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# AI, XR, and the Metaverse. Education's Response to Digital Transformation

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Schools have responded to digital transformation in various ways, and their approaches have evolved over time. Here are some common ways in which schools have responded to the digital transformation:



1. **Integration of technology in classrooms:** Schools have increasingly adopted digital tools and technologies to enhance the learning experience. This includes the use of interactive whiteboards, tablets, laptops, and educational software. Teachers are incorporating digital resources into their lessons, allowing students to engage with multimedia content and interactive activities.
2. **Online learning and blended learning:** The digital transformation has facilitated the growth of online learning and blended learning models. Schools have implemented learning management systems (LMS) and online platforms to deliver courses remotely, provide access to educational resources, and enable students to complete assignments and assessments online. Blended learning combines traditional classroom instruction with online components, providing students with flexibility and personalized learning experiences.

# ChatGTP's Response

Schools have responded to digital transformation in various ways, and their approaches have evolved over time. Here are some common ways in which schools have responded to the digital transformation:

1. Integration of technology in classrooms
2. Online learning and blended learning
3. Digital communication and collaboration
4. Data-driven decision making
5. Professional development for teachers
6. Infrastructure and resource allocation

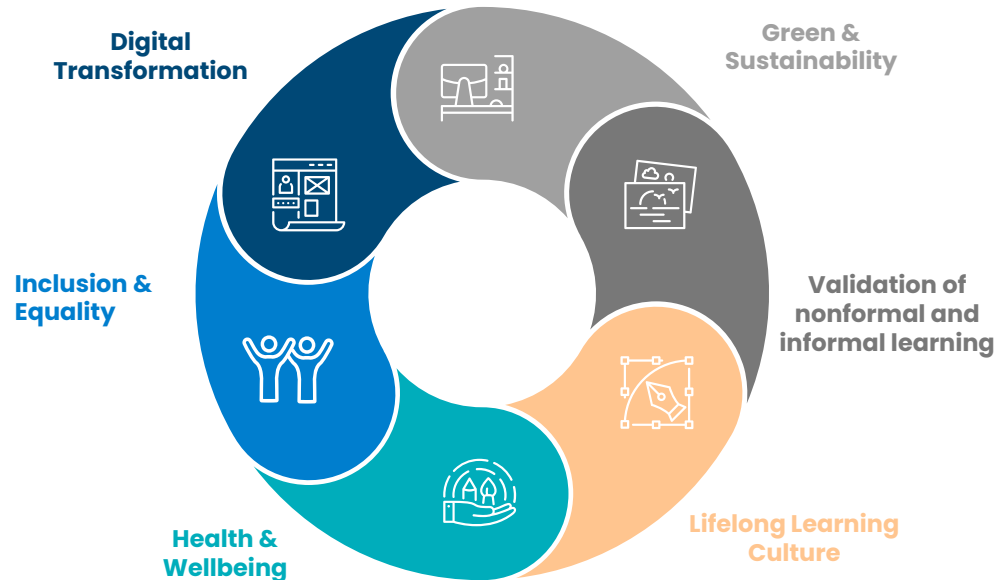
It's important to note that the specific response to digital transformation varies among schools and educational systems, influenced by factors such as available resources, infrastructure, community support, and individual school goals.

# Overview

- Research in Cyprus Context
- Lifelong learning Strategy
- Response of education
- Lessons from the last 20 years
- Ideas on technology and education
- Raise questions
- Systemic recommendations
- Learnability & Core Values

# Cyprus Lifelong Learning Strategy 2021-2027

## Strategic Pillars & Values



# Strategic Priorities





**90% of future jobs**  
will require digital skills.



**44% of Europeans**  
lack basic digital skills.



**Less than 20% of ICT**  
professionals are female.



**More than 48 000 schools**  
lack broadband connection.



**Digital wellbeing is threatened**  
by misinformation, cyber bullying,  
data privacy issues.



# DESI

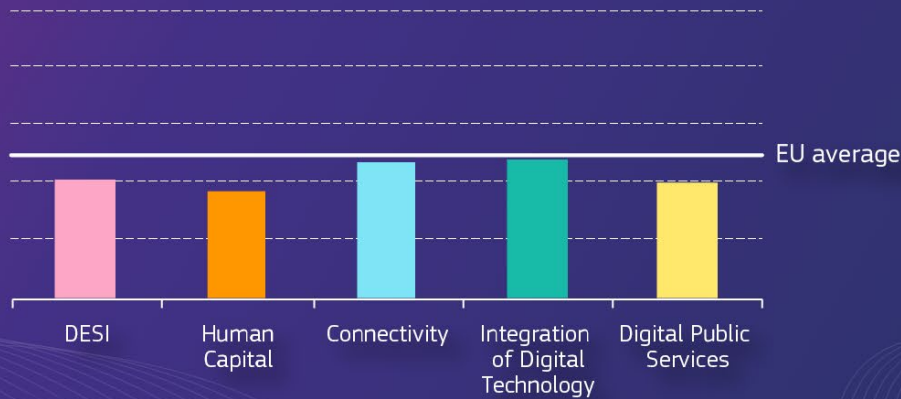
2022

Digital Economy and Society Index



## CYPRUS

DESI rank **20** - DESI score **48.4**



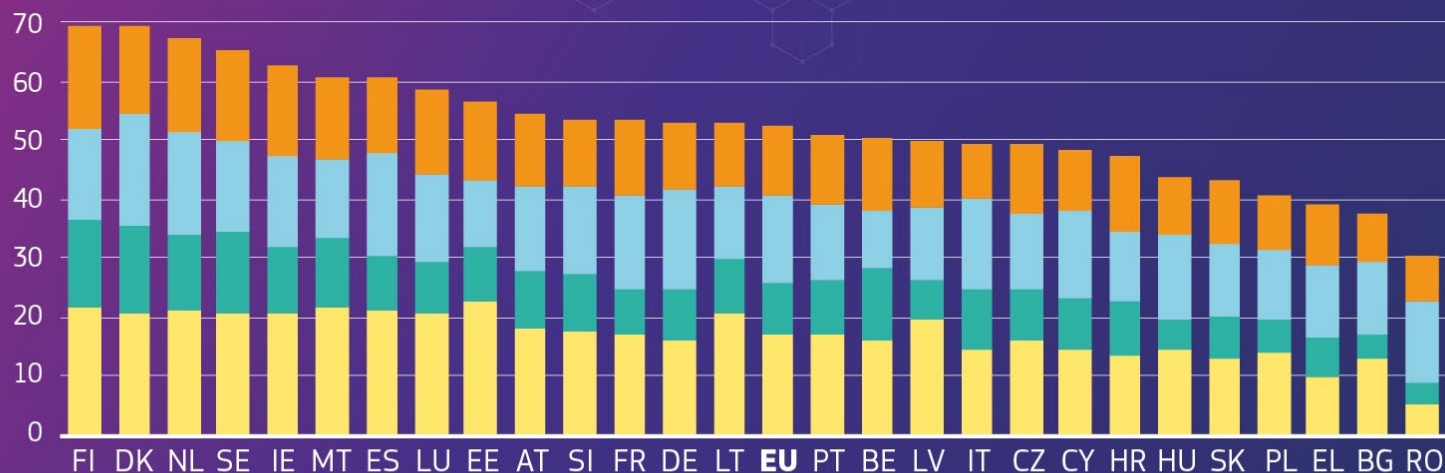
<https://digital-strategy.ec.europa.eu/en/policies/desi-cyprus> #DESIEU #DigitalEU





