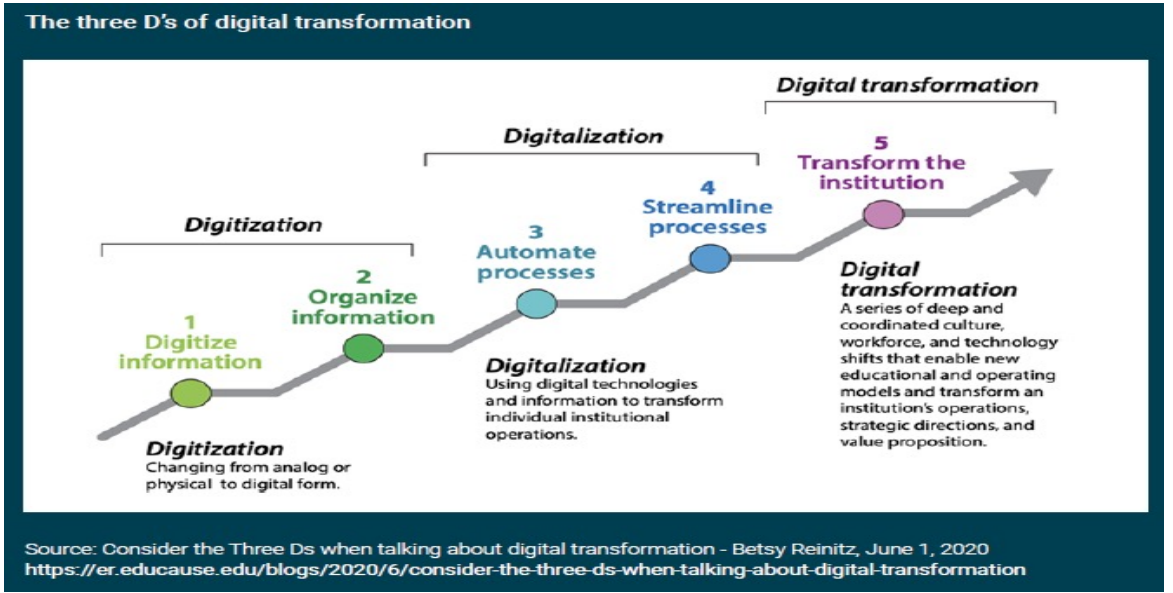
Dx defined

Digital Transformation is "a series of deep and coordinated **culture, workforce**, and **technology** shifts that enable new educational and operating models and transform an institution's operations, strategic directions, and value proposition” (Educause, 2020)

Dx maturity


The three D's of digital transformation
Digital transformation
Digitalization
Digitization
1
Digitize information
2
Organize information
3
Automate processes
4
Streamline processes
5
Transform the institution
Digitization
Changing from analog or physical to digital form.
Digitalization
Using digital technologies and information to transform individual institutional operations.
Digital transformation
A series of deep and coordinated culture, workforce, and technology shifts that enable new educational and operating models and transform an institution's operations, strategic directions, and value proposition.
Source: Consider the Three Ds when talking about digital transformation - Betsy Reinitz, June 1, 2020
https://er.educause.edu/blogs/2020/6/consider-the-three-ds-when-talking-about-digital-transformation

Dx objectives

- Digital transformation implies **organisational change**, catalysed by digital technologies, geared towards **operational performance**. (Seres, L., Palvicevic, V and Tumbas, P. 2018).

- "the purpose of the journey toward digital transformation is to reap the benefits of digital technologies, such as **productivity improvements**, **cost reductions** and **innovation**" (Hess, T., Benlian, A., Matt, C. and Wiesbock, F. 2016).

4IR

- "it is the fusion of these technologies and their interaction across the **physical** , **digital** and **biologica**l domains that makes 4IR fundamentally different from the previous revolutions" (Schwab, K. 2017).

- It unique for its **exponential** rather than linear pace, **fusion/integration** and **impact** on countries, organisations and society as a whole.

