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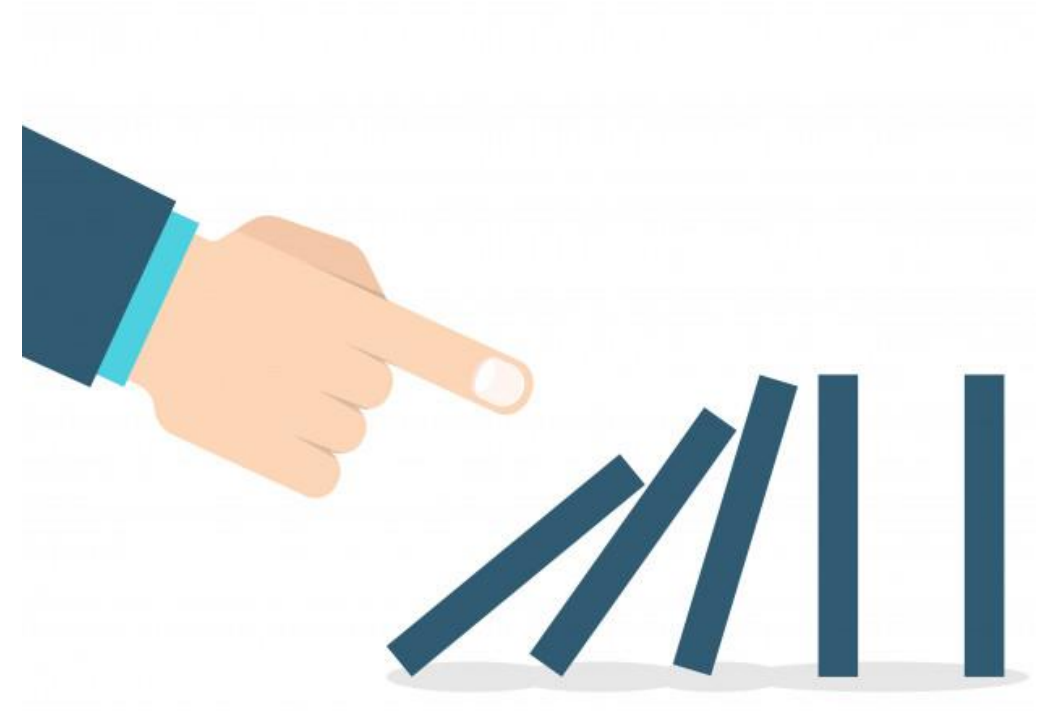
# Teaching towards new skills – educational designs and the role of the teacher

# Outline

A. Changes in the learning needs in society – what are the implications for teaching and learning?

B. Changes in how we teach and want our students to learn – what are the implications for the teacher?

- New ways of working in industry and professions
- New skills are required
- New content needs to be taught
- New ways of teaching need to be developed or at least put to use
- New learning outcomes (new skills, competences, etc.) require re-thinking of the pedagogies applied
- New ways of teaching requires new skills for the teaching professionals



# Changes in the learning needs

- Changes in learning needs require changes in curriculum
- Curriculum = *what* we teach; *how* we teach it; and how we *evaluate* the learning outcomes based on students' performance

# 21st Century Skills

ATC21S defined ten 21st-century skills into four broad categories.

These have been grouped under the acronym KSAVE: *knowledge, skills, attitudes, values and ethics.*

## WAYS OF THINKING

- Creativity and innovation
- Critical thinking, problem-solving, decision-making
- Learning to learn/metacognition (knowledge about cognitive processes)

## TOOLS FOR WORKING

- Information literacy
- Information and communication technology (ICT) literacy

## WAYS OF WORKING

- Communication
- Collaboration (teamwork)

## WAYS OF LIVING IN THE WORLD

- Citizenship – local and global
- Life and career
- Personal and social responsibility – including cultural awareness and competence

For further detail please see: Binkley, M., Erstad, O., Hermna, J., Raizen, S., Ripley, M., Miller-Ricci, M., & Rumble, M. (2012). *Defining Twenty-First Century Skills*. In Griffin, P., Care, E., & McGaw, B. *Assessment and Teaching of 21st Century Skills*, Dordrecht, Springer.