# DESI 2022

Digital Economy and Society Index




HUMAN CAPITAL



CONNECTIVITY



INTEGRATION OF DIGITAL TECHNOLOGY

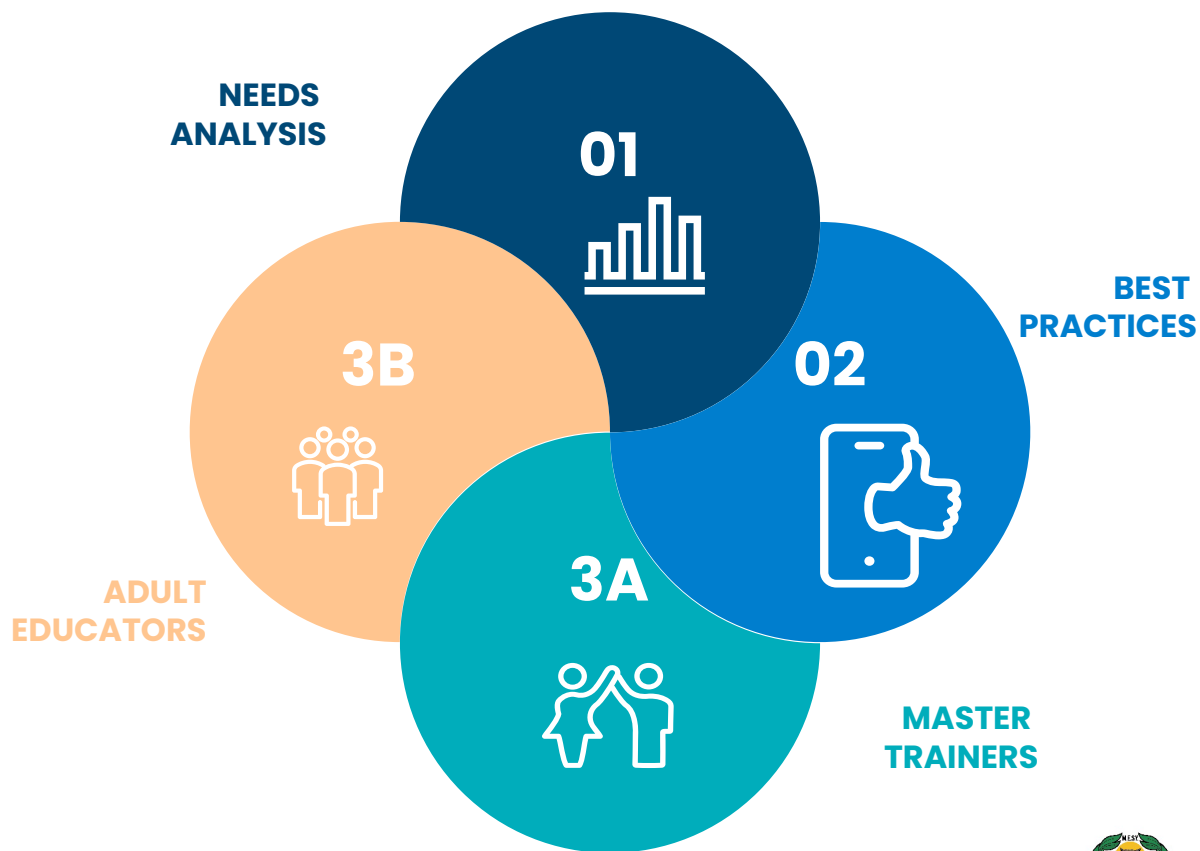


DIGITAL PUBLIC SERVICES

#DESIEU #DigitalEU

<https://digital-strategy.ec.europa.eu/en/policies/desi>

# ADULTDIGITALUP



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<https://adulddigitalup.eu/en/>



