# UNLOCKING THE POWER OF AI IN EDUCATION

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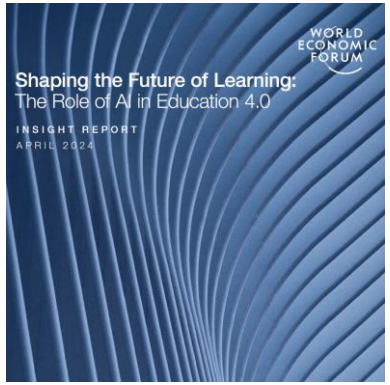
EMEA SR. BUSINESS MANAGER, EDUCATION & SUSTAINABILITY

6 Giugno 2024

# DI COSA PARLIAMO OGGI

## THE ROLE OF AI IN EDUCATION 4.0




WORLD ECONOMIC FORUM

REPORT 2024

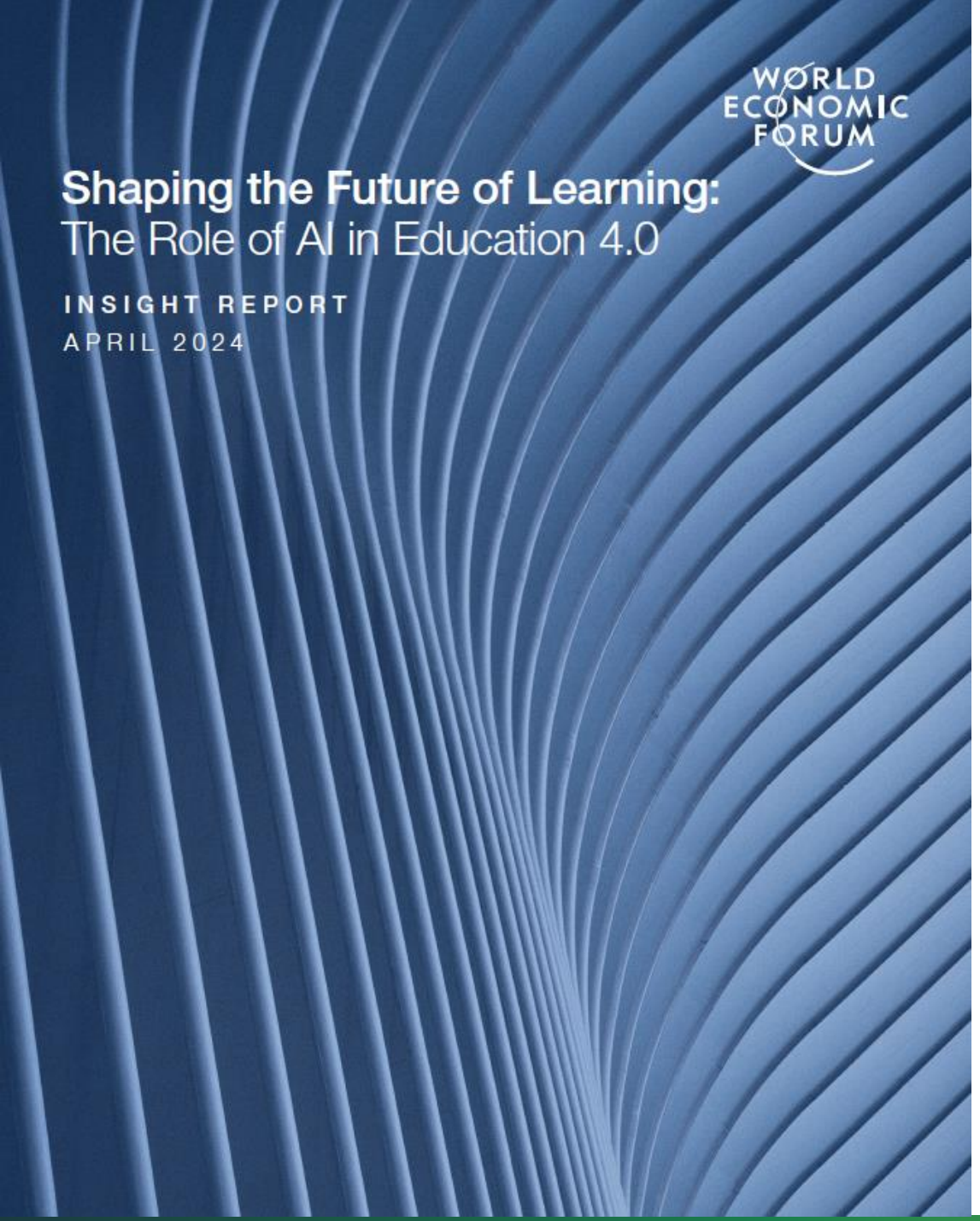
## AI FOR EDUCATION

BIG TECH SOLUTION

## EU REGULATIONS

AI ACT

GREEN DEAL



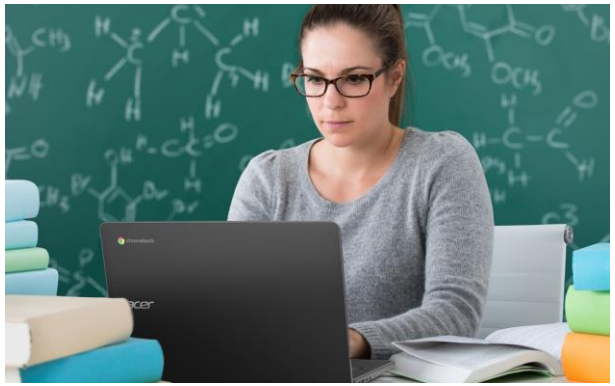

# THE ROLE OF AI IN EDUCATION 4.0

WORLD ECONOMIC FORUM

INSIGHT REPORT

# GLOBAL KEY CHALLENGES

## 1 SHORTAGE OF TEACHERS



Obstacle to improving education outcomes

## 2 NON-TEACHING TASKS

Impacting the time they have to focus on quality interactions with students

## 3 DIGITAL SKILL GAP CLOSING

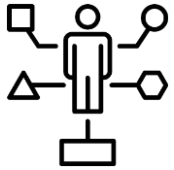
Critical factor in ensuring the future employability of students

# THE ROLE OF AI IN EDUCATION 4.0

> If managed well, technology – particularly artificial intelligence (AI) – offers a unique opportunity to help education systems enable Education 4.0 – teaching and learning approach that focuses on providing learners with the abilities, skills, attitudes and values fit for the future.

