Microsoft

The Future of Higher Education in the world of AI

Empower every learner and educator
on the planet to **achieve more**
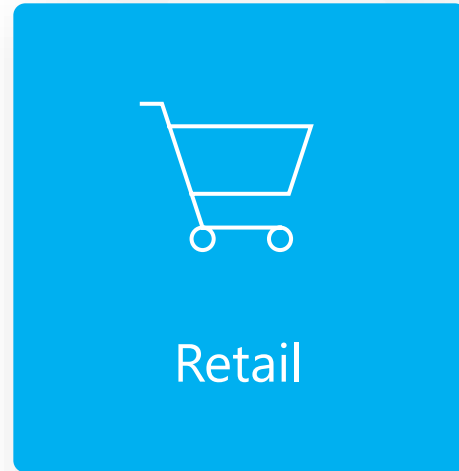
Microsoft Indonesia

Industries are accelerating adoption of AI

AI is being embedded in standard business processes

Healthcare Systems	Retail	Financial Services	Manufacturing
31%	**23%**	**32%**	**24%**
Use virtual agents	Use computer vision	Use natural language text understanding	Use robotics

Students will become workers, managers, and leaders in these industries and more

Education professionals can benefit from AI

93%

knowledge workers in Indonesia use generative AI at work, one of the highest rates globally (75%)

78%

of AI users are bringing their own AI tools to work, often without company guidance.