MINISTRY OF EDUCATION  
SPORT AND YOUTH

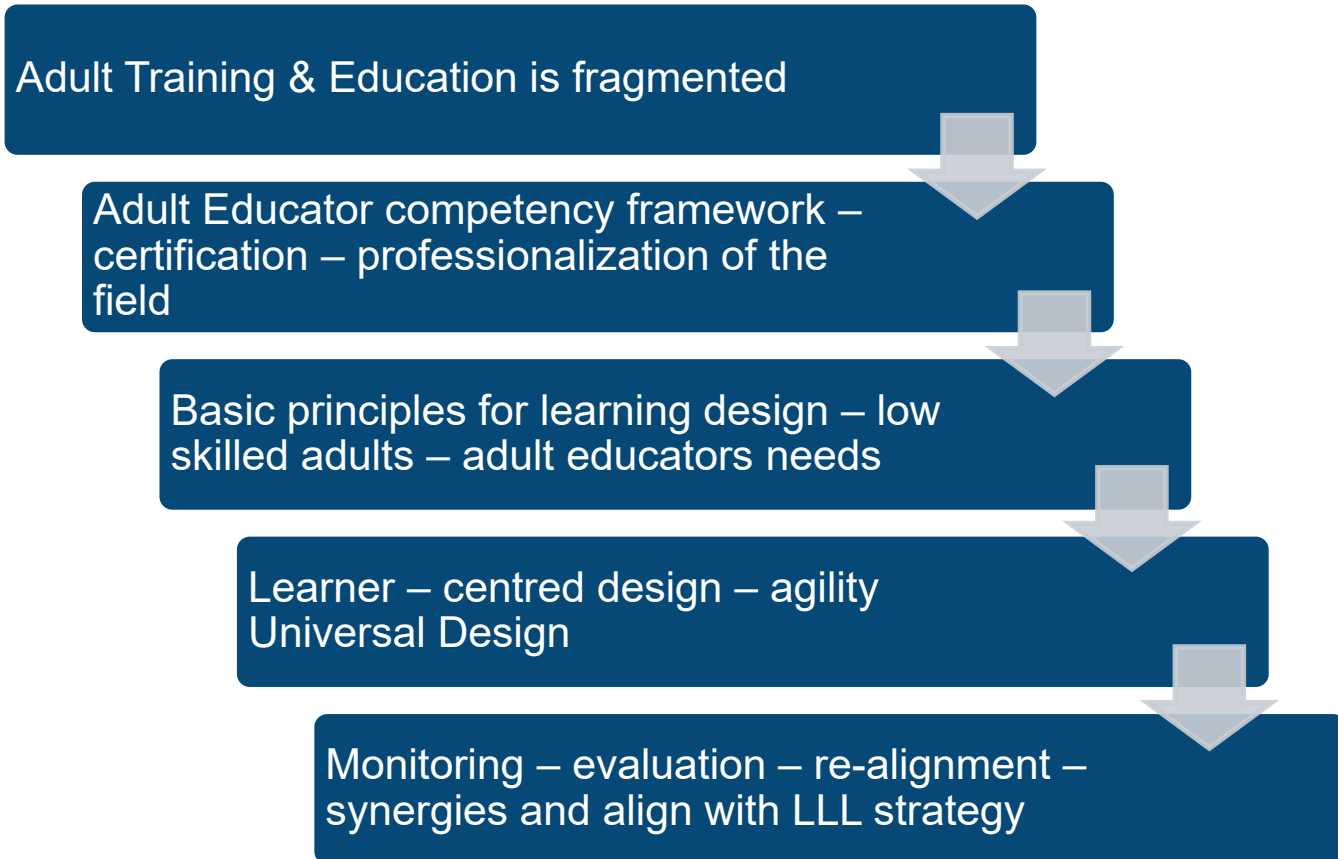


REPUBLIC OF CYPRUS

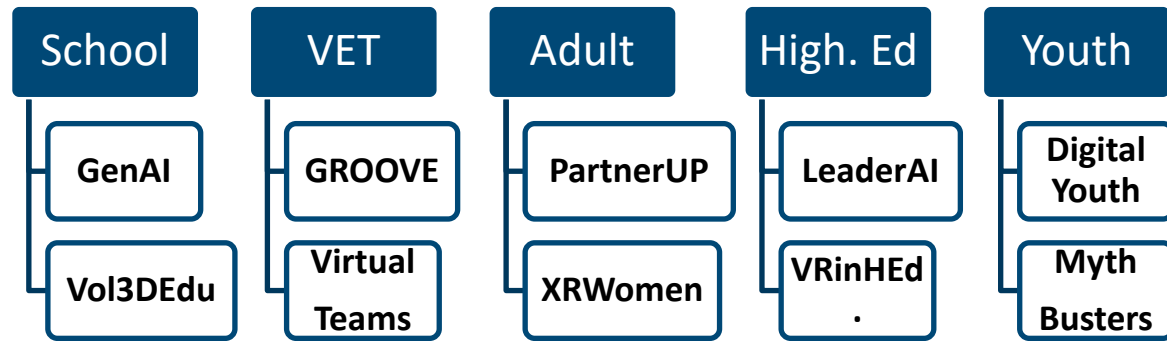


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# Research Findings



# Digital Initiatives – AI, XR, Metaverse

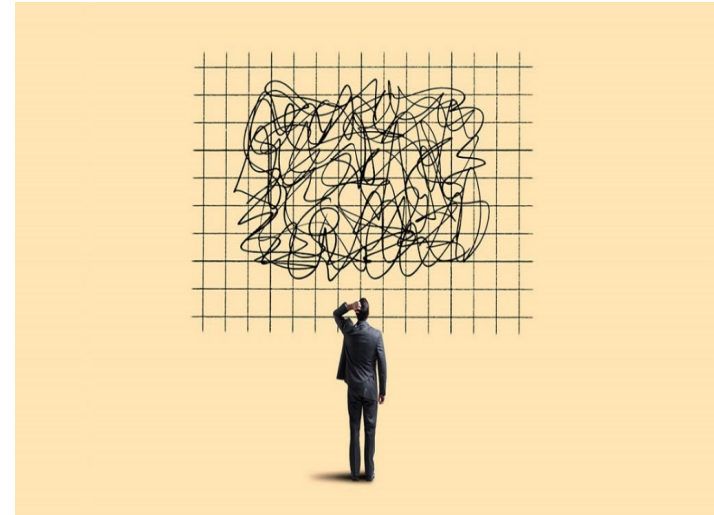


CoVES - ETF



# Schools' response - Uncertainty

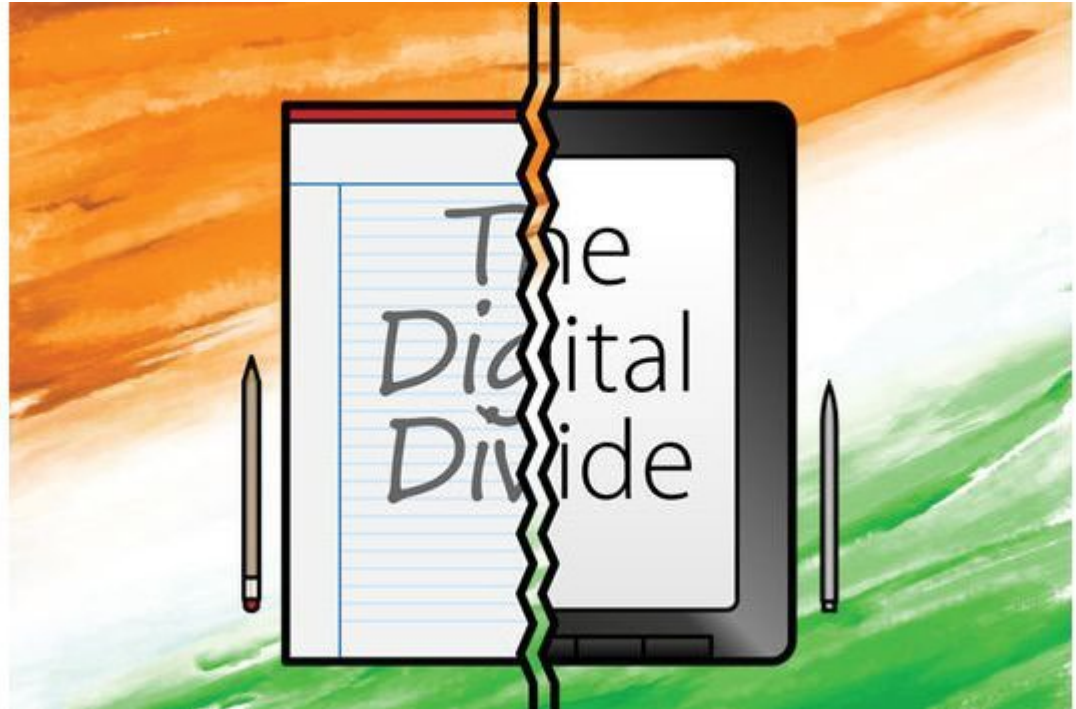
- Schools open
- Exams
- Curriculum
- Health protocol
- Beginning of school year
- Mental health
- Parental involvement
- Positive relations
- Data privacy



[https://www.pagaya.com/wp-content/uploads/2020/03/Feb19\\_22\\_1069395454.jpg](https://www.pagaya.com/wp-content/uploads/2020/03/Feb19_22_1069395454.jpg)

# Equality & Values

- Access
- ICT
- Skills
- Family
- Ethics



<https://julie808blog.wordpress.com/2016/10/03/participation-and-the-digital-divide/>

# Interaction in the metaverse

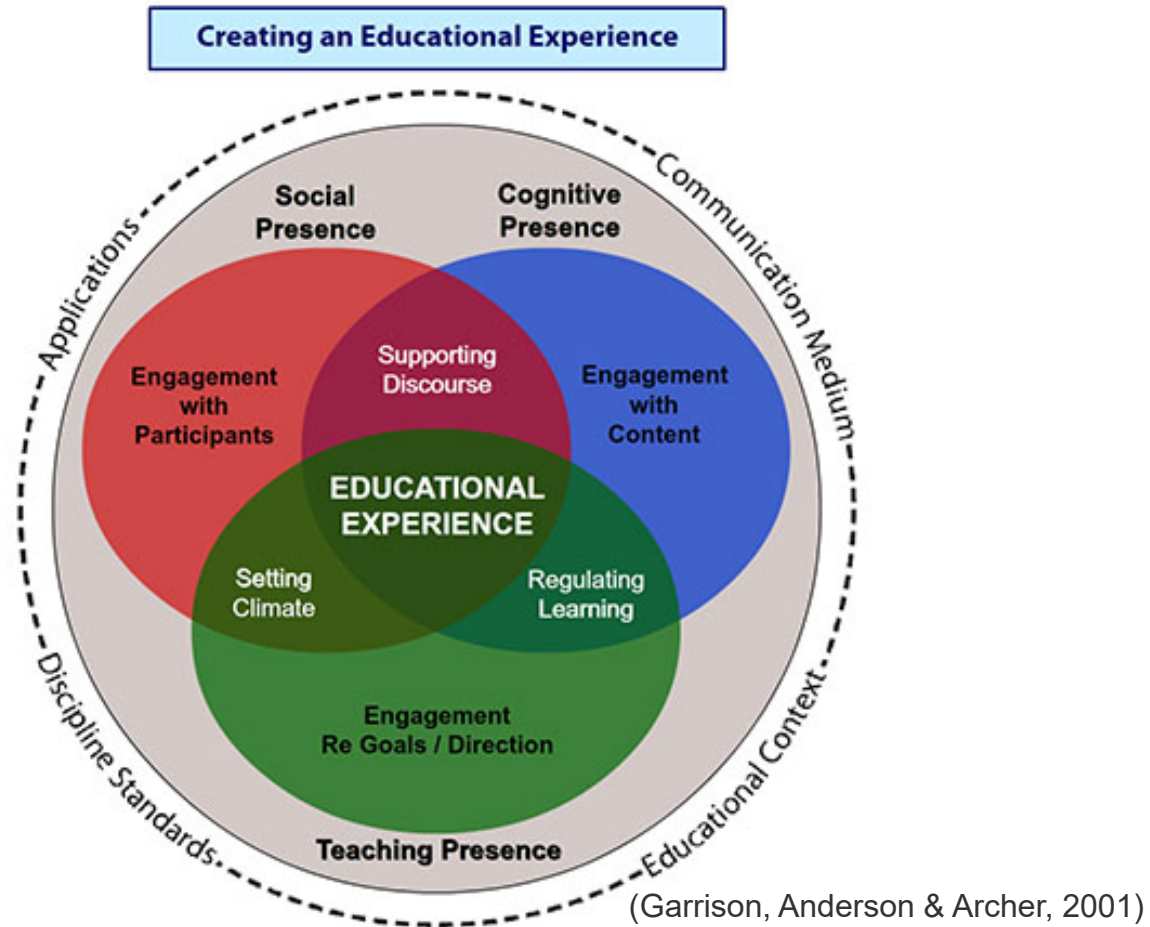
- Immediacy
- Speed
- Coherence
- Engagement
- Visual aspect
- Building relationships



<https://www.schooltime.gr/2020/03/13/ypourgeio-paideias-ksekina-i-ex-apostaseos-ekpaideusi/>