Critical junctures

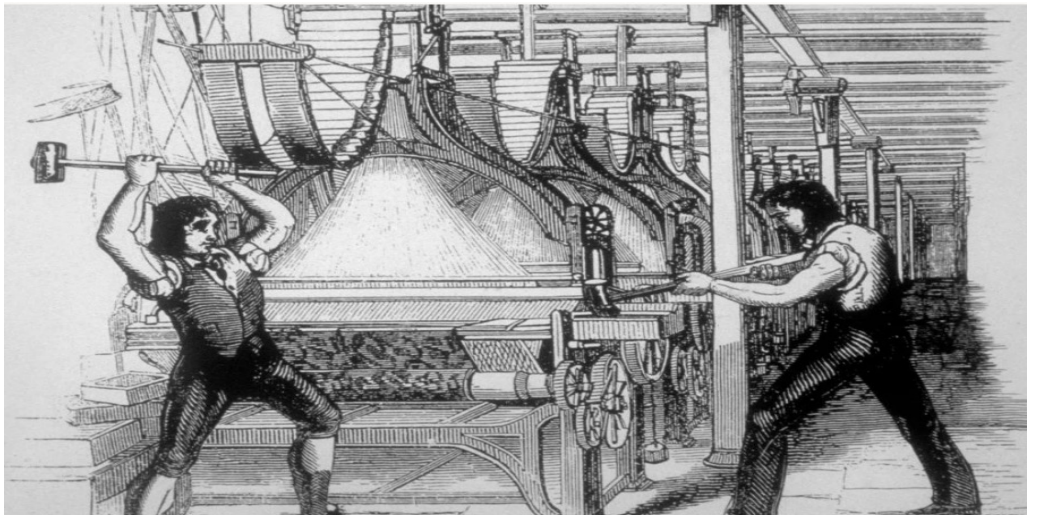
- "The industrial revolution created a ***transformative critical juncture*** for the whole world during the nineteenth century … Those societies that allowed and incentivized their citizens to invest in new technologies could grow rapidly" - (Acemoglu, D. and Robinson, J. 2013).

Creative destruction

the idea that "the old way" of doing things is constantly getting destroyed or supplanted as it is replaced by a newer, better alternative

(source: Forbes.com).

Luddites



Resistance to change

More than technology

- "Technology and technology-driven change has virtually nothing to do with igniting a transformation from good to great. Technology can **accelerate** a transformation, but technology cannot cause a transformation (Collins, J. 2001)
- "your **culture**, **agility** and **people** are your long-term competitive advantage" (Anderson, M. 2020).

