Professor Greta B Gudmundsdottir
Department of Teacher Education and School Research, University of Oslo Norway

- **Professor Nancy Law** & **Dr. Qianquian Pan** – HK student's digital literacy development from primary to secondary before and after the pandemic

- **Dr. Riina Vuorikari** – Digital Competence for Citizens. Update 2.2 to include AI and data related skills

- **Dr. Manos Antoninis** – Defnining and measuring digital competence in a rapidly changing world. Monitoring the global education goal to invite policy responses.

The three presentations

- From micro to macro
- From Hong Kong to Europe to a global perspective
- From digital skills to digital literacy, digital competence and digital literacy global framework?

Most adults lack most ICT skills in most places

In 8 years the goal is that 80% of adults have the necessary «digital skills»

Students' digital literacy growth can be enhanced by provided better e-learning support (even) for students with low financial SES families

Most adults lack most ICT skills in most places

a. ICT skills possessed by at least 20% of adults

b. ICT skills possessed by at least 50% of adults
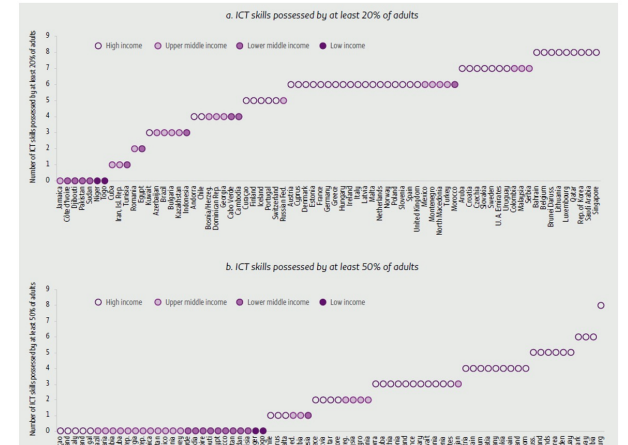
Digital skills challenge is high on the European Agenda!

EU wants 80% of adults to have digital skills by 2030
By EUOBSERVER

20%
Percentage of the Recovery and Resilience Facility each EU country should dedicate to the digital transition

DIGITAL EDUCATION ACTION PLAN 2021 - 2027
Resetting education and training for the digital age

EUROPEAN SKILLS AGENDA FOR SUSTAINABLE COMPETITIVENESS, SOCIAL FAIRNESS AND RESILIENCE

DL growth & SES—correlations

N.B. ACAD_CAP & HOME_RES are significantly correlated (p<0.001) for all 3 cohorts, correlation ~0.5.

		Full Wave-2 Samples		Matched Sample	
		ACAD_CAP	HOME_RES	ACAD_CAP	HOME_RES
Cohort 1	Wave-2 DL	.17**	.14**	.20**	.13
Cohort 2	Wave-2 DL	.13**	.06	.19**	.09
Cohort 3	Wave-2 DL	.08	.02	.19**	.06