# Social presence in the metaverse

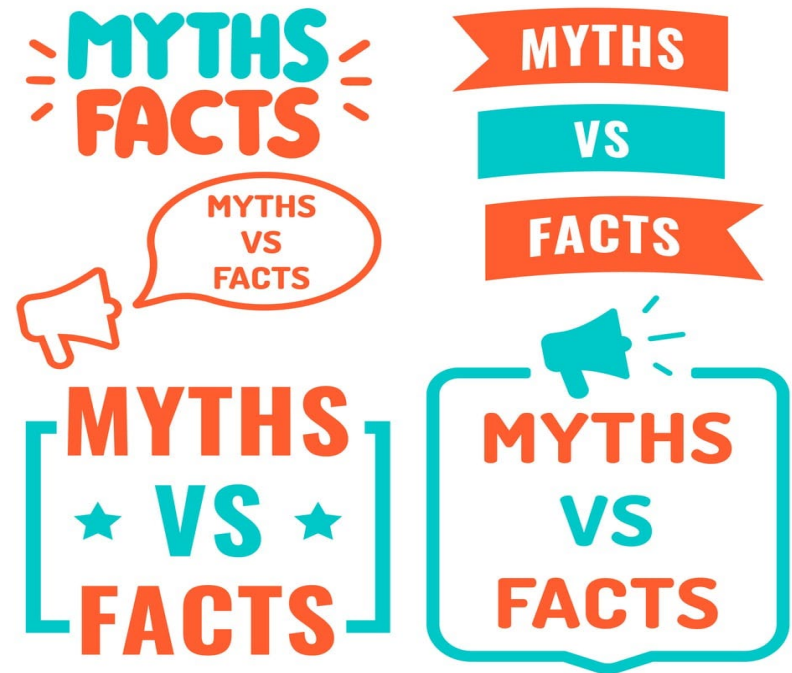


[https://courses.dcs.wisc.edu/design-teaching/PlanDesign\\_Fall2016/1-Getting-Started-Module/3-transitioning-online-unit/8\\_community-inquiry.html](https://courses.dcs.wisc.edu/design-teaching/PlanDesign_Fall2016/1-Getting-Started-Module/3-transitioning-online-unit/8_community-inquiry.html)



# Myths about AI, XR, Metaverse and online education

- Poor alternative to F2F
- Online & metaverse is Easy
- Will not replace F2F
- Supporting role
- Good for all
- Technology is the key



<https://www.impactteachers.com/myths-about-education-recruitment/>

# Cyprus public schools' response to Digital

- How was online education implemented?
  - What methods, frameworks, tools, content, practices?
- What challenges were faced?
- What good practices emerged?
- What can we learn to design the future?