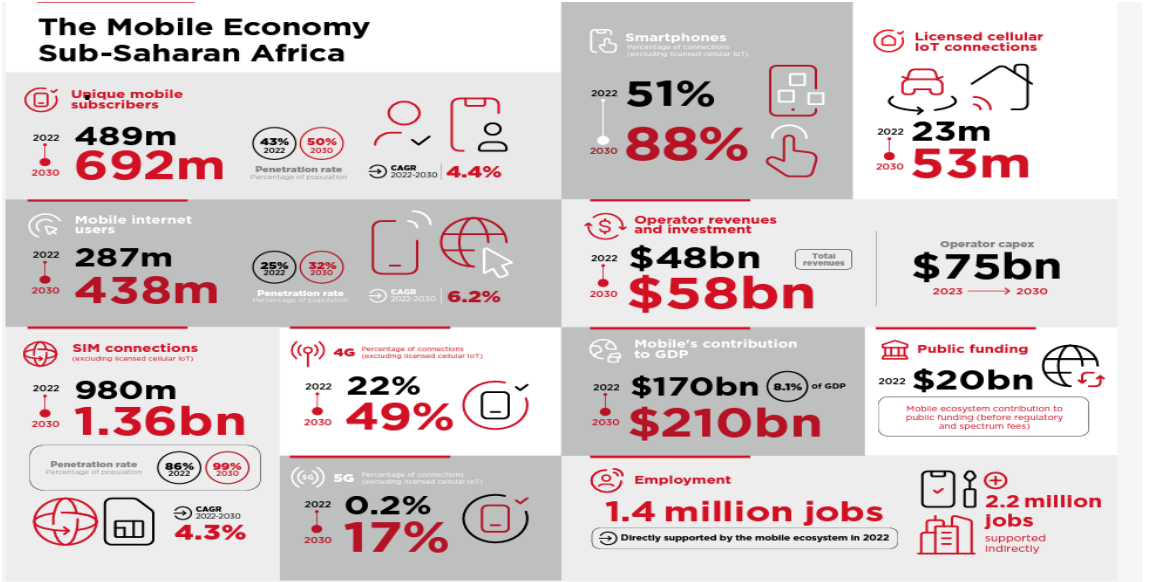
Selected emerging Trends

- Access and connectivity
- Social media
- IoT and AI
- Hyper-scalers and cloud services
- Digital skills
- Technology enhanced learning
- Growth in Cryptocurrencies including blockchain
- Business intelligence and analytics

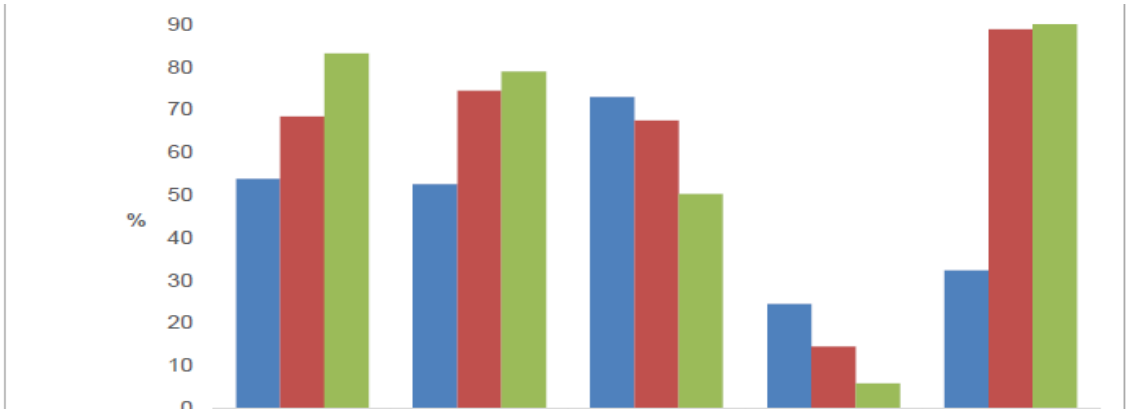
Connectivity and access

"ICT will continue to reduce spatial exclusion, enabling seamless participation by the majority in the global ICT system, not simply as users but as content developers and application innovators."

(source: NDP).