AI can transform education

53% of educator skills need to be performed by humans, 45% could be augmented by AI

For every $1 an organization invests in AI, it is realizing an average return of

$3.42

82%

of leaders say people will need new skills to prepare for AI

Sources: LinkedIn Future of Work Report, August 2023, Microsoft 2023 Work Trend Index: Annual Report, Math Education with Large Language Models: Peril or Promise? (November 22, 2023), IDC, The Business Opportunity of AI November 2023 Government and Education respondents, Microsoft Work Trend Index Special Report, November 2023

there will always be two sides to a coin
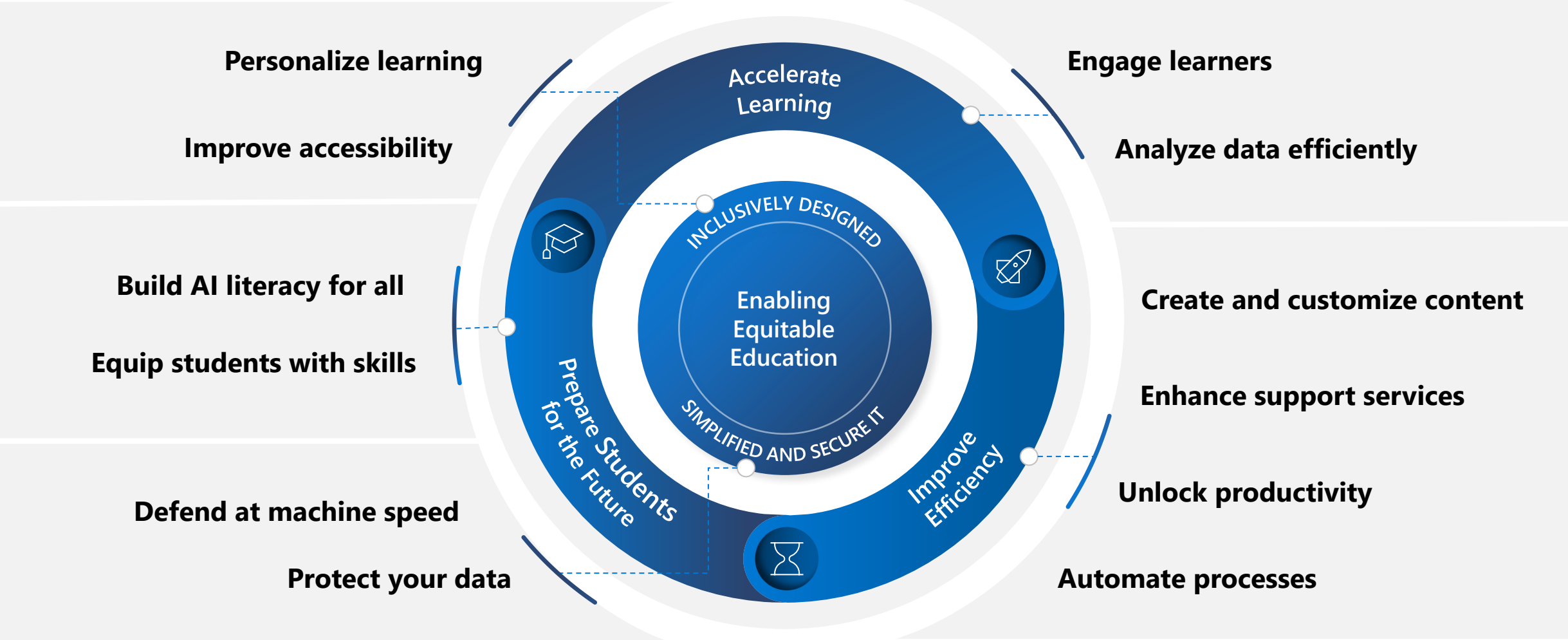
Opportunities for AI in Education