# Demographics

## 2020

549 εκπαιδευτικοί

Φύλο

409

140

Βαθμίδα εκπαίδευσης

284 Δημοτική

251 Μέση Γενική & Τεχνική

14 Προδημοτική

Σχολεία

500 Δημόσιο σχολείο

49 Ιδιωτικό σχολείο

Ηλικία

< 25

5

164

31-40

236

41-50

118

51-60

11 25-30

15 ≥ 61

## 2021

411 εκπαιδευτικοί

313

97

1 Άλλο

Βαθμίδα εκπαίδευσης

207 Δημοτική

185 Μέση Γενική & Τεχνική

19 Προδημοτική

Σχολεία

367 Δημόσιο σχολείο

44 Ιδιωτικό σχολείο

Ηλικία

< 25

0

134

31-40

156

41-50

96

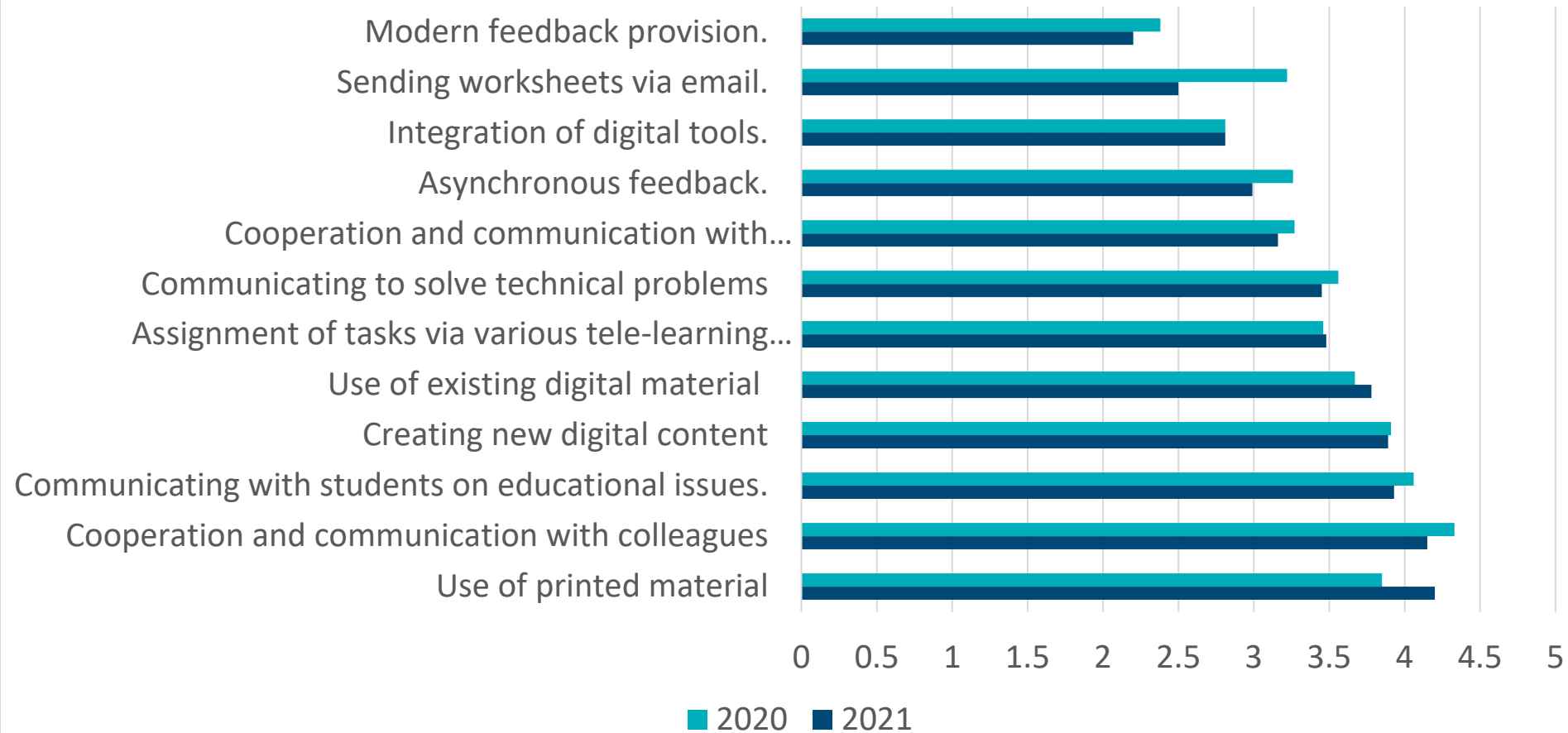
51-60

14 25-30

11 ≥ 61

# Practices

## Teaching practices mostly used

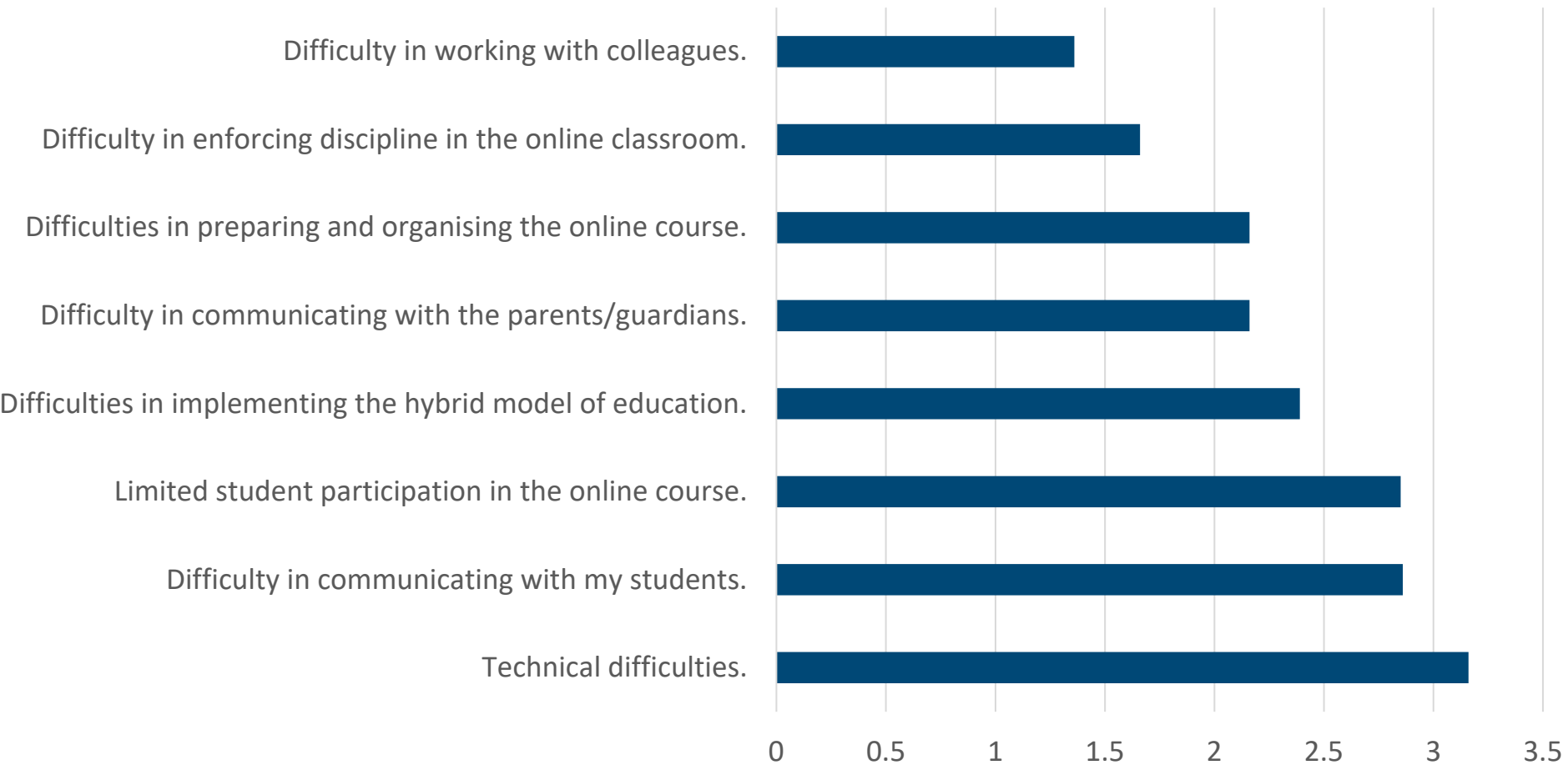


# Practices transferred in F2F classroom

Practices/methods used on your return to school and in face-to-face lessons.	Averages
Never=1, A few times a month=2, Once a week=3, Two-three times a week=4, Daily=5	
Creating activities for student collaboration online.	4.22
Providing individualised supportive teaching and assistance to students through technology (e.g. via MS Teams, chat etc.).	3.83
Create a space for asynchronous communication in the afternoon via chat/discussions.	3.75
Use of technology to communicate with parents/guardians (e.g. emails, MS Teams, etc.).	3.56
Use of the digital classroom in combination with the conventional classroom.	3.48
Delegate tasks via MS Teams or other tool.	3.47
Use of technology to communicate with colleagues (e.g. teleconferencing, etc.).	3.19