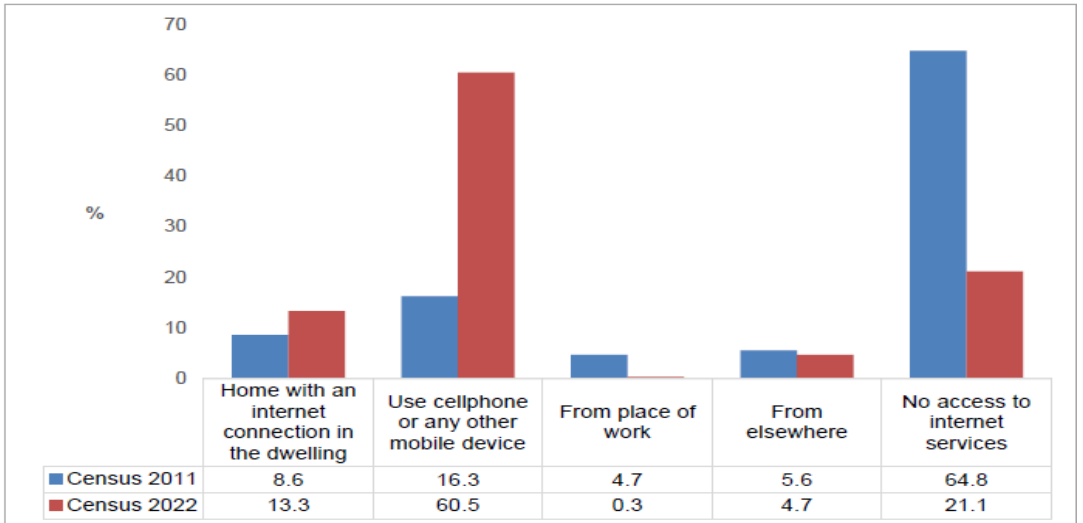

The Mobile Economy
Sub-Saharan Africa
Unique mobile subscribers
2022 489m
2030 692m
43% 2022
50% 2030
Penetration rate
Percentage of population
CAGR 2022-2030 4.4%
Smartphones
Percentage of connections (excluding licensed cellular IoT)
2022 51%
2030 88%
Licensed cellular IoT connections
2022 23m
2030 53m
Mobile internet users
2022 287m
2030 438m
25% 2022
32% 2030
Penetration rate
Percentage of population
CAGR 2022-2030 6.2%
Operator revenues and investment
2022 $48bn
2030 $58bn
Total revenues
Operator capex
$75bn
2023 → 2030
SIM connections
(excluding licensed cellular IoT)
2022 980m
2030 1.36bn
Penetration rate
Percentage of population
86% 2022
99% 2030
CAGR 2022-2030 4.3%
4G Percentage of connections (excluding licensed cellular IoT)
2022 22%
2030 49%
5G Percentage of connections (excluding licensed cellular IoT)
2022 0.2%
2030 17%
Mobile's contribution to GDP
2022 $170bn 8.1% of GDP
2030 $210bn
Public funding
2022 $20bn
Mobile ecosystem contribution to public funding (before regulatory and spectrum fees)
Employment
1.4 million jobs
Directly supported by the mobile ecosystem in 2022
2.2 million jobs
supported indirectly

% distribution with access to household goods



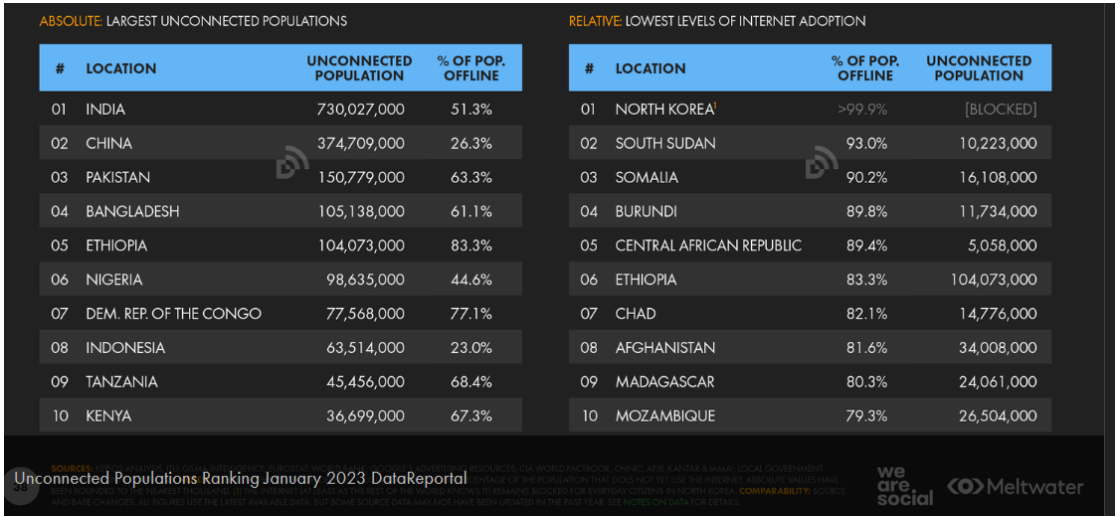
	Refrigerator /freezer	Television	Radio	Landline /telephone	Cellphone
Census 2001	53.8	52.6	73.0	24.4	32.3
Census 2011	68.4	74.5	67.5	14.4	88.9
Census 2022	83.2	79.0	50.3	5.8	92.1

