



43rd AIM Conference 2021
Novi Sad 17 September 2021

**«Facing Uncertainty in
Higher Education in IE&M
due to Pandemic Crisis:**

**Towards a New
Education Paradigm »**

European Strategy for Knowledge Transfer and Transformation of European Higher Education



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European Strategy for Knowledge Transfer and Transformation of Higher European Institutions

**«Facing Uncertainty in
Higher Education in IE&M
due to Pandemic Crisis:**

**Towards a New
Education Paradigm »**

Outline

- The context: Education, Skills & Workforce
- The European Knowledge Strategy



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Technological Assets & Human Capital

- Technological investments in Industry 4.0 sector grows while knowledge workforce declines in EU (McKinsey & C., June 2020):
 - 94 million workers need retraining
 - 21 million workers need to change occupation
- Workforce Aging (less 13.5 million labor force in the next decade)



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Employed people (million) aged 15-64 in the EU
(Eurostat 2021)

Aging of Human Capital

Employed people	2005	2020	Abs Variation	(%) variation
Aged 15-64	180.2	191.5	+ 11.3	+ 6.3
Aged 15-24	18.0	14.5	- 3.5	- 19.5
Aged 25-54	142.5	141.3	-1.2	- 0.8
Aged 55-64	19.7	35.7	+ 16	+ 81.2

Eurostat - https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Employment_-_annual_statistics#employment_down_compared_to_2019



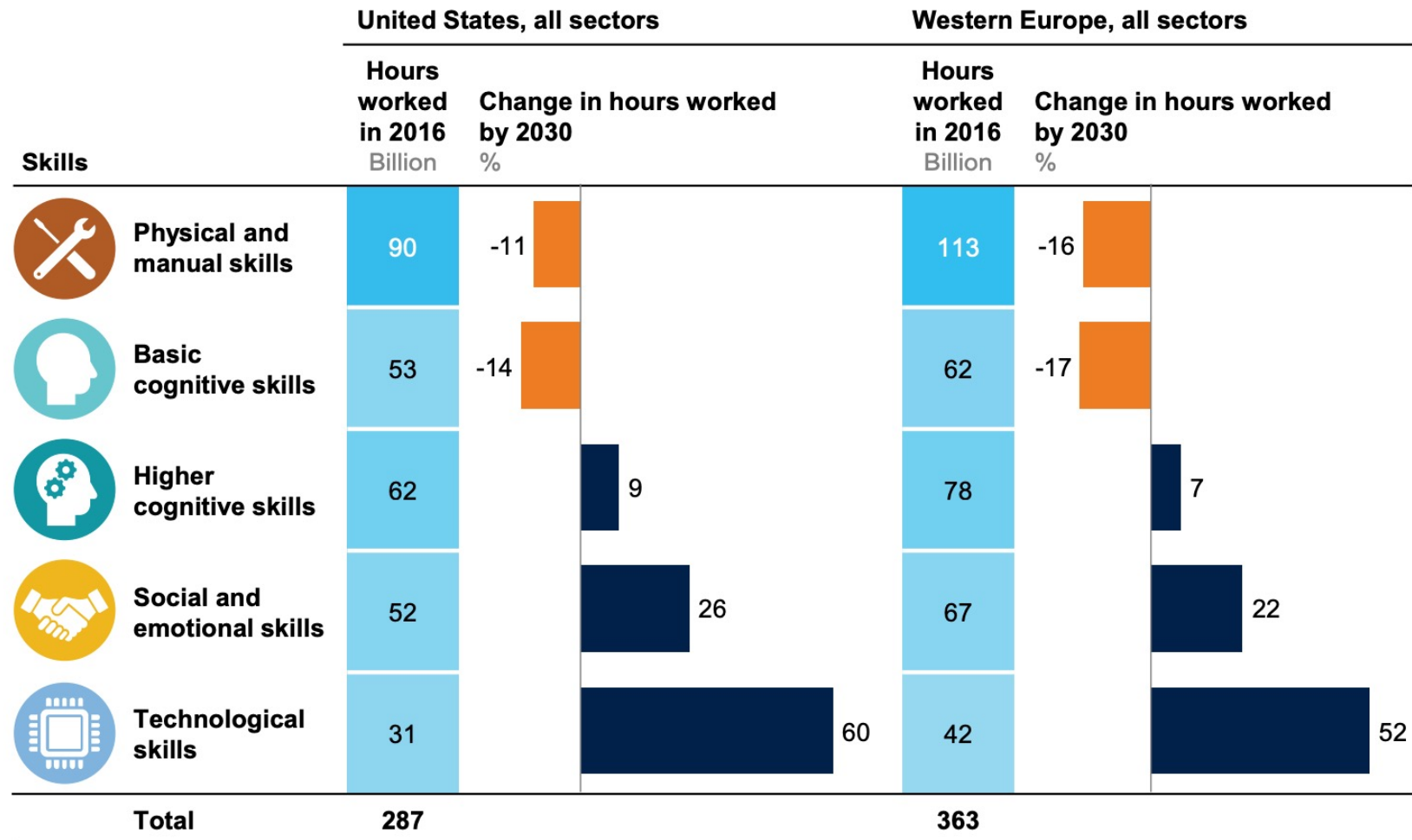
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Skill shifts from 2016 to 2030 in USA and Europe