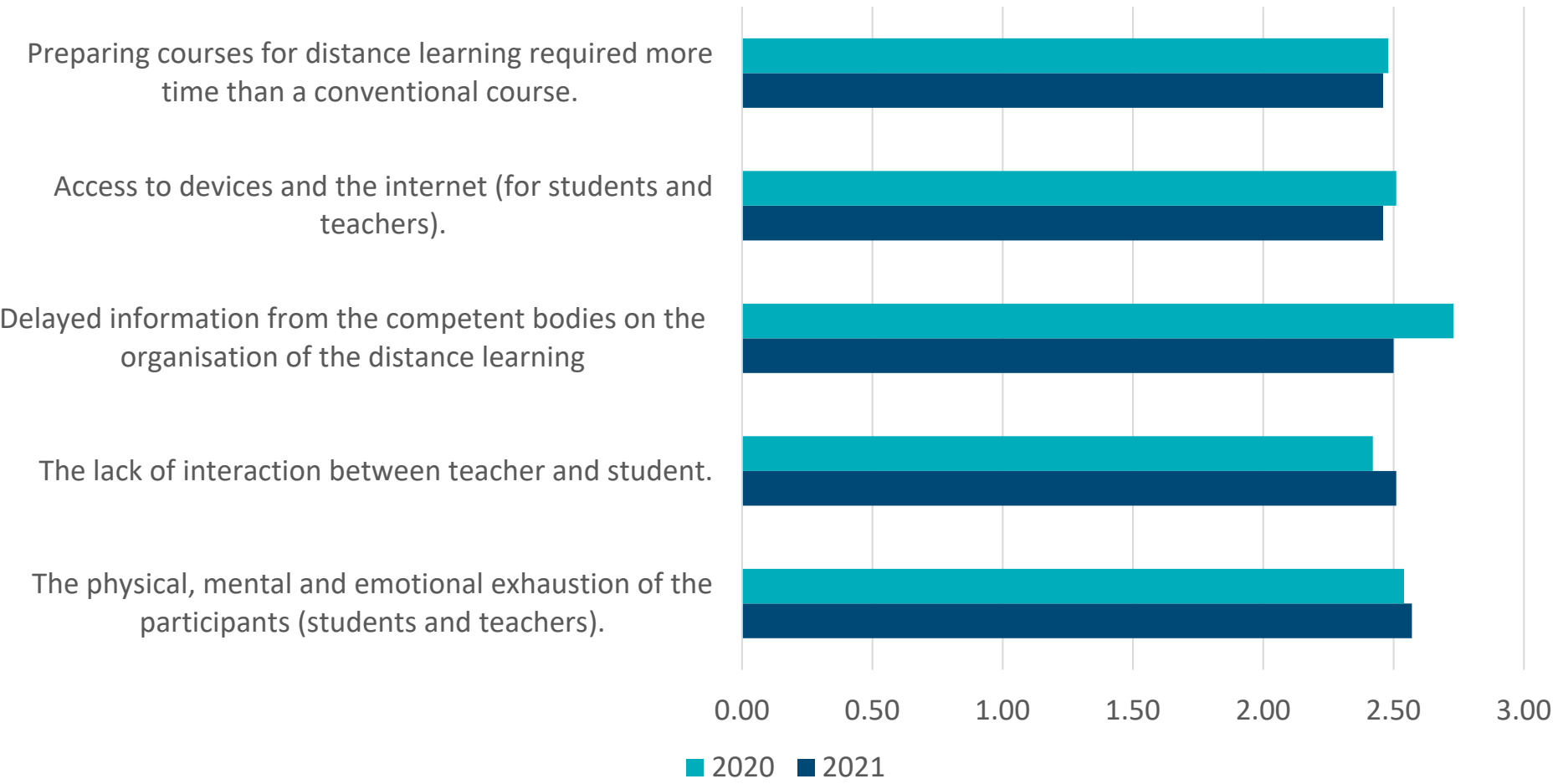
# Challenges

Challenges mostly faced



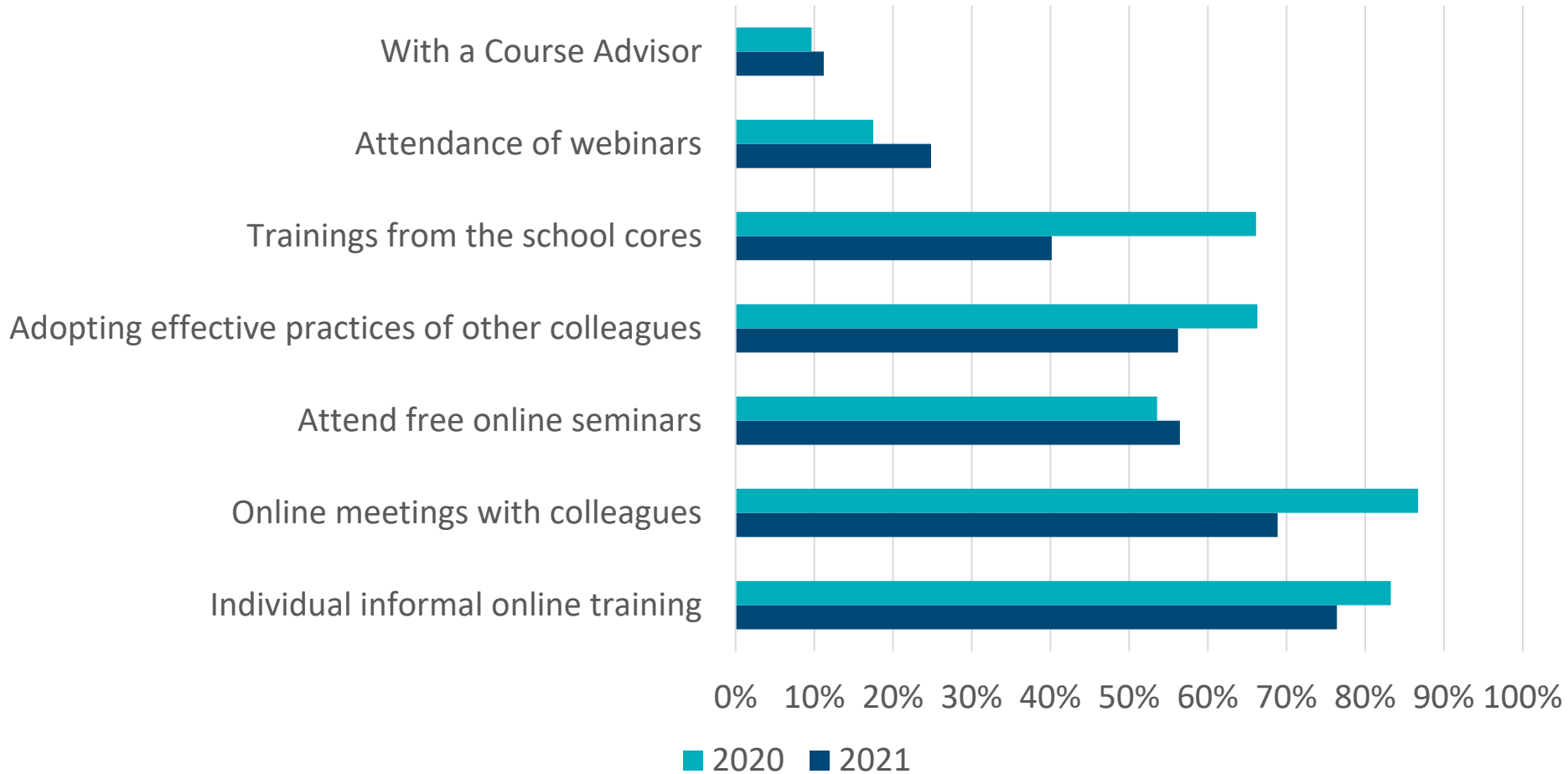
# Barriers to teaching

Most important barriers/challenges



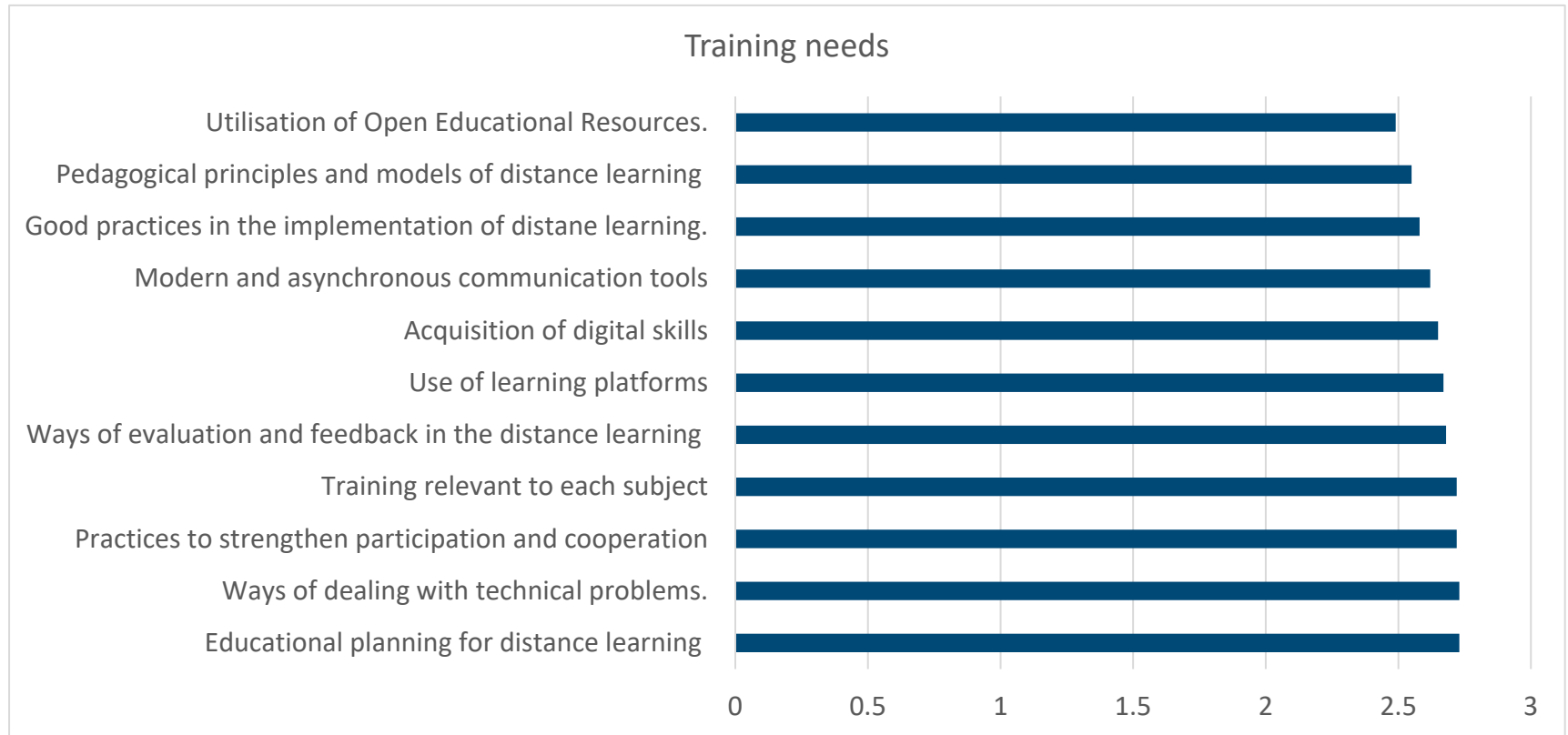
# Participation in Professional Learning

Training participated





# Need for professional learning



# Implementation reflection

	<b>Assessment of the situation/The implementation of eLearning according to teachers</b>	<b>A.</b>
Strongly disagree=1, Disagree=2, Neither disagree nor agree=3, Agree=4, Strongly agree=5		
1	I was more prepared during the current school year (2020-2021) to respond to the DL, compared to the previous school year (2019-2020).	4.25
2	Students' mental health was negatively affected.	3.84
3	Teachers' mental health was negatively affected.	3.65
4	My relationships with my school colleagues have been positively affected.	3.5
5	Relationships between teachers and parents were positively affected.	3.45
6	My relationships with the students were positively affected.	3.45
7	Students' learning outcomes were negatively affected.	3.40
8	The cooperation between students was negatively affected.	3.38
9	The quality of teaching has declined.	3.33
10	The physical infrastructure of the school is improved, compared to the previous school year	3.27

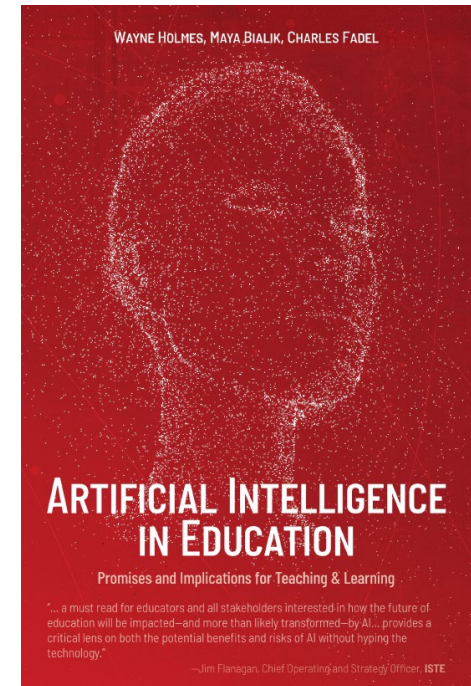
## Supporting School Leaders to Build a Digital Transformation Strategy