Note. ** p< .01

Interpretations:
1. HOME_RES (dependent strongly on family financial status) is much less important for students' learning than the priority (ACAD_CAP) given by the family to support the child's learning. The latter is more malleable.
2. ACAD_RES has a higher correlation with DL achievement in Wave 2 (after online learning triggered by COVID), while HOME_RES correlations are not significant for any of the cohorts.
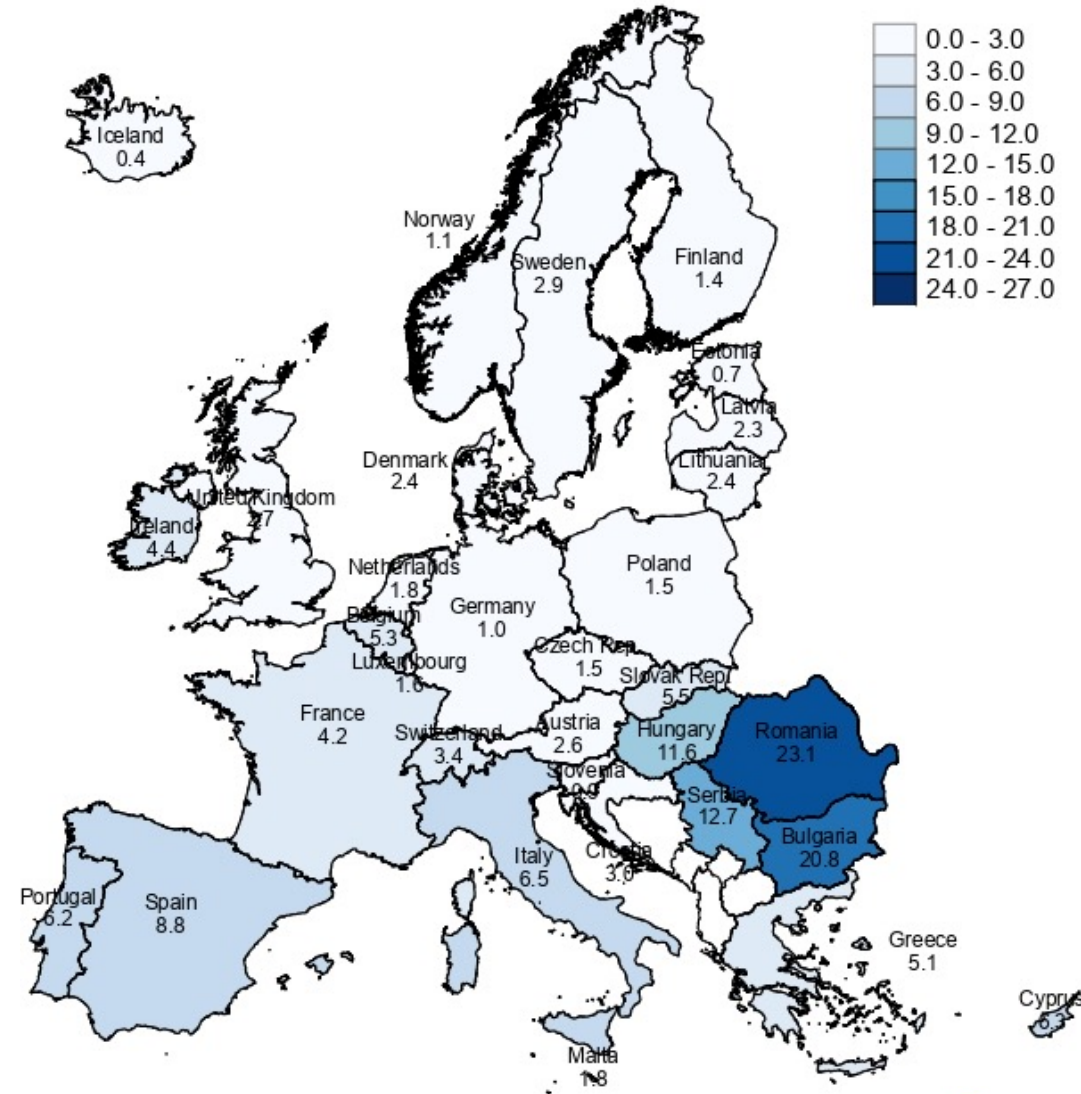
Students' DL growth can be enhanced by provided better e-learning support even for students from low financial SES families.

Children's digital deprivation* across European countries

*living in a household that cannot afford to have a computer and/or live with adults who claimed they could not to have an internet connection for personal use at home.

- Differences across Europe of digital deprivation among school-age children are large

- The map shows two country clusters and a certain North-South divide

- Still, we also see clear differences within affluent countries such as Norway

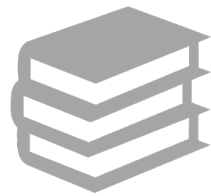Figure 1: Percentage of digitally deprived school-aged children (6-16), Europe, 2019

Legend:
- 0.0 - 3.0
- 3.0 - 6.0
- 6.0 - 9.0
- 9.0 - 12.0
- 12.0 - 15.0
- 15.0 - 18.0
- 18.0 - 21.0
- 21.0 - 24.0
- 24.0 - 27.0

Iceland 0.4
Norway 1.1
Sweden 2.9
Finland 1.4
Estonia 0.7
Latvia 2.3
Lithuania 2.4
Denmark 2.4
United Kingdom 2.7
Ireland 4.4
Netherlands 1.8
Belgium 5.3
Germany 1.0
Poland 1.5
Luxembourg 1.6
Czech Rep. 1.5
Slovak Rep. 5.5
France 4.2
Switzerland 3.4
Austria 2.6
Hungary 11.6
Romania 23.1
Slovenia
Serbia 12.7
Bulgaria 20.8
Italy 6.5
Croatia 3.0
Portugal 6.2
Spain 8.8
Greece 5.1
Cyprus
Malta 1.8

DigiGen

Is a common framework at all possible?