Automation and AI will accelerate the shift in skills that the workforce needs.

Based on McKinsey Global Institute workforce skills model

0 100



Context: Work Skills

Based on McKinsey Global Institute workforce skills model

United States and Western Europe
% of time spent on cognitive skills

Erasmus plus project (Knowledge Alliances)
<http://ie3.eu>



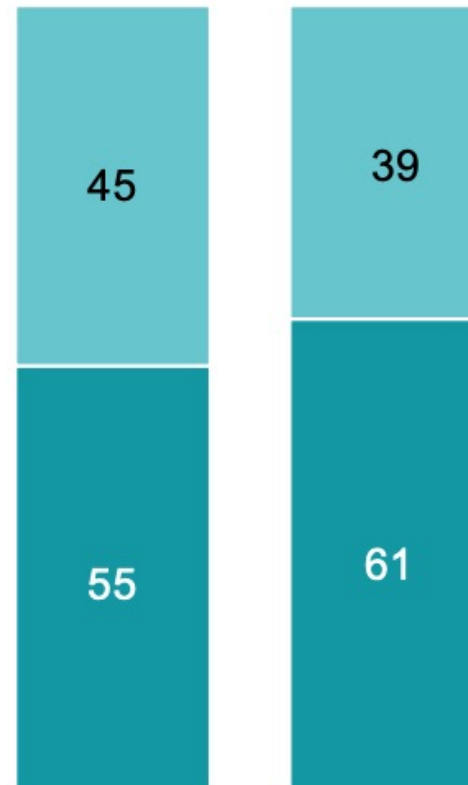
Basic cognitive skills

- Basic literacy, numeracy, and communication
- Basic data input and processing



Higher cognitive skills

- Advanced literacy and writing
- Quantitative and statistical skills
- Critical thinking and decision making
- Project management
- Complex information processing and interpretation
- Creativity



Example activities

- Take customer orders
- Provide basic information to customers
- Maintain operational and sales records
- Prepare sales or other contracts
- Explain technical information to customers
- Maintain and manage product inventories

The phenomenon of Gig Workers is taking place !

The Challenge:

Educating a critical mass of Knowledge Workers

- Existing academic IE&M programs, on the average, do not completely meet industry needs for the re-industrialization of Europe (I4.0).
- European HEIs show, on the average, inertia in updating business-driven Industrial Engineering & Mgmt programs.
- Economic and Structural Constraints

**Companies are facing a fierce
competition for Human Capital !**

Challenge vs. Limits & Constraints of European HEIs



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<https://europe-aim.eu/research-projects/>



Details in:
G. Mummolo, ***A European Survey on Higher Education in Industrial Engineering and Management: Preliminary Results***. 42nd 2020 AIM Conference, Berlin, 3-6 September 2020

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Research Projects

Erasmus Plus Project 'IE3 – Industrial Engineering and Management of European Higher Education'

IE3 is a three years Education Project (Action: Knowledge Alliance 2) started on last November 1st, 2019. Please find attached the presentation of the project at the kick-off meeting of Bruxelles (feb 4, 2020).