<https://digilead-project.eu/>

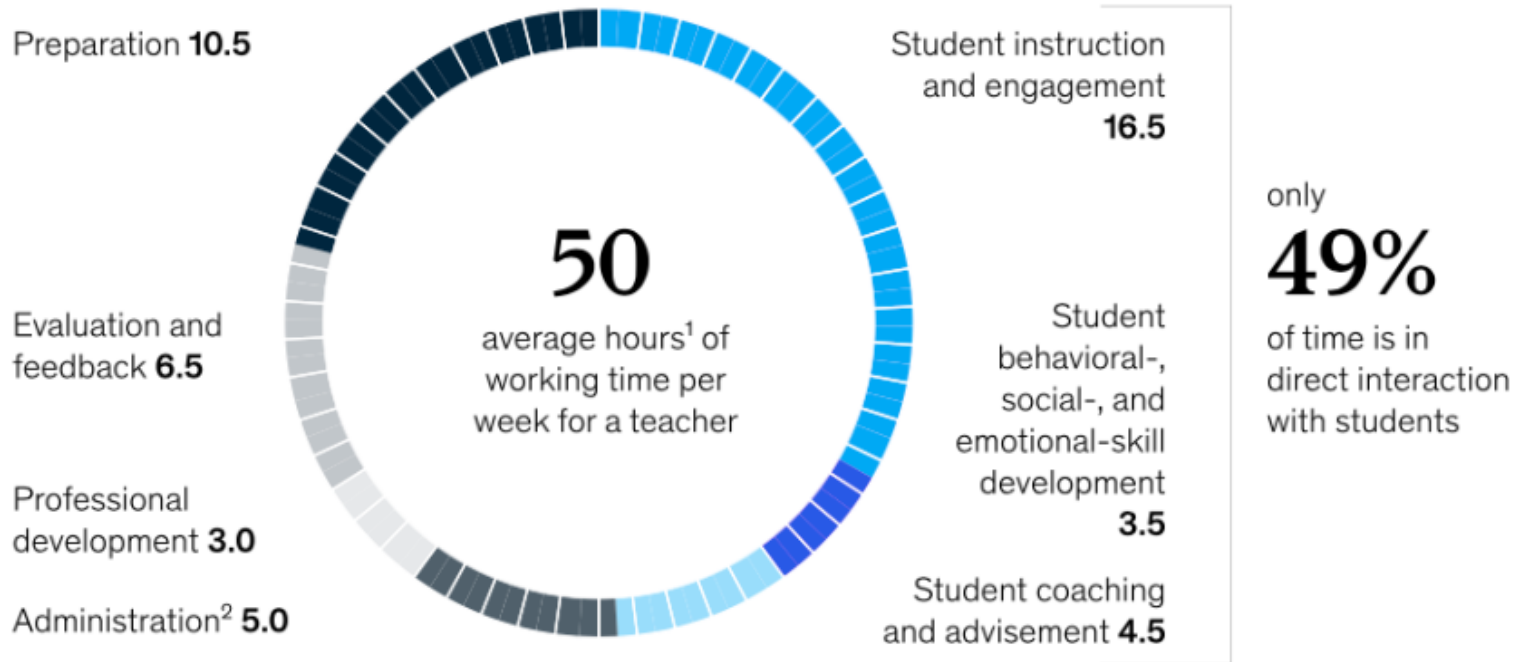
# Key questions to consider

- What to teach (content and skills)?
- Role of assessment
- Support teacher & learner
- Automation in grading
- Personalized learning path
- Address learner individual needs



# Teachers work about 50 hours a week, spending less than half of the time in direct interaction with students.

Activity composition of teacher working hours, number of hours



<sup>1</sup>Average for respondents in Canada, Singapore, United Kingdom, and United States.

<sup>2</sup>Includes a small "other" category.

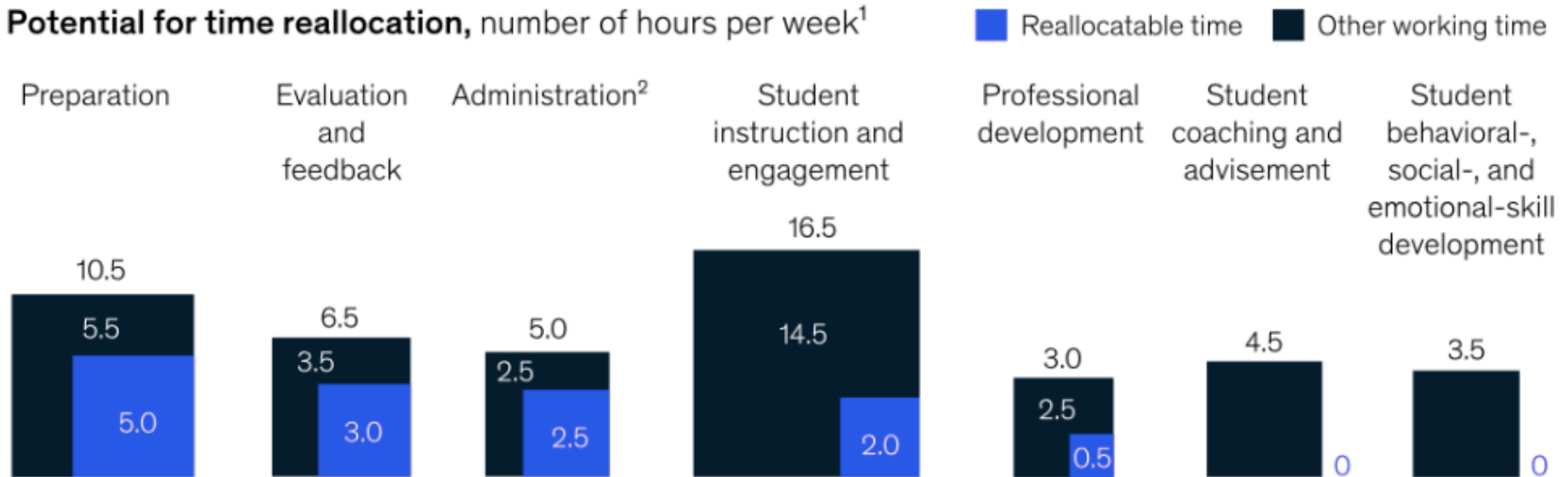
Source: McKinsey Global Teacher and Student Survey

McKinsey  
& Company

# Time allocation

Technology can help teachers reallocate 20 to 30 percent of their time toward activities that support student learning.

**Potential for time reallocation, number of hours per week<sup>1</sup>**



<sup>1</sup>Figures may not sum, because of rounding. Average for respondents in Canada, Singapore, United Kingdom, and United States.

<sup>2</sup>Includes a small "other" category.

Source: McKinsey Global Teacher and Student Survey

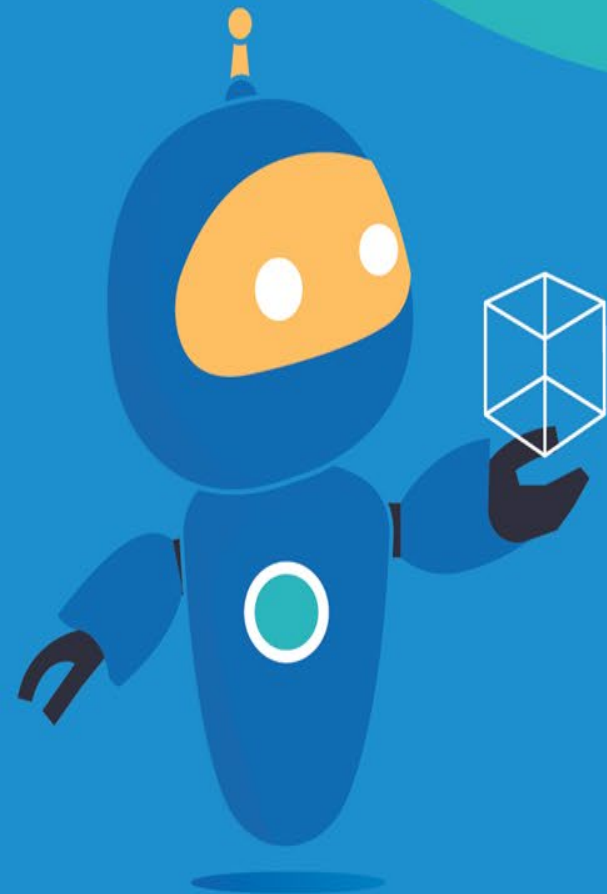
McKinsey  
& Company

Technology can help teachers reallocate 20-30% of their time toward activities that support student learning. Source: McKinsey 2020.

# Generation AI



# Generation AI





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Overview



Objectives



Outputs



Methodology

LEADER AI will develop a Toolkit with practical guidelines, scenario-based training, and an Interactive eLearning platform with digital resources on how HEIs can use AI-based and data-driven tools and approaches for personalised instruction.

Pilot implementation of these activities will take place, while a Committee will be established to support the success of the project. Promotional activities, events and a final european conference will further disseminate the project's results.