% distribution of households with access to internet



	Home with an internet connection in the dwelling	Use cellphone or any other mobile device	From place of work	From elsewhere	No access to internet services
Census 2011	8.6	16.3	4.7	5.6	64.8
Census 2022	13.3	60.5	0.3	4.7	21.1

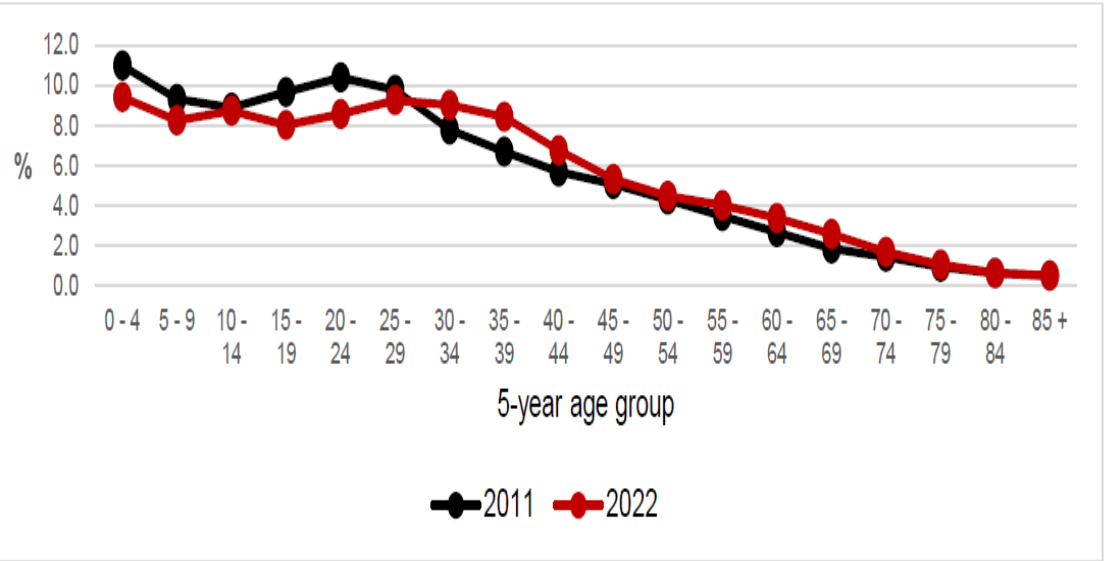
Unconnected populations



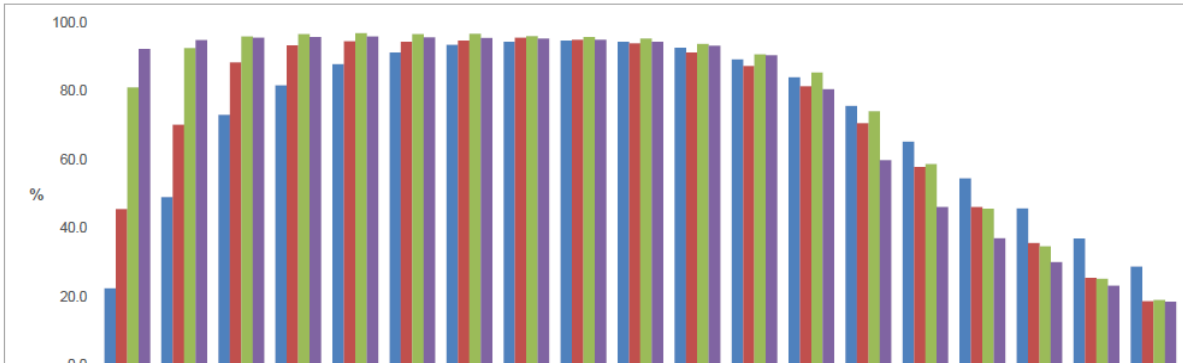
#	LOCATION	UNCONNECTED POPULATION	% OF POP. OFFLINE
01	INDIA	730,027,000	51.3%
02	CHINA	374,709,000	26.3%
03	PAKISTAN	150,779,000	63.3%
04	BANGLADESH	105,138,000	61.1%
05	ETHIOPIA	104,073,000	83.3%
06	NIGERIA	98,635,000	44.6%
07	DEM. REP. OF THE CONGO	77,568,000	77.1%
08	INDONESIA	63,514,000	23.0%
09	TANZANIA	45,456,000	68.4%
10	KENYA	36,699,000	67.3%