# Implications for education and the teaching professionals

”As the teaching professions face rapidly changing demands, educators require an *increasingly broad and more sophisticated set of competences* than before.”

”In particular the *ubiquity of digital devices* and the duty to *help students become digitally competent* requires educators to develop their own digital competence.”

European Framework for the Digital Competence of Educators  
(DigCompEdu)

# Industry 4.0

- We should train students for a society where new technologies will transform a variety of work functions and processes (Frey & Osborne, 2013) – a transformation themed ‘Industry 4.0’

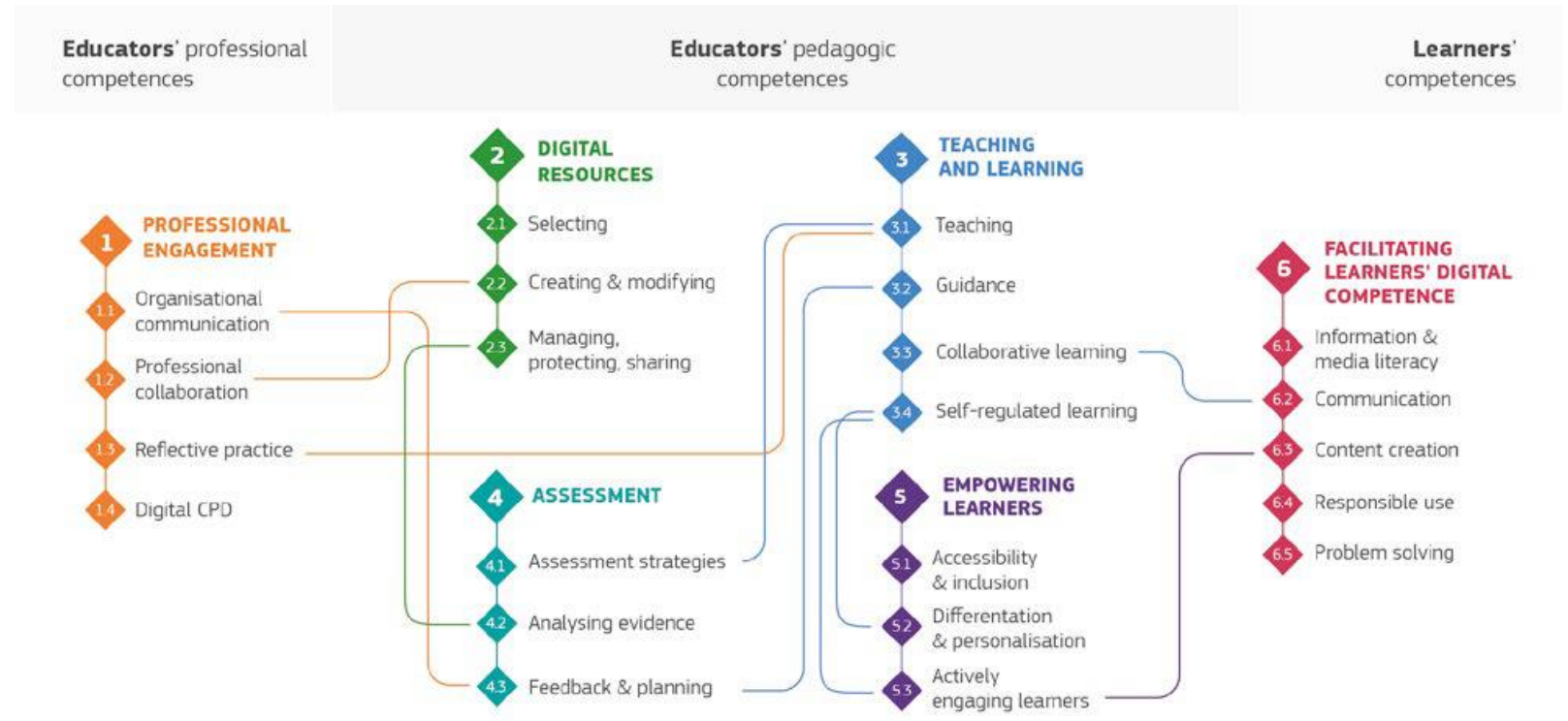
”On international, European, national and regional levels, there is consequently considerable interest in equipping teachers with the necessary competences to fully exploit the potential of digital technologies for enhancing teaching and learning and for adequately preparing their students for life and work in a digital society.”