SDG target 4.4.2 indicator

Has lacked a framework and monitoring tools

Digital Literacy Global Framework

Technical Cooperation Group on SDG 4 indicators process

Review of 43 digital literacy frameworks with focus on 7 national and 3 popular enterprise frameworks

Key recommendation = adopt DigComp and add two areas

0. Hardware and software operations
1. Information and data literacy
2. Communication and collaboration
3. Digital content creation
4. Safety
5. Problem solving

6. Career-related competences
= use examples of digital literacy in major economic sectors
e.g. agriculture; energy; finance; and transportation

Professional digital competence for teachers

The *generic*

The *subject related*

The *profession related*

The *transformative*

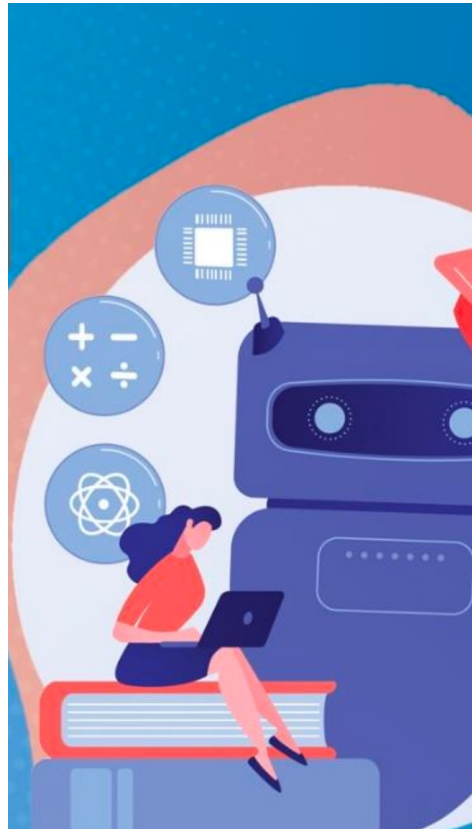Gudmundsdottir, G.B. & Hatlevik, O.E. (2018).
Newly qualified teachers' professional digital competence: implications for teacher education.
European Journal of Teacher Education 41(2), p. 214–231.
doi: 10.1080/02619768.2017.1416085.

Brevik, L.M.; Gudmundsdottir, G.B.; Lund, A. & Strømme, T. (2019).
Transformative Agency in Teacher Education: Fostering Professional Digital Competence .
Teaching and Teacher Education : An International Journal of Research and Studies. 86.
doi: 10.1016/j.tate.2019.07.005