Project 'IE3 presentation in PDF

The web site of the IE3 project

The IE3 Facebook link

The IE3 linkedin link



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The European Commission European Knowledge Strategy

1. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - **A new ERA for Research and Innovation (30.9.2020)**
2. COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS - **On achieving the European Education Area by 2025 (30.09.2020)**
3. Commission Communication “**European Skills Agenda for sustainable competitiveness, social fairness and resilience**” (30.6.2020)
4. Council Resolution on a strategic framework for European cooperation in **education and training towards the European Education Area and beyond (2021-2030)** – (26.2.2021)



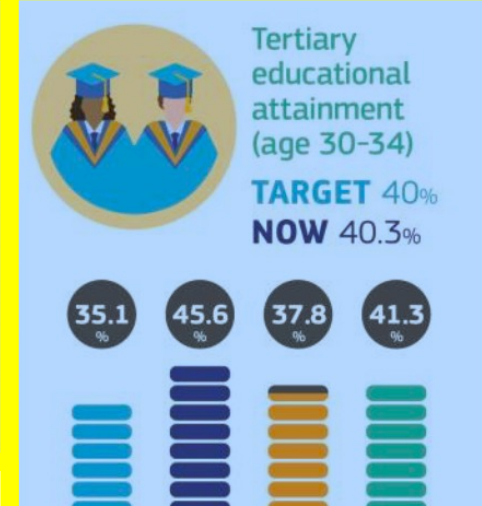
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Achievements by 2025 of The European Knowledge Strategy

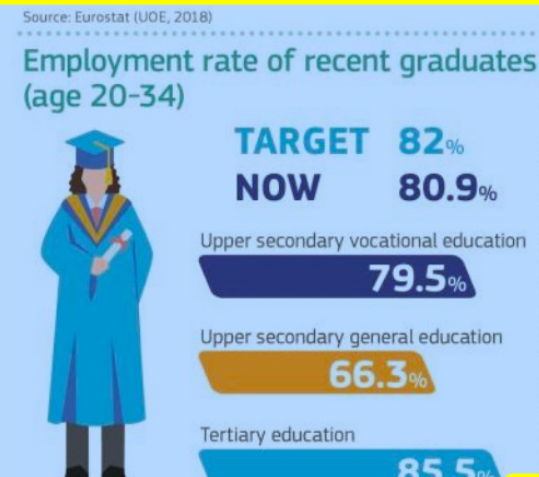
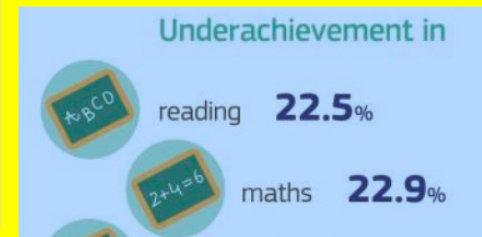
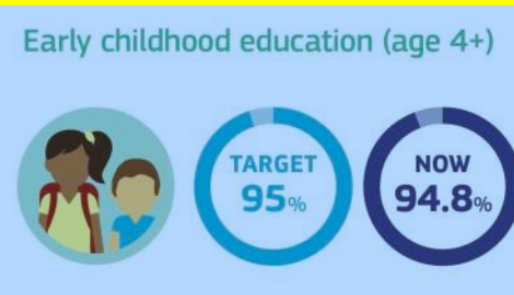
EC Communication
(30 Sept. 2020)