European Framework for the Digital Competence of Educators  
(DigCompEdu)



# European Framework for the Digital Competence of Educators

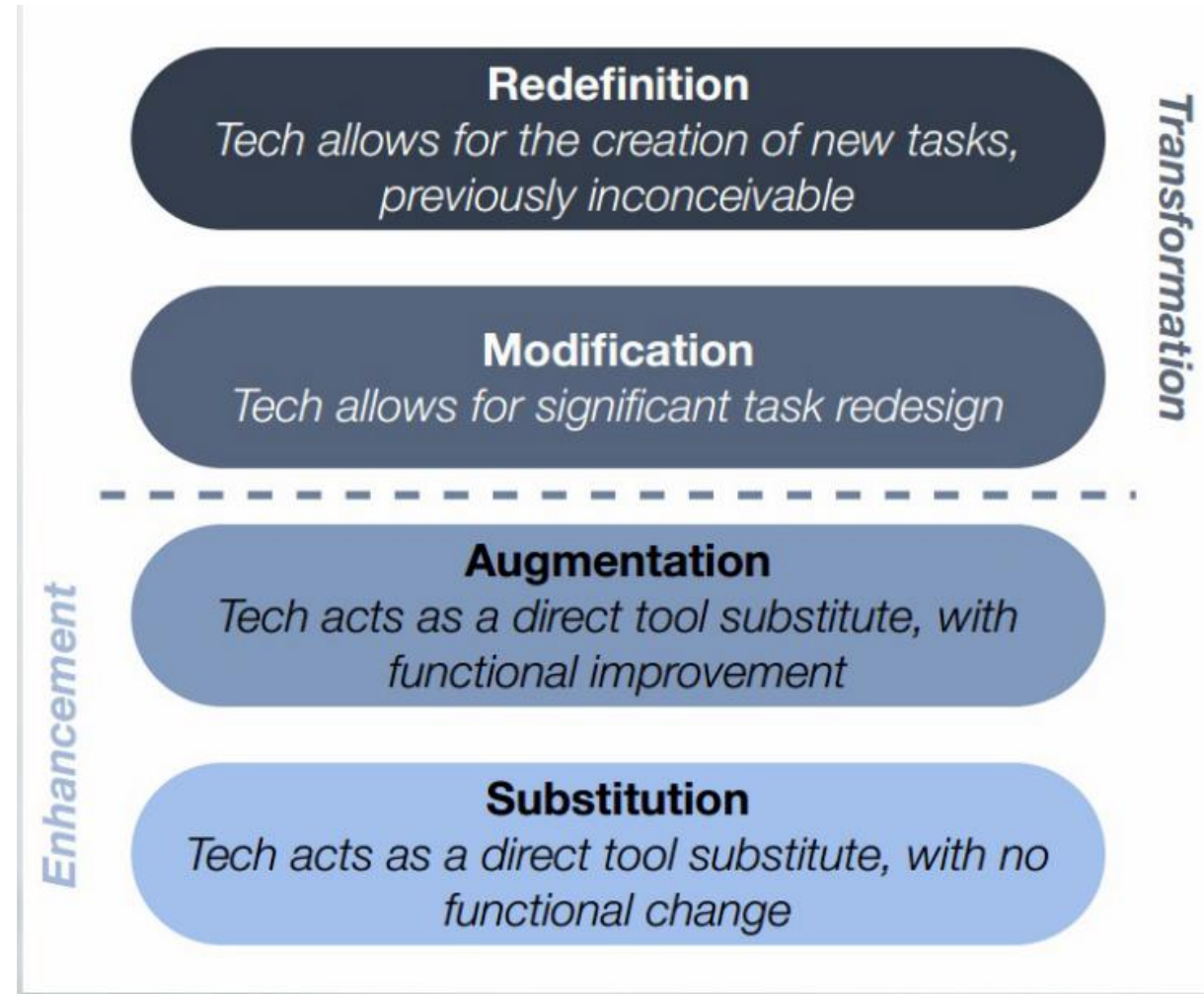
The DigCompEdu Framework aims to capture and describe educator-specific digital competences by proposing 22 elementary competences organised in 6 areas