# FUTURE OF JOBS

40%



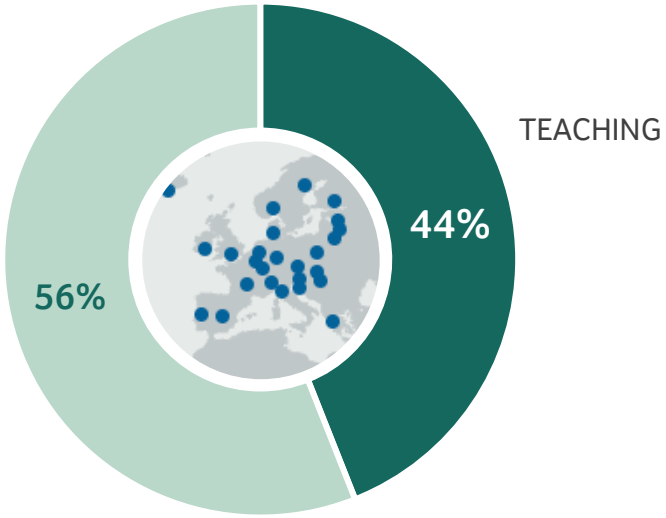
## JOB TRANSFORMATION

Core skills required in all jobs expected to change in the next 5 years.

# THE ROLE OF AI IN EDUCATION 4.0

> There is an opportunity for AI and other emerging technologies to ensure that teaching emerges as a "future-ready" profession.

# NON-TEACHING TASKS

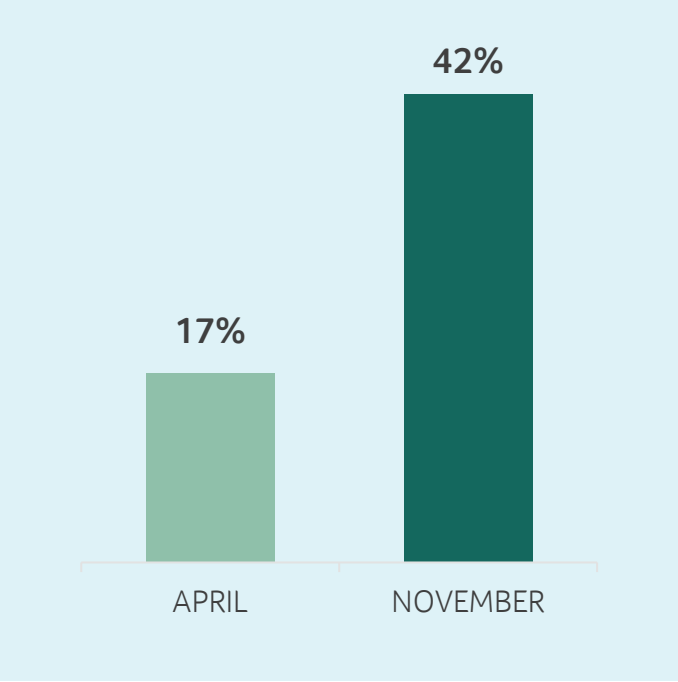



## ADMINISTRATIVE TASKS

In the latest OCED[1] Survey, the main source of stress for teachers in both primary and lower secondary education has been "**having too much administrative work to do**", at 47% and 48%, respectively.

1: OCED stands for Organisation for Economic Co-operation and Development. Country members are 38, 26 from Europe (incl. Italy)

# AI INTEGRATION




## GENERATIVE AI USE IN EDUCATION

Primary and Secondary teachers in the UK using generative AI to aid with their schoolwork in 2023.

Source: The Open Innovation Team and the Government of the United Kingdom Department for Education, *Generative AI in Educatio*n, 2023

# DIGITAL SKILL

To prepare workers and address global digital and skills shortages in the medium-to-long term, teaching about technology, including AI, must be emphasized in education.

# PROMISES OF AI IN EDUCATION

## SUPPORTING TEACHERS' ROLE

Streamline a broad set of administrative tasks for teachers, allowing them to dedicate more time to engage with students.

## REFINING ASSESSMENT

AI can help teachers in assessing learners more rapidly and enabling them to provide more immediate feedback

## SUPPORTING DIGITAL LITERACY

AI can enable students and learners to develop digital literacy, critical thinking, problem-solving and creativity skills

## PERSONALIZED LEARNING

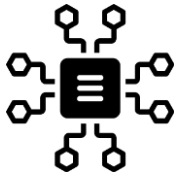
AI can help Teachers personalizing the learning experience, leading to improved academic performance and better adaptation to diverse learning needs

## SKILL EMPOWERMENT

Learning about AI and digital skills – even through traditional methods – can support learners in being prepared for the jobs of tomorrow.

# IMPACT OF AI IN EDUCATION

**20%**

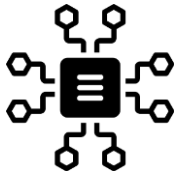


## TASK AUTOMATION

Work time on clerical activities and administrative tasks, such as assessing attendance, enrolment and other forms of data analysis, that could be automated with AI.

Source: World Economic Forum, *Jobs of Tomorrow: Large Language Models and Jobs*, 2023.

# IMPACT OF AI IN EDUCATION



## AUTOMATABLE TASKS

- Compile lists of books, periodicals, articles and audio-visual materials on particular subjects.
- Verify facts, dates and statistics, using standard reference sources.
- Grade homework and tests, and compute and record results, using answer sheets or electronic marking devices.

## AUGMENTABLE TASKS

- Analyse performance data to determine effectiveness of instructional systems, courses or instructional materials.
- Design learning products, including Web-based aids or electronic performance support systems.
- Develop teaching or training materials, such as handouts, study materials or quizzes.
- Prepare assignments for teacher assistants or volunteers.

# ASSESSMENT AND ANALYTICS IN EDUCATION

Similar to how human tutors can offer instant, personalized feedback, AI automation in assessments can allow for immediate feedback on a larger scale, aiding students in comprehending mistakes and supporting teachers in identifying areas for improvement.

# AI AND DIGITAL LITERACY

> Integrating AI into curricula does not imply that every student must become an AI expert. The emphasis should be on cultivating awareness and nurturing curiosity, by teaching students how to assess the reliability of sources and discern the accuracy of information presented on websites.