Personalize learning

Improve accessibility

Build AI literacy for all

Equip students with skills

Defend at machine speed

Protect your data

Accelerate Learning

INCLUSIVELY DESIGNED

Enabling Equitable Education

SIMPLIFIED AND SECURE IT

Prepare Students for the Future

Improve Efficiency

Engage learners

Analyze data efficiently

Create and customize content

Enhance support services
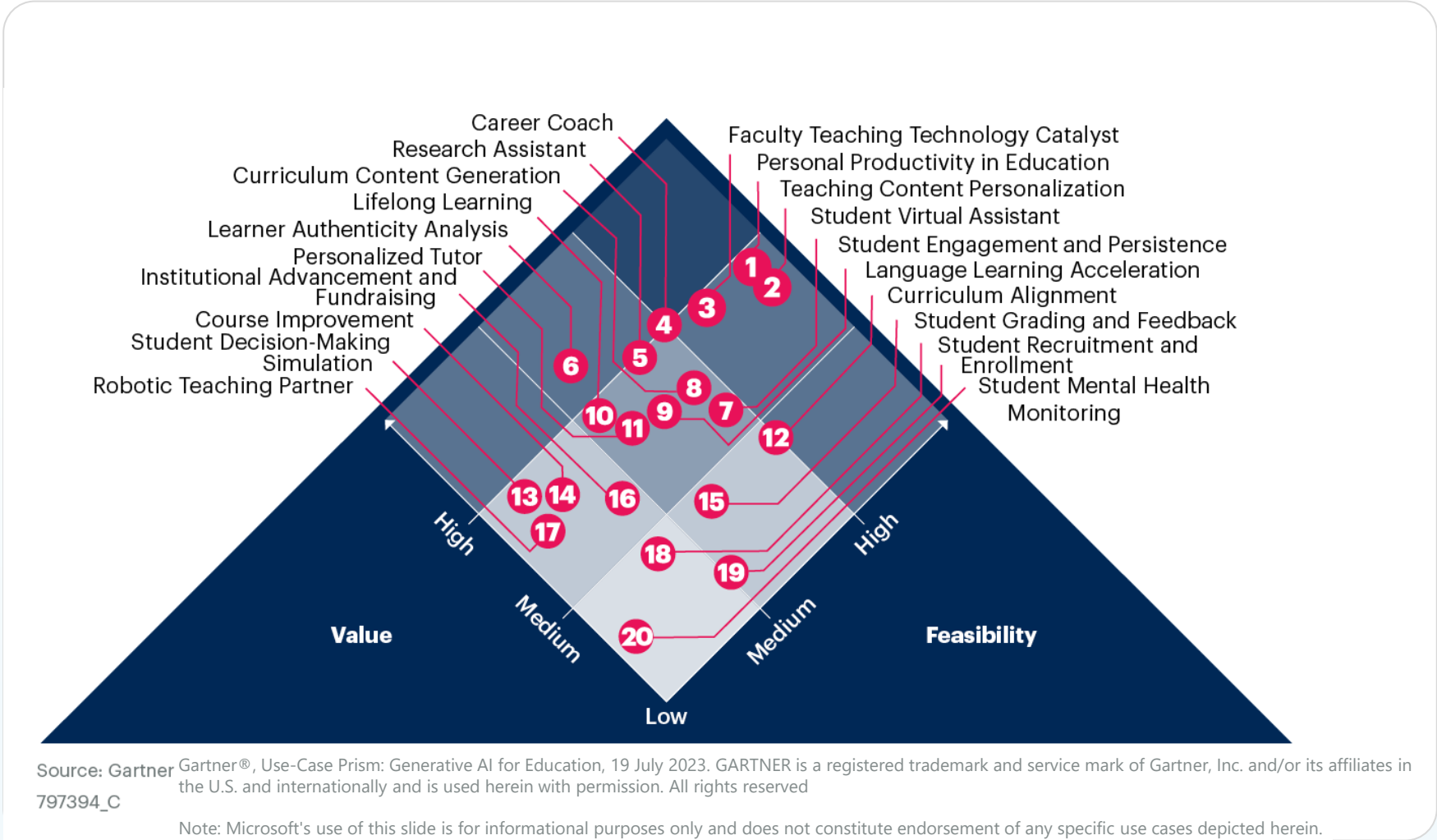
Unlock productivity