#	LOCATION	% OF POP. OFFLINE	UNCONNECTED POPULATION
01	NORTH KOREA[1]	>99.9%	[BLOCKED]
02	SOUTH SUDAN	93.0%	10,223,000
03	SOMALIA	90.2%	16,108,000
04	BURUNDI	89.8%	11,734,000
05	CENTRAL AFRICAN REPUBLIC	89.4%	5,058,000
06	ETHIOPIA	83.3%	104,073,000
07	CHAD	82.1%	14,776,000
08	AFGHANISTAN	81.6%	34,008,000
09	MADAGASCAR	80.3%	24,061,000
10	MOZAMBIQUE	79.3%	26,504,000

SA Population (Census report 2022)

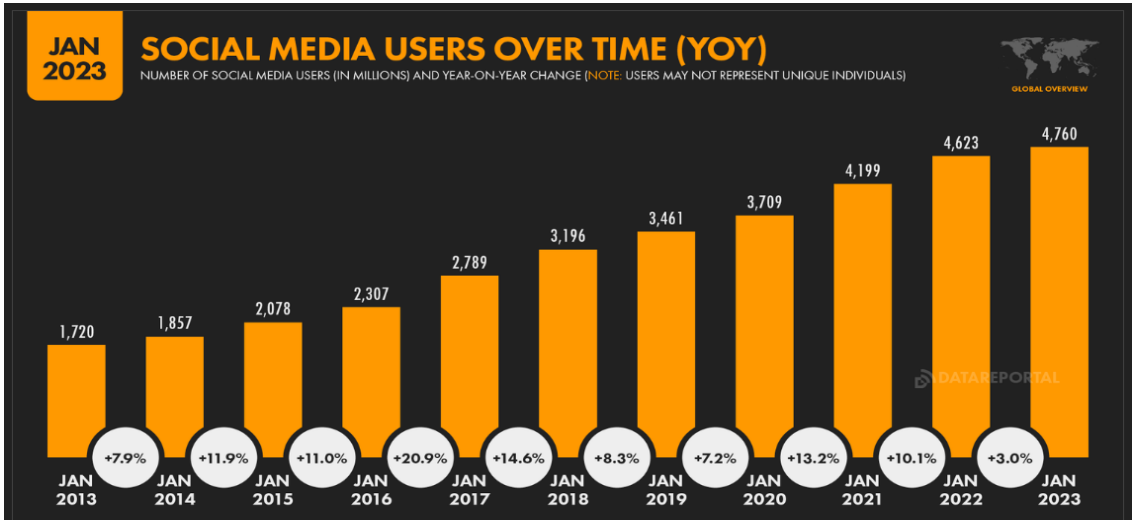


Participation rate in education

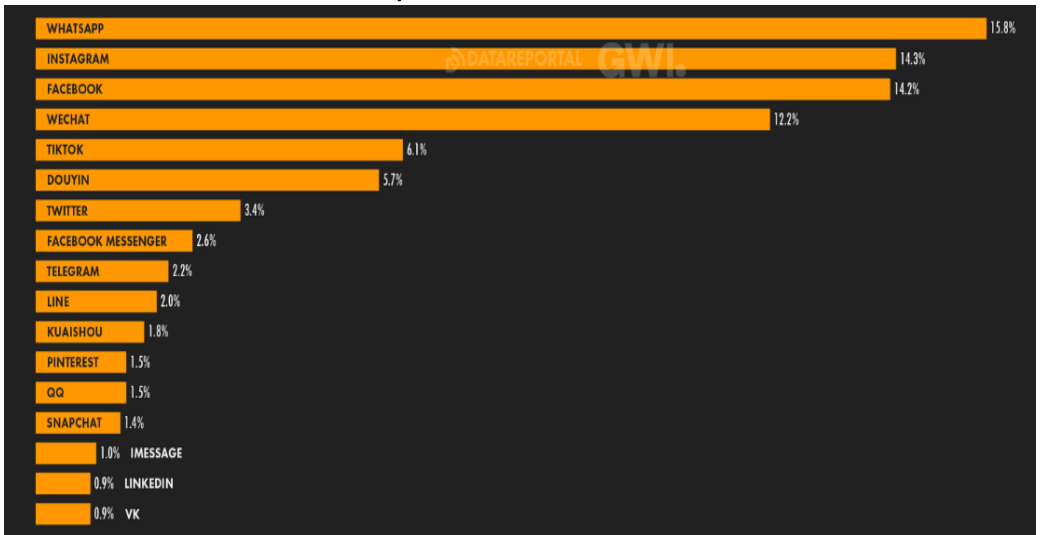


	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1996	22.5	49.1	73.1	81.8	87.9	91.3	93.6	94.4	94.8	94.4	92.7	89.3	84.1	75.7	65.3	54.6	45.8	37.0	28.8
2001	45.6	70.3	88.4	93.4	94.6	94.4	94.8	95.7	95.1	94.0	91.3	87.4	81.5	70.7	57.9	46.2	35.7	25.5	18.8