# From WHAT to ask to HOW to ask

# CASE STUDY | LETRUS, BRAZIL

## LEVERAGING LITERACY THROUGH AI

Letrus focuses on **personalized learning through AI**, offering immediate feedback to students.

Teachers receive **tailored recommendations** for content and methodologies

School managers can **monitor progress** and gain immediate insights into improvement areas as well as **emerging learning gaps** that may benefit from targeted intervention.

Within five months of programme implementation, participating students achieved the **2nd position** in the national writing exams, a remarkable improvement compared to the 8th position attained by the control group.

# CASE STUDY | AI TUTOR PROJECT, UAE

UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

## PROMOTING EDUCATIONAL EQUITY

The AI tutor **tailors lessons to the individual needs** and learning styles of each student, ensuring that they receive the right level of challenge and support.

It continually assesses student progress, **identifying areas of improvement** and providing targeted feedback and additional resources to help students overcome their challenges.

Finally, it aims to **alleviate teacher workload**, enabling them to focus on more strategic and interactive aspects of the learning experience.

During the piloting stage, the AI Tutor demonstrated a **10% increase** in learning outcomes.

# CASE STUDY | AI DIGITAL TEXTBOOKS, SOUTH KOREA

교육부
Ministry of Education

## ENABLES CUSTOMIZATION FOR LEARNERS

The introduction of digital textbooks will enable **customized learning opportunities** for students, who will receive tasks and activities differentiated based on individual proficiency, allowing students to learn at their own pace.

The Ministry of Education emphasizes **the coexistence of paper and digital** formats in schools.

The plan also emphasizes collaboration between human teachers and AI assistants, with a focus on **fostering lead teachers** who provide humanized guidance alongside AI technology.

The rollout of the program is expected to begin in 2025, involving 400 teachers who will be using the AI-powered textbooks in their teacher training.

# LOOKING AHEAD

71%

## CONCERN ON AI

People concerned about potential risks of AI integration in Education

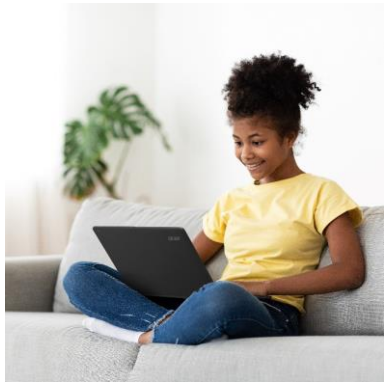
Source: *Trust in Artificial Intelligence: A Global Study*, Brisbane: The University of Queensland, 2023.

# LOOKING AHEAD

## COLLABORATION

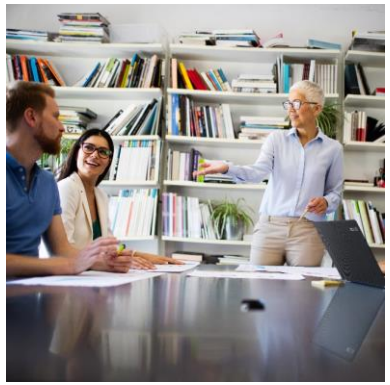
AI for education must be developed in collaboration with educators, ensuring it meets the diverse learning needs of students, supports teachers in their focus on human interactions.

## SECURITY



AI integration in education must ensure the protection of sensitive information by implementing robust data privacy and security protocols

## TRAINING



Students, teachers and administrators must receive necessary training and upskilling opportunities oriented to their needs to help them make the most productive use of AI systems.

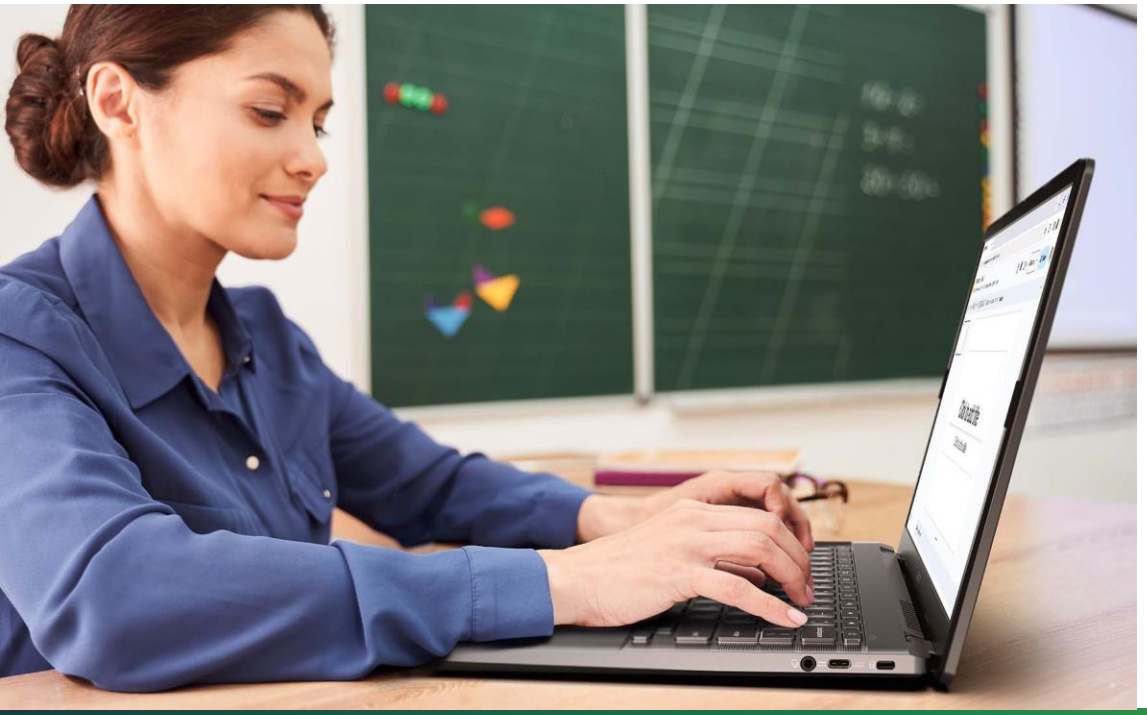
## EQUITY

Equity and inclusion considerations must be central to the design of programs to ensure that AI literacy is widely imparted and the benefits of AI technologies in education accrue widely.