Automate processes

Generative AI Use-Case Prism for Education

Career Coach
Research Assistant
Curriculum Content Generation
Lifelong Learning
Learner Authenticity Analysis
Personalized Tutor
Institutional Advancement and Fundraising
Course Improvement
Student Decision-Making Simulation
Robotic Teaching Partner

Faculty Teaching Technology Catalyst
Personal Productivity in Education
Teaching Content Personalization
Student Virtual Assistant
Student Engagement and Persistence
Language Learning Acceleration
Curriculum Alignment
Student Grading and Feedback
Student Recruitment and Enrollment
Student Mental Health Monitoring

High

Value

Medium

High

Medium

Feasibility

Low

Note: Microsoft's use of this slide is for informational purposes only and does not constitute endorsement of any specific use cases depicted herein.
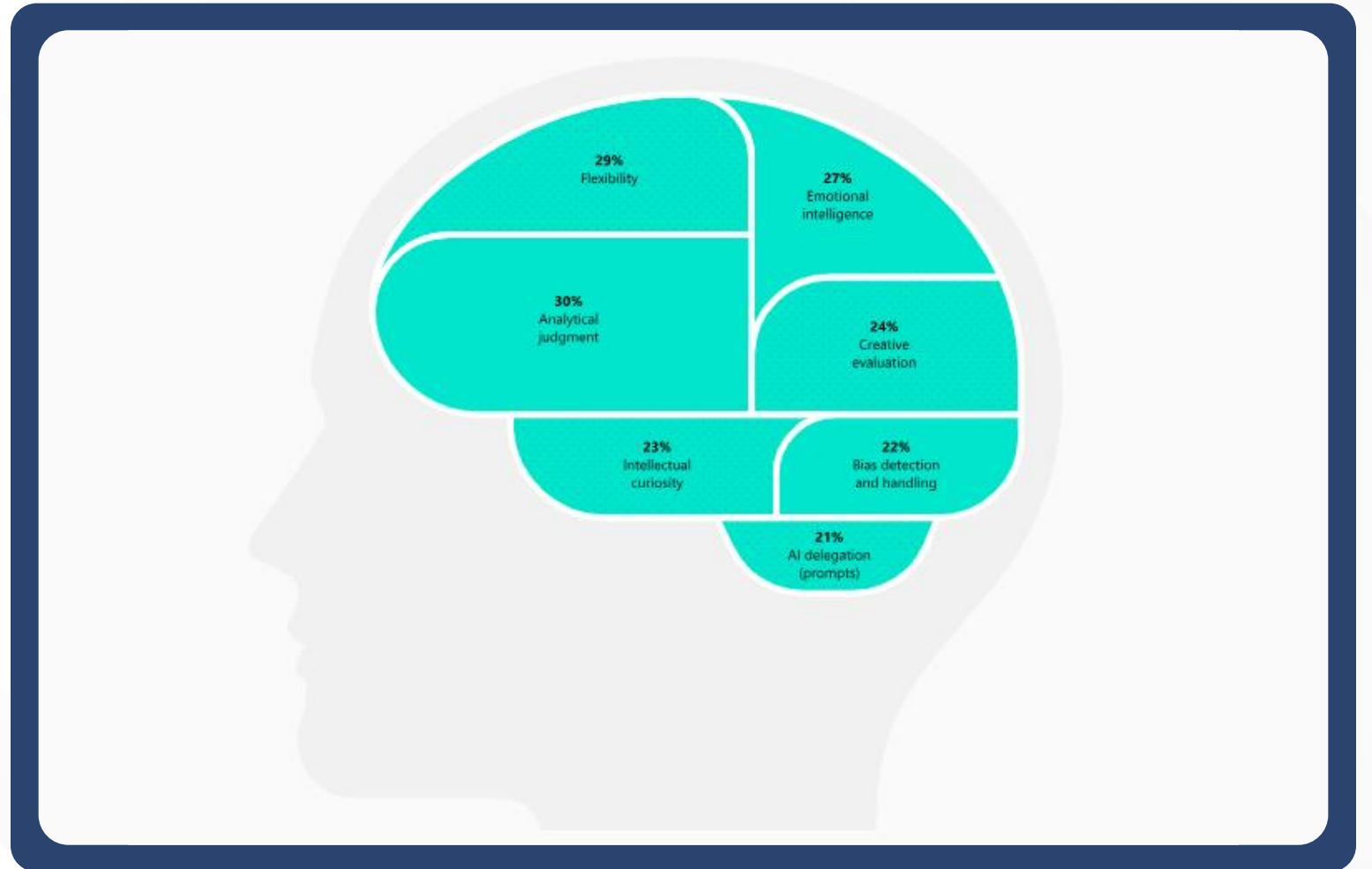
AI Requires New Skills for a New Way of Working