The European Commission's support for the production of this website does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein. Project Number : 2022-1-CY01-KA220-HED-000086763





<https://www.vr-in-he.eu/>

**VRinHE**

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# VRinHE

VIRTUAL REALITY IN  
HIGHER EDUCATION

# A Camera for the Metaverse



3D capture of humans from  
one single view-point,  
powered by Volograms AI

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Shaping the way

---

we communicate:

---

volumetric capture with

---

your smartphone 

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# VOLUMETRIC 3D TEACHERS & THE METAVERSE



# Challenges of digital transformation

Self regulation

Ethics

Motivation

Technology  
skills

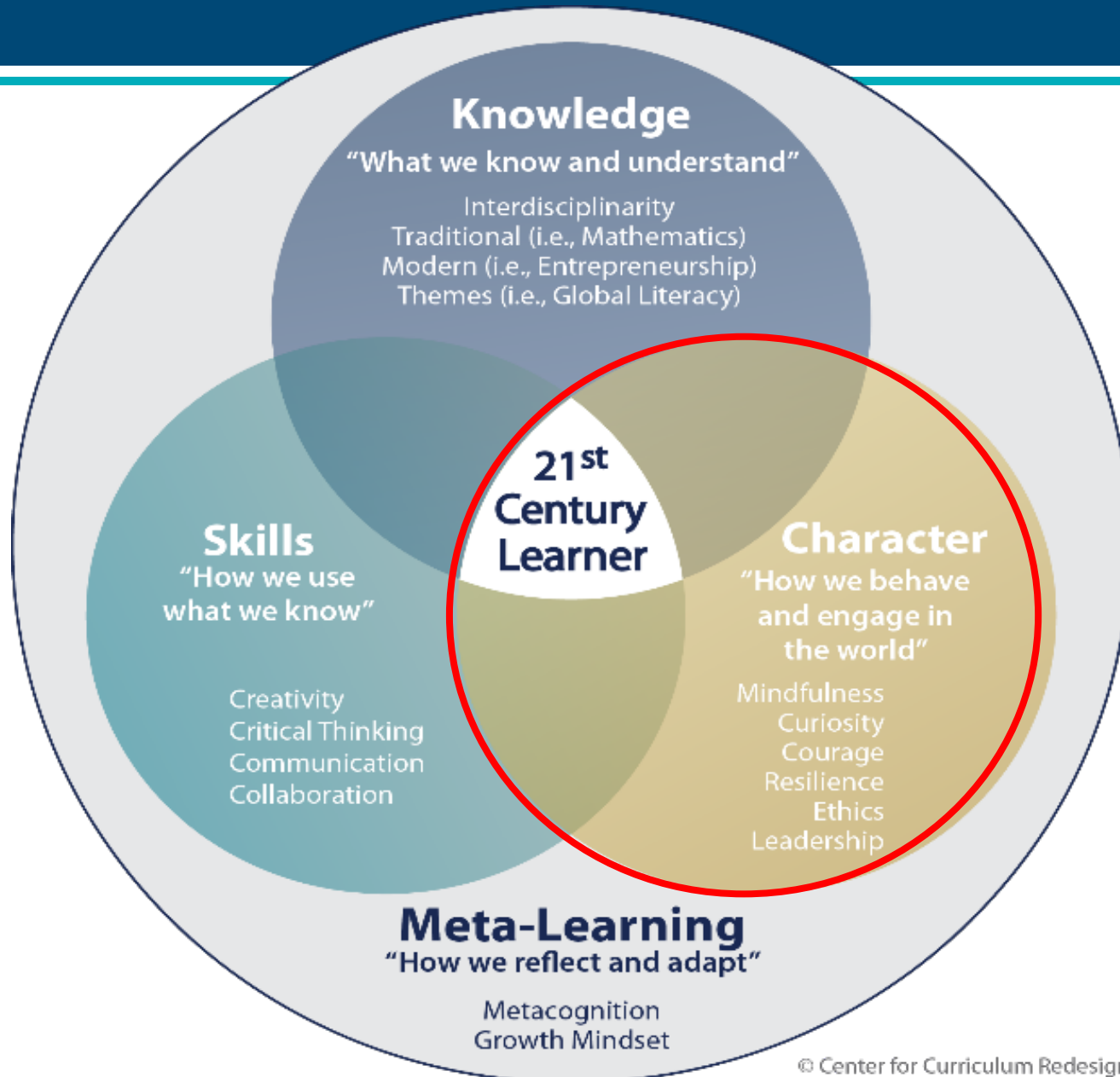
Learning to  
learn

Access to  
technology

Relationships  
Social presence

Well-being

resilience



# Character Education

Characteristics	
Mindfulness	Self-awareness, compassion, sharing, sensibility, gratitude, empathy
Curiosity	innovation, exploration, motivation, initiative, wonder
Courage	determination, confidence, risk taking
Resilience	perseverance, grit, diligence, self-control, dealing with ambiguity
Ethics	integrity, justice, equity, loyalty, love, generosity
Leadership	responsibility, modesty, negotiation, leading by example



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Welcome to the School-wide Positive Behavioral Supports website!

## Positive Behaviour Support

Positive Behavior Support (PBS) is an evidence-based approach, which aims to enhance the Quality of Life and minimize individuals' problematic behavior (Carr, et al. 2002). To achieve that, PBS focuses on the development of individuals' positive behaviors (behaviors that are associated with academic, health, social, recreational, community and family achievement).

[read more >](#)

## The SWPBS Project

The “Building School-Wide Inclusive, Positive and Equitable Learning Environments Through A Systems-Change Approach” (SWPBS) is an ERASMUS+ Key Action 3 Policy Experimentation program, which aims to establish an inclusive non-discriminatory social culture and necessary socio-emotional and behavioral supports for all children in a school across four EU countries (Cyprus, Finland, Greece, Romania).

[read more >](#)

The project has been funded with support from the European Commission. This publication reflects the views only of the author and the Commission cannot be held responsible for any use which may be made of the information contained therein. [Project Number: 606687-EPP-1-2018-2-CY-EPPKA3-PI-POLICY] [Privacy Policy](#)



<https://www.pbiseurope.org/en/>



## Promoting Teachers Well-being through Positive Behaviour Support in Early Childhood Education

[Learn More](#)





# Importance of Leadership

- Clarity in vision, objectives, and support
- Develop positive cultures to support all staff
- Maintaining **positive relationships** among staff
- Professional development – Connect schools
- Communication - School – parents' collaboration
- Scenario planning and crisis management
- Remote working – remote teaching
- Understand the role of technology in accelerating change
- Social presence - mental health & wellbeing
  - (Harris & Jones 2020; Leithwood et al., 2020; Vrasidas et. al, 2020)

# Recommendations for Practice

Systemic Approach	Professional Development	Implementation
<ul style="list-style-type: none"><li>• Coordinating team</li><li>• Strategic Planning</li><li>• Planning for Periods of Emergency</li><li>• Access to ICT</li><li>• Ongoing research and evaluation</li></ul>	<ul style="list-style-type: none"><li>• Compulsory PD</li><li>• Learning Design</li><li>• Digital skills</li><li>• Assessment</li><li>• Targeted PD – subject</li><li>• Parents training</li><li>• Learner preparation</li><li>• Health – well-being</li></ul>	<ul style="list-style-type: none"><li>• Curriculum</li><li>• Scheduling</li><li>• Teacher collaboration</li><li>• Teacher-parent</li><li>• Educational resources</li><li>• Digital Tools</li><li>• Special education</li><li>• Social aspect</li></ul>

# Related Projects & Initiatives

2BDIGITAL	DigiLead	HOPEs	ProW
ADULTDIGITALUP	DigiRur	INCLUDE	REMAC
AELIA	DigiSmarts	INCLUSIVE HUBS	Resilient Preschools
Aristarchus	Digital Onboarding	LEADER AI	Resilience for Parents
ARTY	DIGITAL TRAINERS	LEADING 2030	RETAIN ME
AWARE	Digital4All	LEARN	ROBOAQUARIA
BAS	DIGITEACH	Learning Circle	STEAM4ALL
BE WELL	DIVERSITE	(INNOVADE)	SUCCESS
BENEFIT	eDialogue	MEDIAWISE	TACKLE
BLUE TOURISM	Educhampions	Mental Well-being at	Thrive@work
BONDING	EMERGE	School	VOL3DEDU
BOYS LINGO	EMPOWER 2	MILEAGE	VRinHE
CIRCULO	ENACTED	OTTER	Youlead
Coding4Kids	ENTICING	PARTNER UP	JUST4ALL
COPE	GIFTLED	PBS-ECE	C-Trends
COSERE	GLOBAL EDUCATION	PLANNING SEEDS	Democratic dialogue
CRESTART	GROOVE	PLAY4LITERACY	at school
CTApp	HaHa (Happy Habits)	Positive Academy	DEEDSs
			DIGGING



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