# AI FOR THE IT INDUSTRY

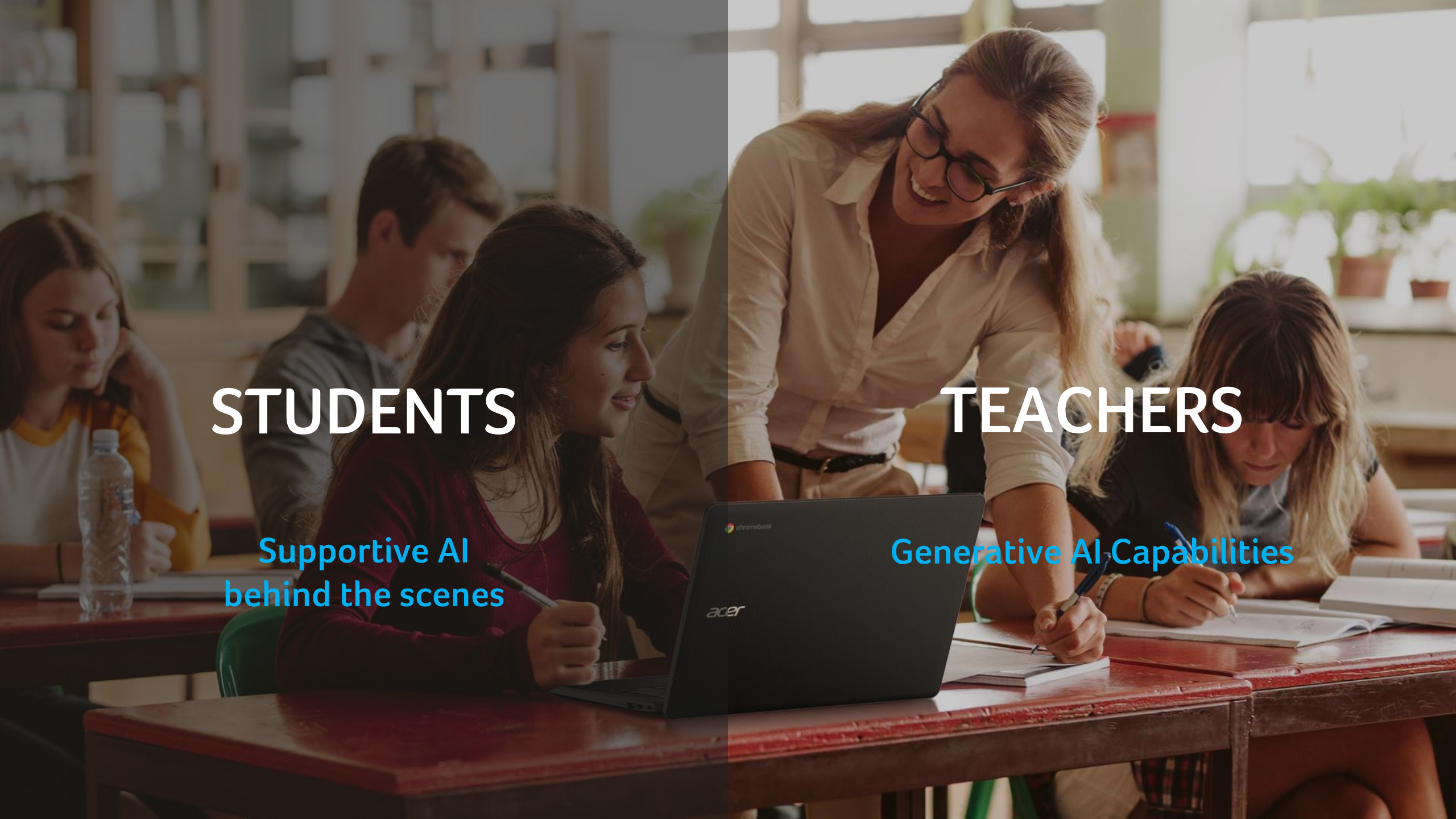
"AI will not replace your job.
But someone who knows how to use AI better than you... will"