82% of leaders say their employees will need new skills to be prepared for the growth of AI.
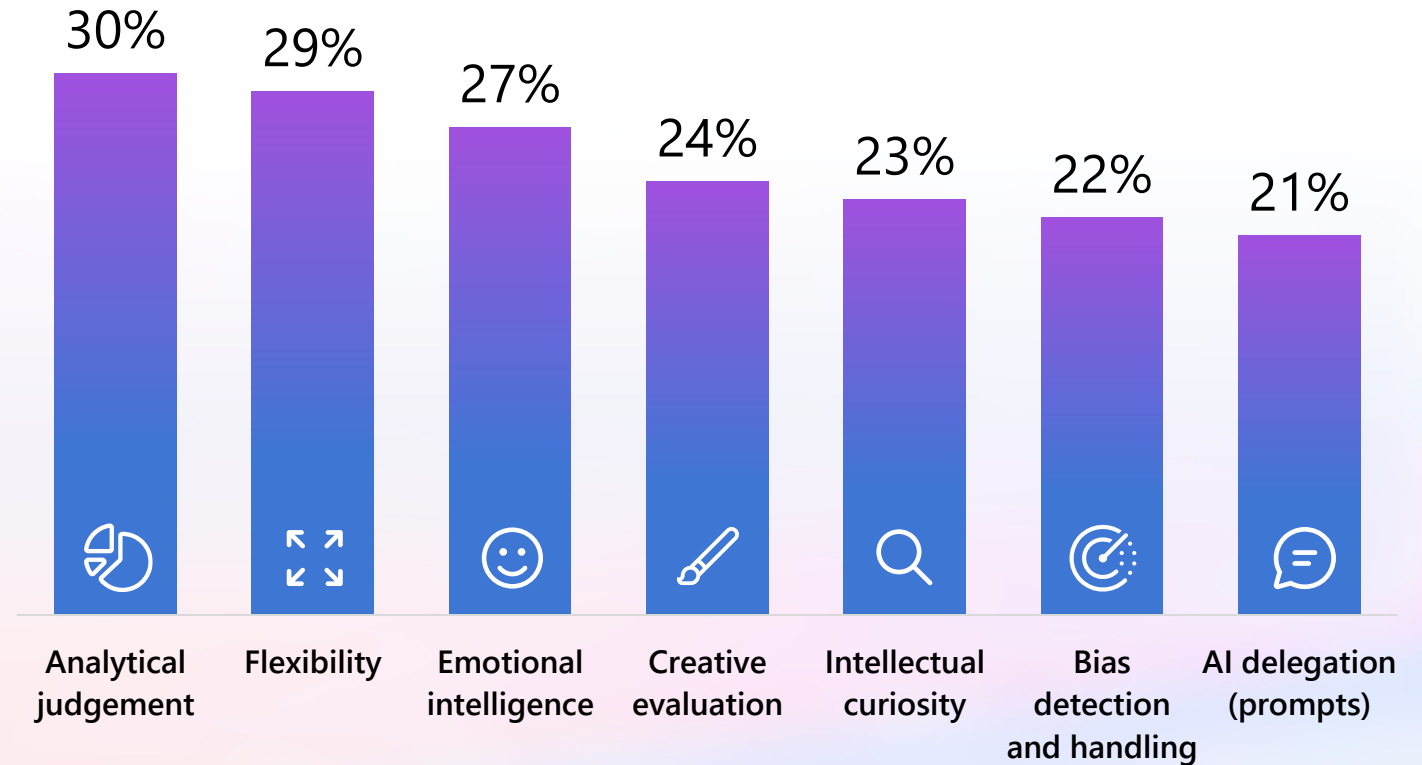
Source: 2023 Work Trend Index

How does the AI era of work impact how we teach and what we need our students to learn?

29%
Flexibility

27%
Emotional intelligence

30%
Analytical judgment

24%
Creative evaluation

23%
Intellectual curiosity

22%
Bias detection and handling

21%
AI delegation (prompts)

Employees need AI aptitude

82%

of leaders say employees will need new skills to prepare for AI

Analytical judgement	Flexibility	Emotional intelligence	Creative evaluation	Intellectual curiosity	Bias detection and handling	AI delegation (prompts)
30%	29%	27%	24%	23%	22%	21%