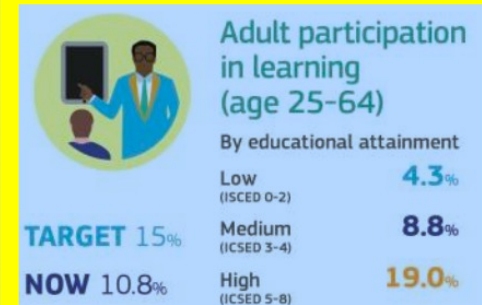
EARLY LEAVERS < 10 %



TERZIARY EDU > 45 %



Underachievements
(R,M,S) < 15%



EMPLOYMENT RATE > 82%

Adult in Learning > 15 %



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New Role of HEIs

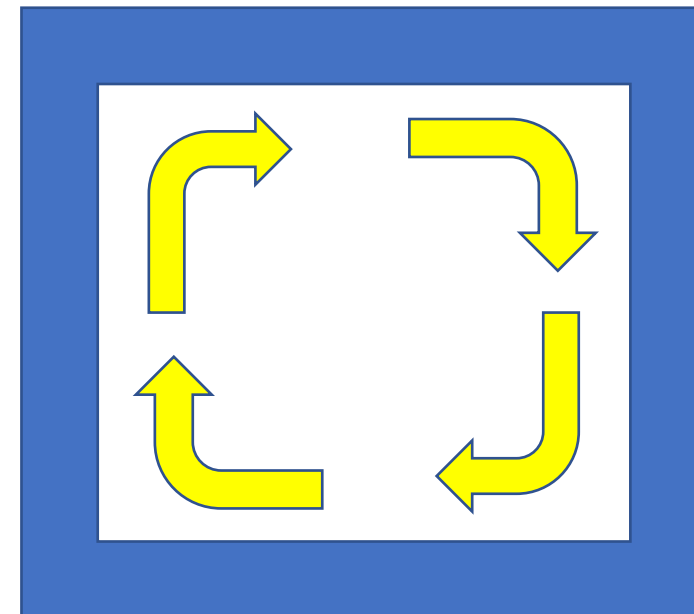


A Higher Education Transformation Agenda to Transform HEIs according to the Knowledge Square

European Knowledge Strategy

*EC Communication
(30 Sept. 2020)*

Service to Society



Research

Innovation



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European Knowledge Strategy

*EC Communication
(30 Sept. 2020)*



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New Role of HEIs



Changing the Role of University in Europe in the next decade requires:

- Reforming the mission of HEIs
- HEIs Paradigm Change to serve Society: from Global Ranking to National Relevancy¹

¹ The New Flagship University
Changing the Paradigm from Global Ranking to National Relevancy
Editors: **Douglass**, John Aubrey (Ed.) – Berkeley University – California, 2016

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European Knowledge Strategy

Priorities of the strategic framework (2021-2030)

Annex III

Council Resolution (26 Feb. 2021)



The European Knowledge Strategy



4. Council Resolution on a strategic framework for European cooperation in **education and training towards the European Education Area and beyond (2021-2030)** – (26.2.2021)

Strategic priority 1: Improving quality, equity, inclusion and success for all in education and training

Strategic priority 2: Making lifelong learning and mobility a reality for all.

Strategic priority 3: Enhancing competences and motivation in the education profession

Strategic priority 4: Reinforcing European Higher Education

Strategic priority 5: Supporting the **green and digital transitions** in / through education and training



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European Knowledge Strategy

Strategic Priority 4

(Annex III)

Council Resolution (26 Feb. 2021)



Strategic priority 4: Reinforcing **European Higher Education** over the next decade by:

- *creating transnational alliances*
- *pooling their knowledge and resources*
- *generating more opportunities for student and staff mobility and participation*
- *boosting research and innovation*

through the **European Universities** initiative



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<https://eua.eu/news/538:european-commission-launches-a-new-skills-agenda.html>



Towards a green and digital transition

The Agenda identifies 12 actions in the next 5 years for up/re-skilling and enabling the transition of the existing systems to a green and digital economy.

Emphasis on:

- Vocational Education and Training
- Higher Education: «Rolling out the **European Universities Initiative** and upskilling scientists» (Action n. 5)

The New European Skill Agenda: towards a green and digital economy

*EC Communication
(30 Sept. 2020)*



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The New European Skill Agenda (Action 5)