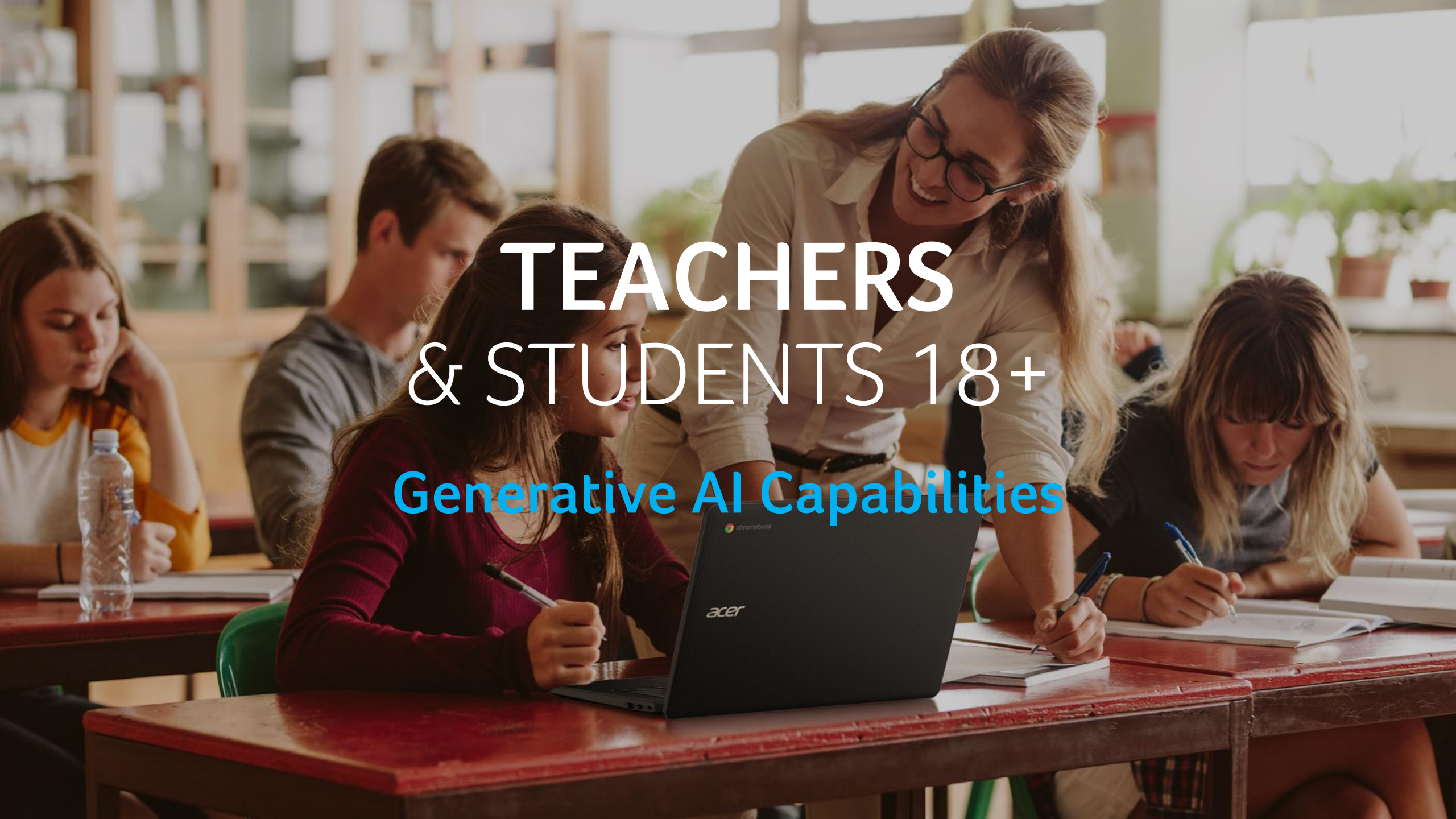
IDC CEO Interview series 2024



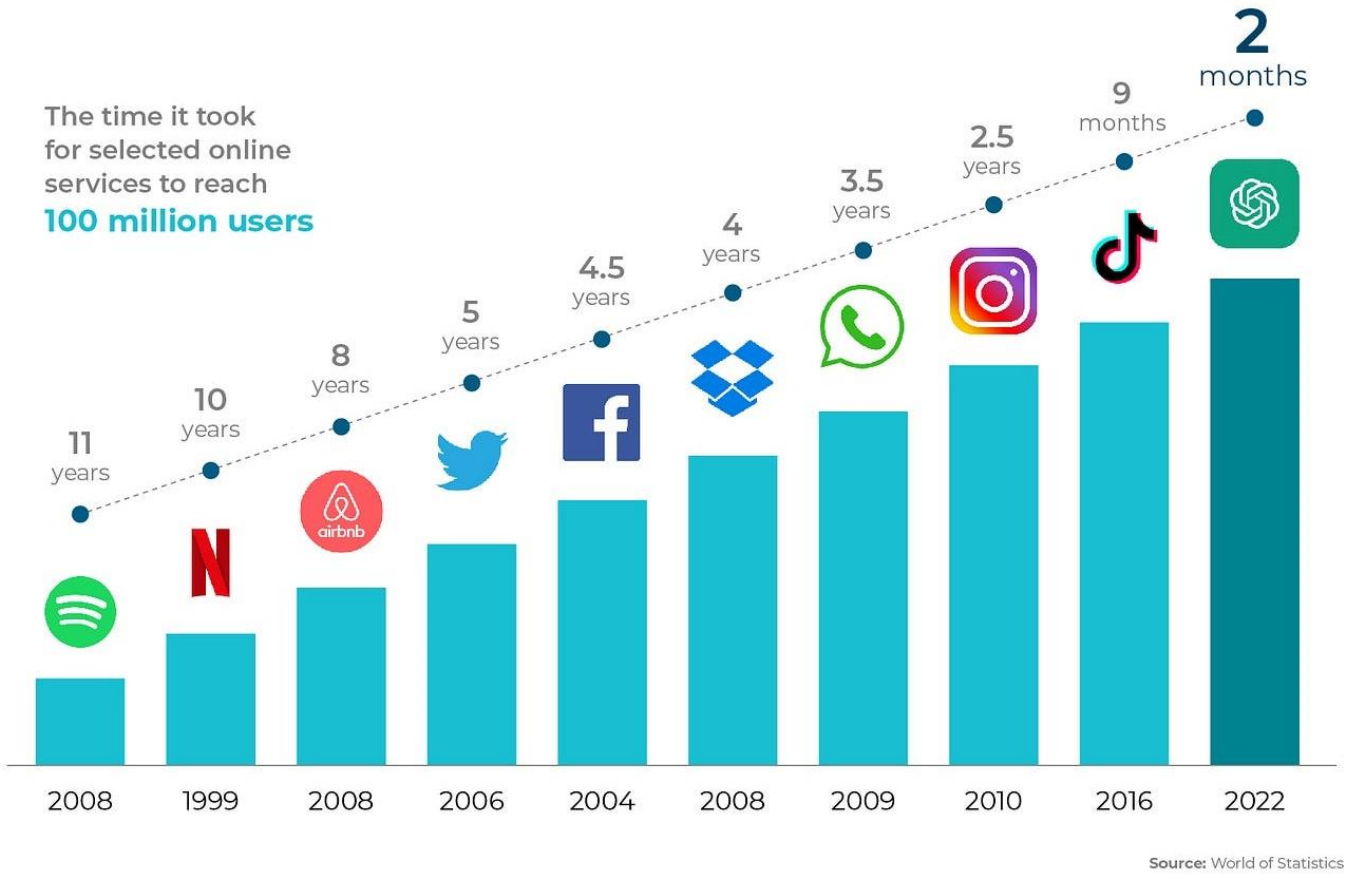
# AI FOR EDUCATION

## SOLUTIONS BY THE BIG TECH

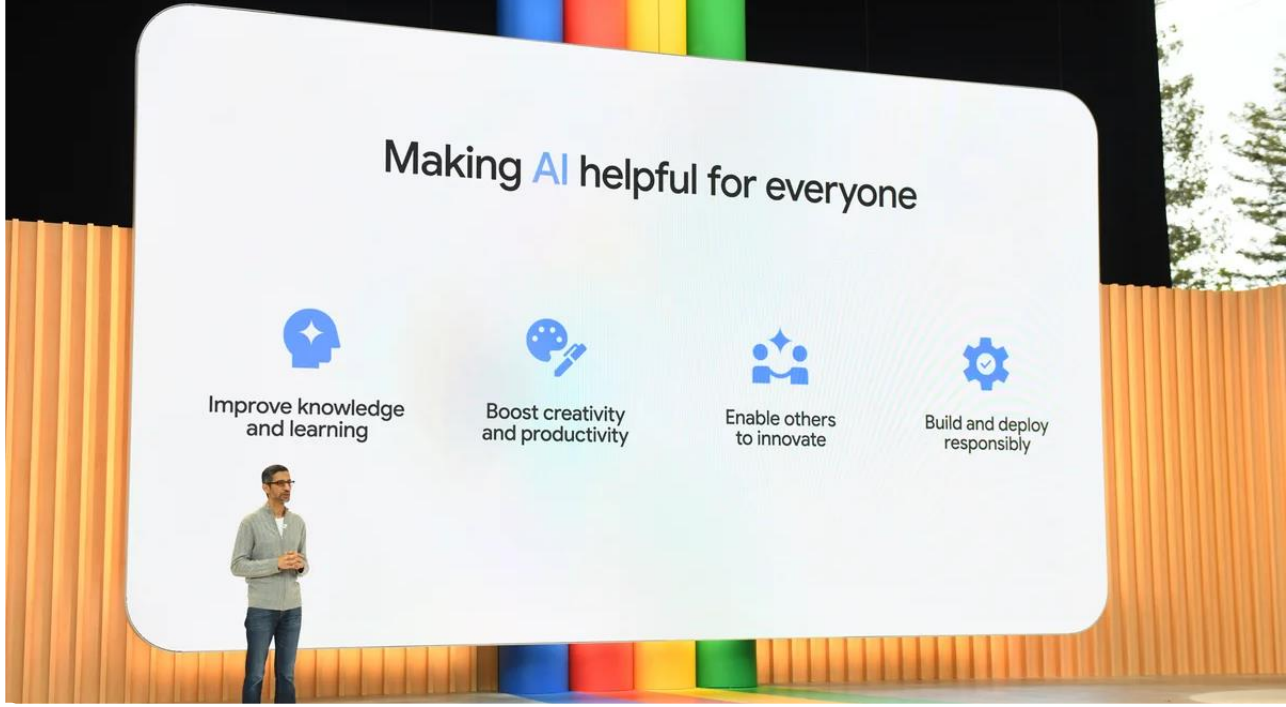

STUDENTS
Supportive AI
behind the scenes
TEACHERS
Generative AI Capabilities
acer


TEACHERS
& STUDENTS 18+
Generative AI Capabilities
acer

# CHAT-GPT SPRINTS TO 100M USERS



Microsoft
♥
OpenAI


Making AI helpful for everyone
Improve knowledge and learning
Boost creativity and productivity
Enable others to innovate
Build and deploy responsibly

AI PC
Fundamentally transforming the PC experience
intel innovation

THE WORLD'S MOST INFLUENTIAL PEOPLE
TIME
100
This is the iPhone moment of artificial intelligence