2011	81.1	92.6	96.0	96.7	97.0	96.7	96.8	96.1	95.8	95.4	93.8	90.8	85.5	74.2	58.8	45.7	34.8	25.3	19.1
2022	92.4	95.0	95.7	95.9	96.0	95.8	95.6	95.4	95.0	94.5	93.3	90.6	80.6	59.9	46.2	37.0	30.1	23.2	18.6

Social media



Favourite social media platforms

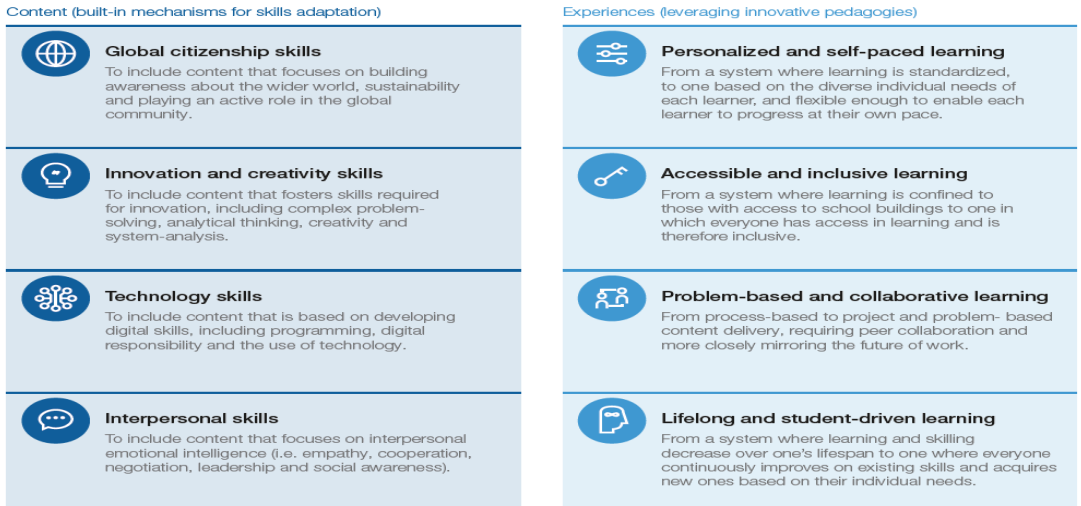


Edutech

"…technology for the sake of technology alone will not improve learning. Targeted efforts must be made to integrate technology strategically – alongside effective and innovative pedagogies – to benefit learning".

(WEF Education Insight report, May 2022).

WEF – Education 4.0 Framework (Source WEF, 2020).



Great by choice – key success attributes

- Fanatical discipline
- Empirical creativity
- Productive paranoia
- Level 5 ambition