Pedagogical, Ethical, Attitudinal and Technical (PEAT) model
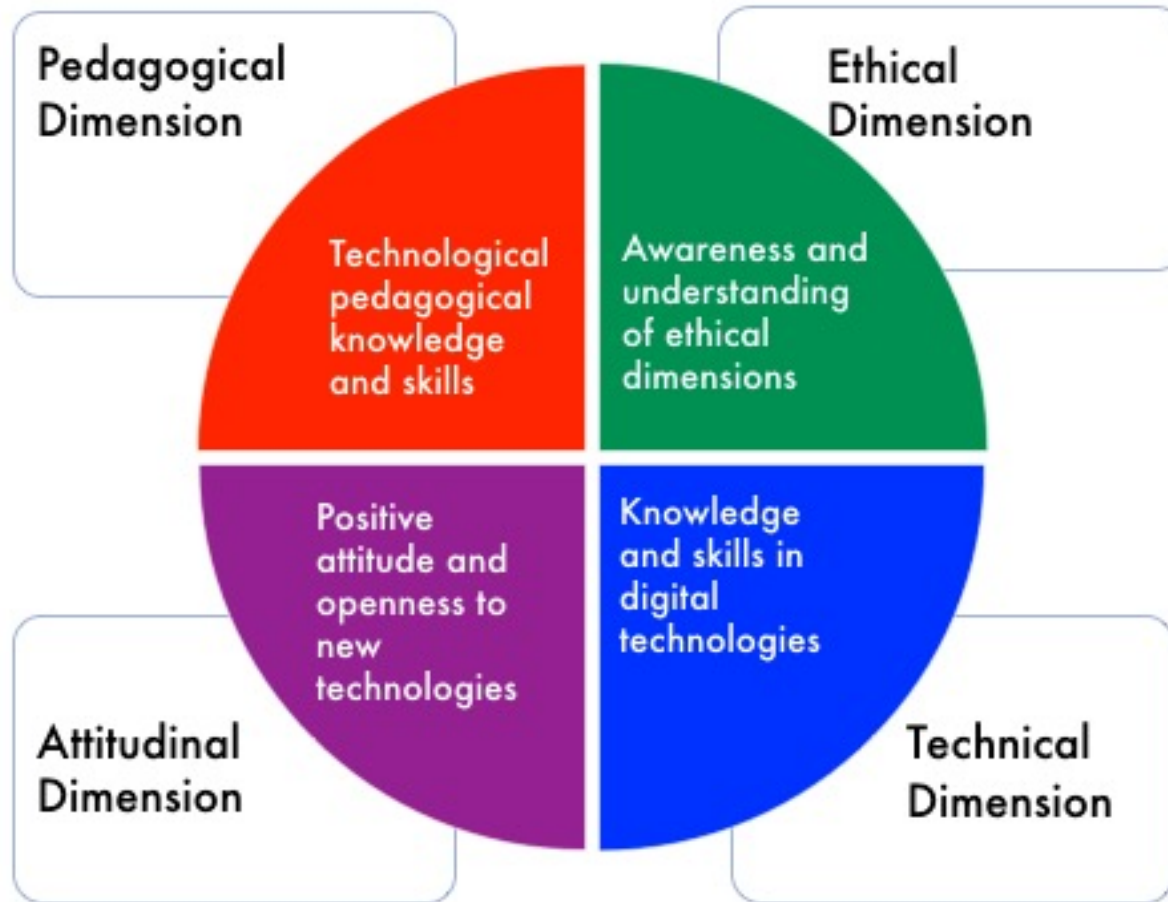
Pedagogical
Dimension

Technological pedagogical knowledge and skills

Ethical
Dimension

Awareness and understanding of ethical dimensions

Attitudinal
Dimension

Positive attitude and openness to new technologies

Knowledge and skills in digital technologies

Technical
Dimension

Gudmundsdottir, G.B. & Hathaway, D. (2020). "We Always Make It Work": Teachers' Agency in the Time of Crisis. *Journal of Information Technology and Teacher Education* 28(2), p. 239–250

Gudmundsdottir, G.B. & Hatlevik, O.E. (2020). "I just Google it" - Developing professional digital competence and preparing student teachers to exercise responsible ICT use. *Nordic Journal of Comparative and International Education (NJCIE)* 4(3), p. 39–55. doi: 10.7577/njcie.3752.

https://dicte.oslomet.no/wp-content/uploads/2019/03/DICTE-Digital-Competence-in-Teacher-Ed.-literature-review.pdf