Jensen Huang, NVIDIA CEO

# From WHAT to ask to HOW to ask

# From SEARCHING to PROMPTING

# GENERATIVE AI FOR ALL

## Ask

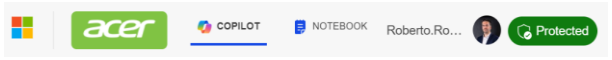
## Create

## Summarize

# GENERATIVE AI RECOMMENDATION

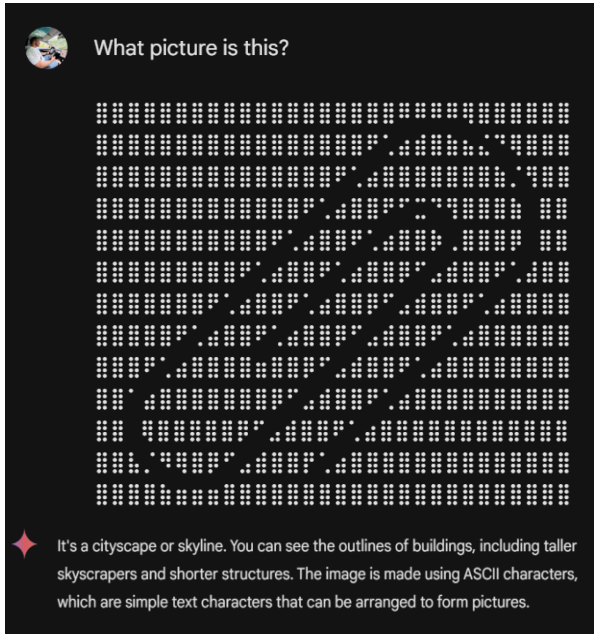
## 1 Don’t Be Afraid

**...but don’t share sensitive information on public web services**




## 2 Don’t Trust It Blindy

**Hallucinations happen!**




## 3 Use It

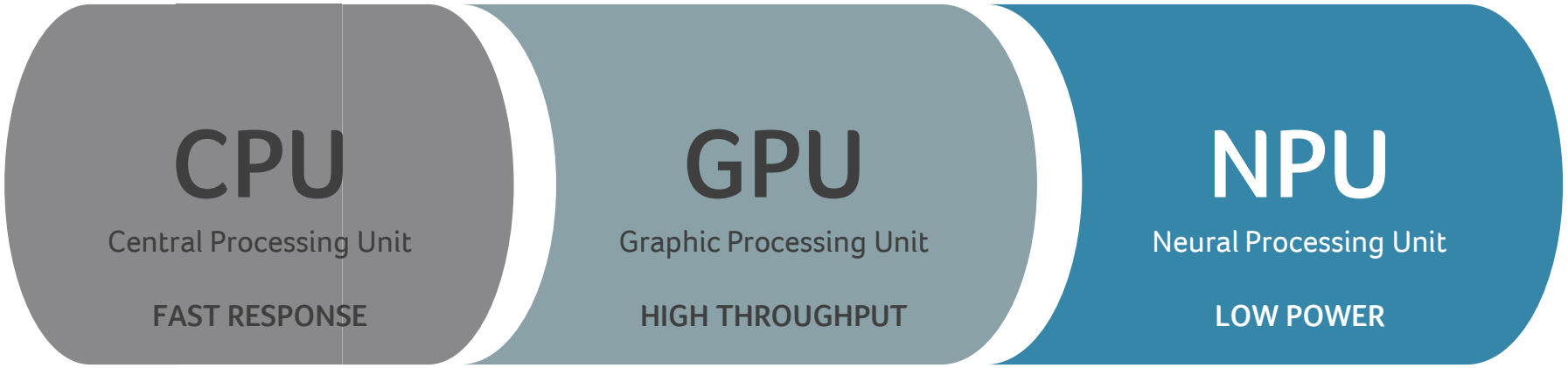
[copilot.microsoft.com](copilot.microsoft.com)

[gemini.google.com](gemini.google.com)

### THE ART OF PROMPTING

**Objective** | What
**Context** | Who need it? Age?
**Source** | What sources/examples?
**Expectations** | How? Which tone of voice?