# Implications for teaching? For teachers?

- The DigCompEdu framework emphasises what a teacher needs to do / to master in order to be a professionally capable teacher
- Areas 1 – 5 in the framework describe the teacher’s perspective; area 6 more directly addresses the learner perspective
- There is an implicit value added to use of technology:  
    ”The real potential of digital technologies lies in shifting the focus of the teaching process from teacher-led to learner-centred processes”

The SAMR Model is a framework that categorizes four different degrees of classroom technology integration.



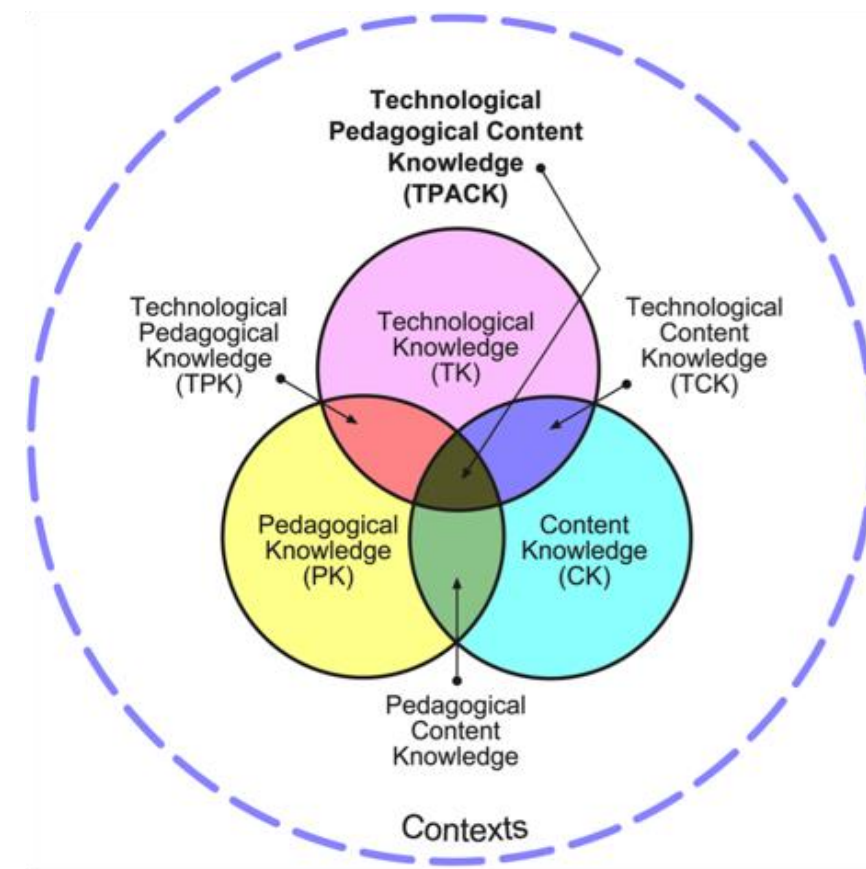
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	Formal learning	Informal learning
Disruptive innovation	A. Reinventing Schools	B. Transforming Schools (new paradigm)
Sustaining innovation	C. Improving Schools	D. Supplementing Schools

(Source: Hannon, Patton & Temperley, 2011, p. 7 – based on Leadbeater & Wong, 2010, p. 3)

# Reflections on teachers' professional development

- We need to aim CPD-efforts more directly towards the white areas on the map (in technical fields most often PCK in particular)
- To change teachers' practices, CPD needs to take place close to where this practice unfolds (in schools and classrooms)
- Teaching practices are embedded in organisations and in broader cultures
- To create a lasting change, the intervention / effort needs to address multiple dimensions (pedagogy; technology; subject matter; learning outcomes; evaluation; etc.)



# Thank you

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# References

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