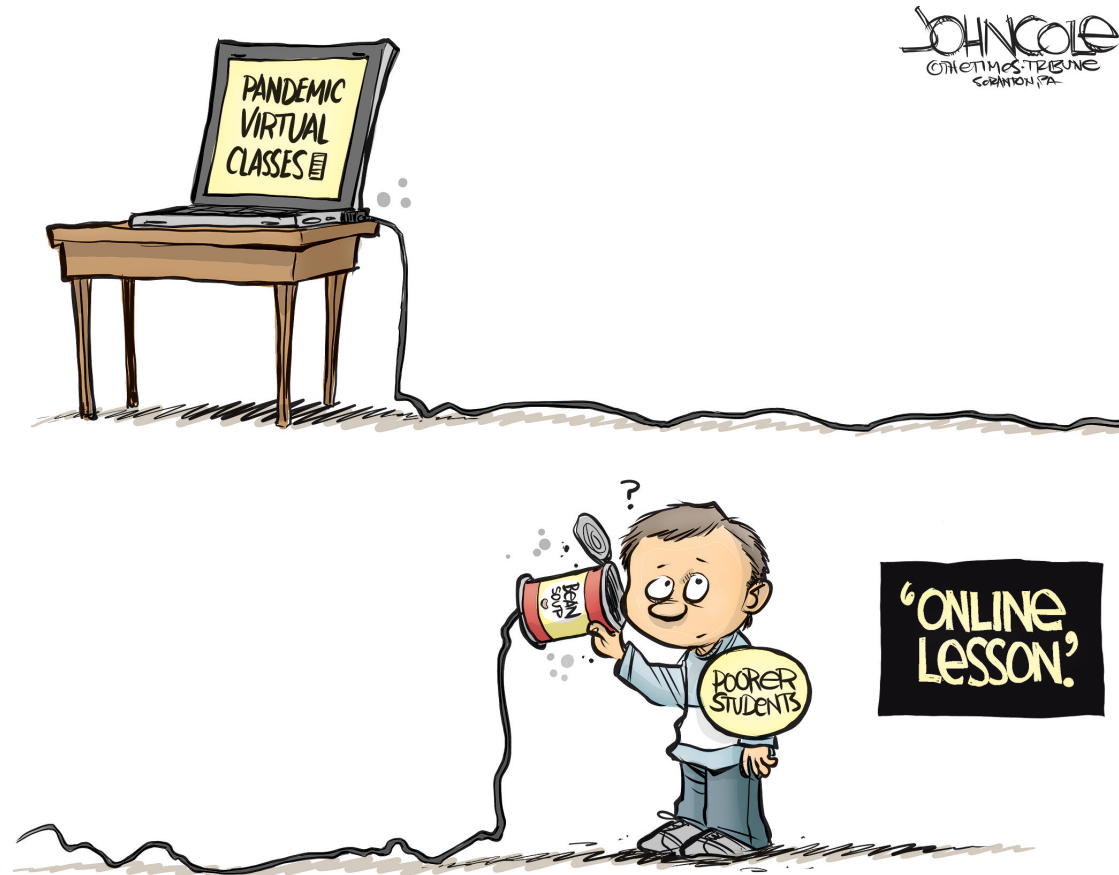# Digital responsibility and its growing importance

Gudmundsdottir, G.B.; Gassó, H.H.; Rubio, J.C.C. & Hatlevik, O.E.(2020). Student teachers' responsible use of ICT: Examining two samples in Spain and Norway. *Computers & Education*. 152(July 2020). doi: 10.1016/j.compedu.2020.103877.
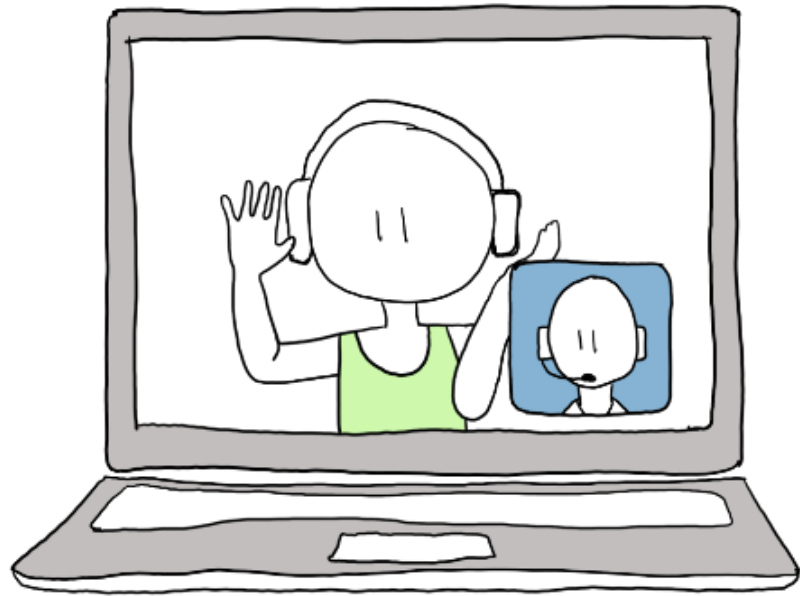
Gudmundsdottir, G.B. & Hathaway, D. (2020). "We Always Make It Work": Teachers' Agency in the Time of Crisis. *Journal of Information Technology and Teacher Education* 28(2), p. 239–250

Hatlevik, O.E.; Gudmundsdottir, G.B. & Rohatgi, A. (2021). Digital downsides in teacher education. *Nordic Journal of Comparative and International Education (NJCIE)* 5(4), p. 123–139. doi: 10.7577/njcie.4227.

"What is the education we want?"

- What kind of society are we preparing for?
- How will the future classroom look like?
- How does **teacher education** prepare future teachers?

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The digital generation project:
www.Digigen.eu