# AI ENGINES


CPU
Central Processing Unit
FAST RESPONSE
GPU
Graphic Processing Unit
HIGH THROUGHPUT
NPU
Neural Processing Unit
LOW POWER

# GENERATIVE AI FOR ALL

**TOPS** | Trillion Operations Per Second

**NPU**

Neural Processing Unit

LOW POWER

# AI FOR ALL

Windows 11

## Standard PC

Supportive AI behind the scenes

CPU GPU

## AI PC

Generative AI built-in

CPU GPU NPU 10+

## Copilot+PC

Generative AI built-in
+ local workload
+ unique AI feature

Copilot+PC

CPU GPU NPU 40+

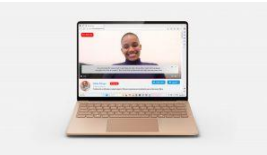
acer

# AI FOR ALL

Windows 11

Recall

Cocreator



Live Caption

## Copilot+PC

Generative AI built-in
+ unique AI feature
+ **local workload**

Copilot+PC

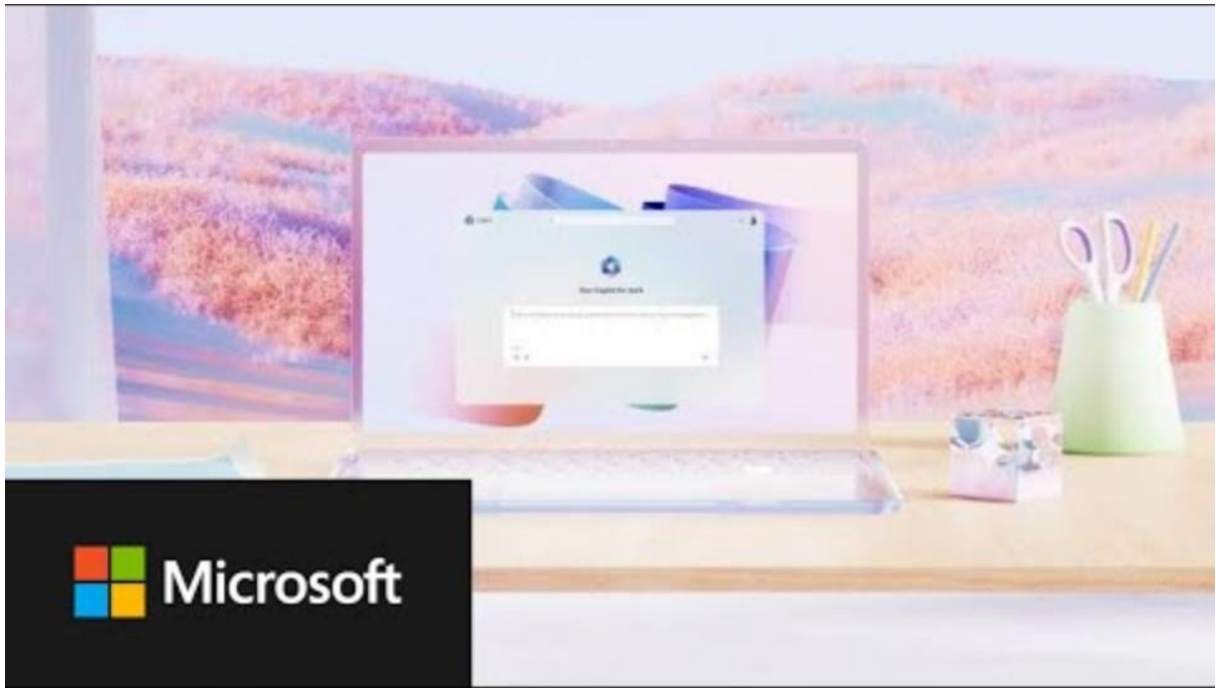
CPU GPU NPU 40+

acer

# GENERATIVE AI SOLUTION

Microsoft 365 Copilot

ONLY FOR TEACHERS & STUDENTS 18+




| | |
|---|---|
| Paid License | approx. 30$/user/month (annual plan) |
| Requirement | At least M365/O365 A3 license for teacher |

# AI FOR ALL

chromeOS

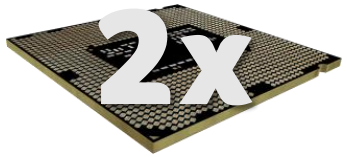
chromebookplus

## Chromebook

Supportive AI behind the scene

## Chromebook Plus

Generative AI built-in

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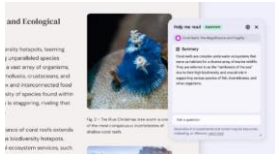
# AI FOR ALL

Auto File Sync

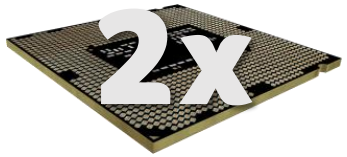
Magic Editor



Help Me Read
coming soon

# Chromebook Plus

Generative AI built-in



# GENERATIVE AI SOLUTION

Gemini for Workspace

ONLY FOR TEACHERS & STUDENTS 18+

## Gemini Education

**Google Workspace app**

Starting from 16$/user/month

## Gemini Education Premium

**+ advanced Gemini in Meet & proactive security**

Starting from 24$/user/month

# GENERATIVE AI FOR ALL

| Freemium | Embedded | Subscription |
| --- | --- | --- |
| Copilot | Copilot+PC | Microsoft 365 Copilot |
| Gemini | chromebook plus | Gemini for Workspace |