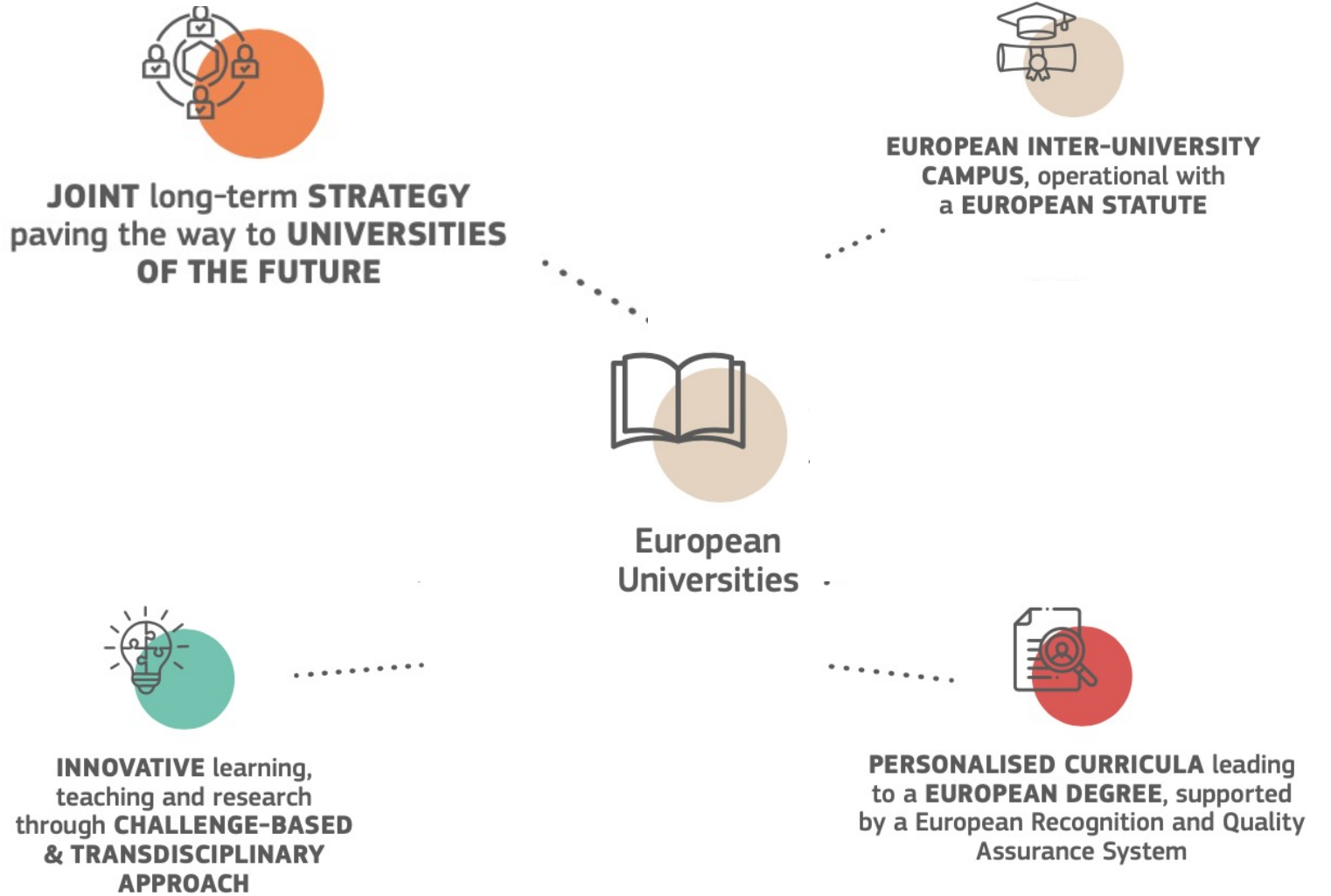
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The Role of European Universities Initiative



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European Knowledge Strategy

The 2021-2027 MFP
and
the Next Generation EU



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Action 5 of the European Skill Agenda

The European Universities Initiative:

- *Erasmus Plus (2021-27): Education Dimension*
- *Horizon Europe (2021-27): Research Dimension*

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European Knowledge Strategy

*EC Communication
(30 Sept. 2020)*



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The European Universities Initiative



Synergies

European Universities and Business Sector will be supported by extra-ordinary efforts while preserving the autonomy and peculiarities of different stakeholders.

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Pillars of European Knowledge Strategy

Summary



- Wide gap of Knowledge workers
- Pandemic as an opportunity
- Changing the Role of University in Europe (European Knowledge Strategy)
- Transnational Cooperation by the “European Universities” initiative:
 - Erasmus Plus (2021-27): Education
 - Horizon Europe (2021-27): Research
- Synergies between HEIs and Business Sectors



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From Manadarin:

危机 = “danger” and “opportunity”

From ancient Greek:

κρίση = ‘decision’

κρινίνη = ‘decide’

Oxford Dictionary:

“...a time of great danger, difficulty or doubt when problems must be solved or important decisions must be made.»