# EU REGULATIONS

AI ACT

GREEN DEAL

# ARTIFICIAL INTELLIGENCE ACT

EU Artificial Intelligence Act

**The AI Act is a European regulation on artificial intelligence – the first comprehensive regulation on AI by a major regulator anywhere..**

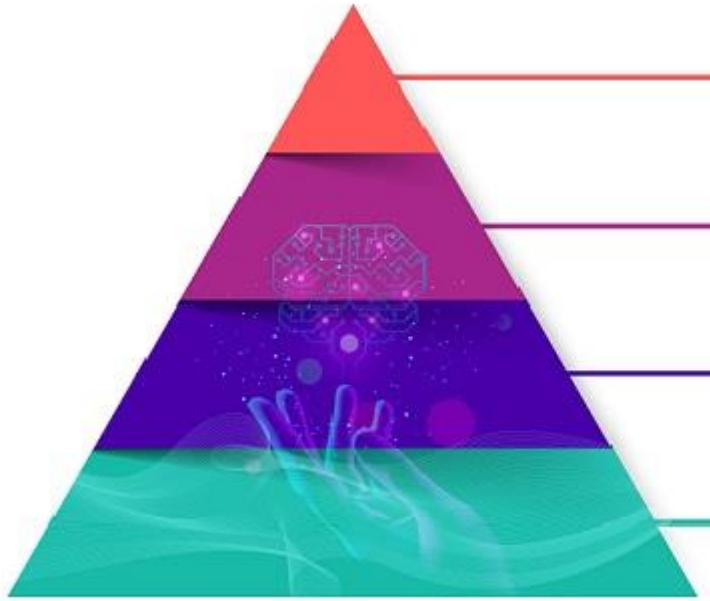
The European Council formally adopted the EU AI Act on 21 May 2024.

The AI Act will be formally published in the Official Journal in June/July.

EU Member States will have two years for the implementation.

# ARTIFICIAL INTELLIGENCE ACT

## EU Artificial Intelligence Act



UNACCEPTABLE RISK | Biometric identification, human behaviour manipulation, social scoring > **BANNED**

HIGH RISK | Exposed to significant threats to health, safety or fundamental rights > **TO BE APPROVED & MONITORED**

LIMITED RISK (AI systems with specific transparency obligations) | Image & sound manipulation (deepfake) > **OPEN SOURCE, NOT REGULATED with EXCEPTIONS**

MINIMAL RISK | Majority of AI applications > **NOT REGULATED**

# AI & SUSTAINABILITY

# AI & SUSTAINABILITY

## Contributions

### Efficiency

AI can optimize processes, reduce waste, and improve resource utilization

### ESG Goals

by speeding up market trend analysis, ensuring risk management, and facilitating data collection or report generation.

## Challenges

### Energy Consumption

Training generative AI models requires significant compute resources, contributing to carbon emissions.

# EUROPEAN GREEN DEAL

## The European Green Deal is the EU's strategy for reaching the climate neutrality by 2050.

The NextGenerationEU Recovery plan will finance the European Green Deal with €600 billion, one third of the total.

160+ Legislations

| 35 | 28 | 4 | 32 | 64 |
|---|---|---|---|---|
| Announced | Tabled | Blocked | Close to Adoption | Adopted |

# EUROPEAN GREEN DEAL

## Sustainable Company

### CSRD

Corporate Sustainability Reporting Directive

### CSDDD

Corporate Sustainability Due Diligence Directive

## Sustainable Products

### Right to Repair

### ESPR

Ecodesign for Sustainable Products Regulation

# ECODESIGN FOR SUSTAINABLE PRODUCTS REGULATION (ESPR)

## Article 5 – Ecodesign requirements

**SMARTPHONE & TABLETS**

June 2025

# DIGITAL PRODUCT PASSPORT (DPP)

The DPP will simplify digital access to product specific information related to sustainability, circularity, and legal compliance.

9:41
DIGITAL PRODUCT PASSPORT
PRODUCT
Brand XXXX
Article XXXX
Composition XXXX
Recyclability XXXX
IMPACT CATEGORIES
Water XXXX
Energy XXXX
Co2 XXXX
Chemicals XXXX
SUPPLY CHAIN TRACEABILITY
Company name XXXX
Country XXXX
Certifications XXXX
Impact
Digital Product Passport (DPP)
Recycled content
Forced labor
Deforestation
Carbon and environmental footprints
Industry-specific regulations
Waste shipment
Sustainability reporting
Durability, reusability, upgradability and reparability
Extended producer responsibility
Municipal waste
Information requirements
Repurposing, remanufacturing and recycling
Packaging & packaging waste

# ECODESIGN FOR SUSTAINABLE PRODUCTS REGULATION (ESPR)

**25 April 2024**
EP Plenary voted on final ESPR text

**May 2024**
Final Council endorsement

**June 2024**
Publication of ESPR in the OJ

**June/July 2024**
ESPR **entry into force**

**Q3 2024**
**Establishment of Ecodesign Forum**; calls for membership

**Late 2024/2025**
**First meeting** of the **Ecodesign Forum**

**March 2025**
Adoption of the 1st ESPR **Working Plan** (9m after entry into force)

**Mid 2025**
Acts on **unsold goods** destruction ban & exemptions (12m after entry into force)

**Late 2025**
**Acts on DPP** registry, service providers, data carriers, digital credentials

**2026**
**Adoption** of the **first ESPR measures** (e.g. textiles/steel)

**2027/2028**
**First** product **requirements** start to apply.

# LINKS

World Economic Forum – The Role of AI in Education 4.0
https://www.weforum.org/publications/shaping-the-future-of-learning-the-role-of-ai-in-education-4-0/

Esplora le possibilità con Copilot per Microsoft 365
https://learn.microsoft.com/it-it/training/modules/explore-possibilities-microsoft-365-copilot/?source=recommendations

Transform education with Gemini for Google Workspace (English)
https://edu.google.com/workspace-for-education/add-ons/gemini-for-google-workspace/

Il Green Deal Europeo
https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_it

EU Artificial Intelligent Act (English)
https://artificialintelligenceact.eu/

Acer for Education
https://www.acer.com/it-it/education

Acer for Education Blog (English)
https://acerforeducation.acer.com/

# CONTACT

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# Grazie

#AcerforEducation