Everything changes with Generative AI

Students are creators and evaluators of content, not just consumers

- Curriculum/Content
- Pedagogy/Andragogy
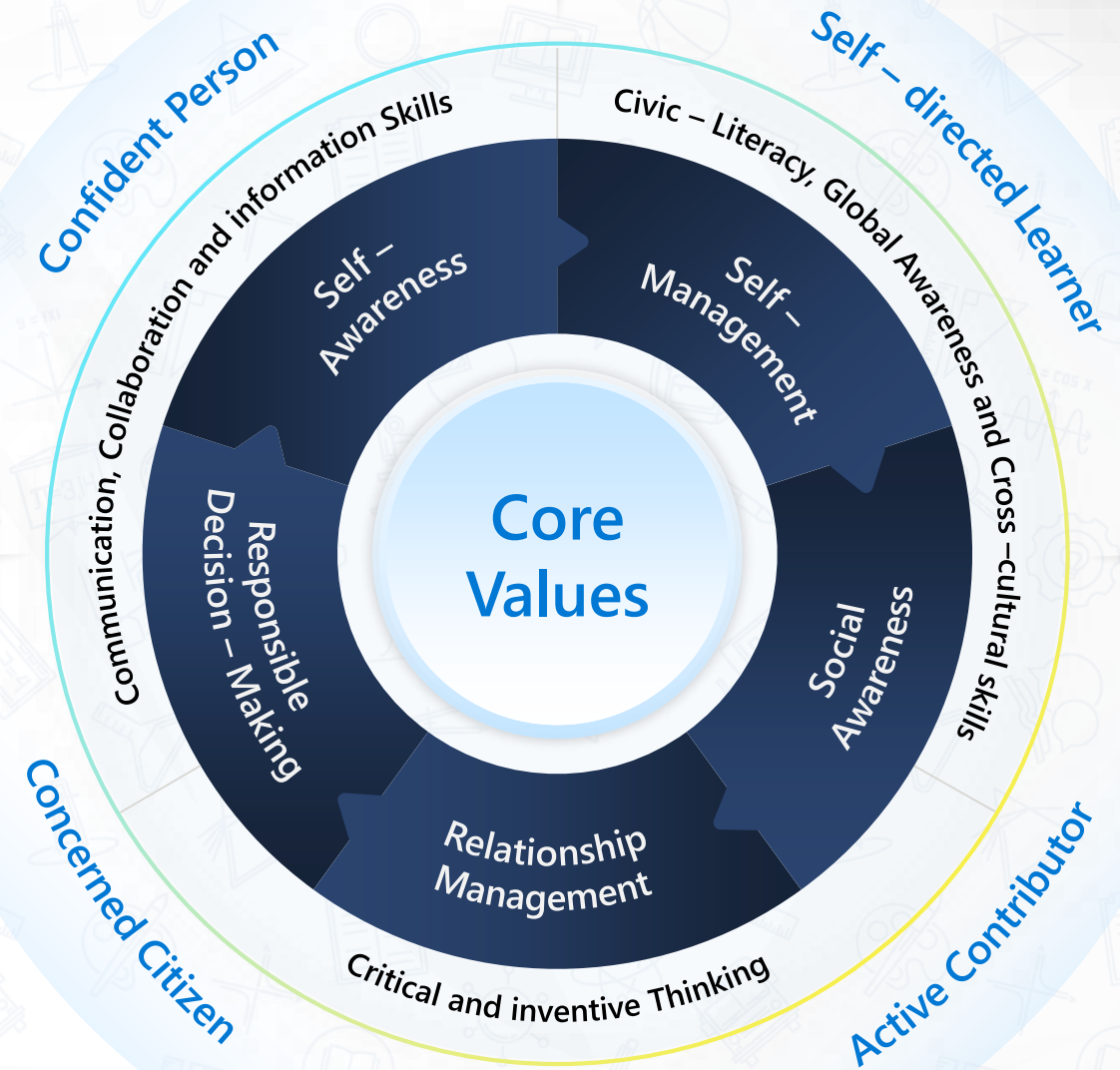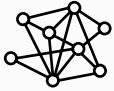- Assessment

Future of Education: Student Outcomes

Confident Person

Self – directed Learner

Concerned Citizen

Active Contributor

Core Values

Self – Awareness

Self – Management

Social Awareness

Relationship Management

Responsible Decision – Making

Communication, Collaboration and information Skills

Civic – Literacy, Global Awareness and Cross –cultural skills

Critical and inventive Thinking

Novel and Accelerated Research with Generative AI

GPT-4: a new era of artificial intelligence in medicine

Ethan Waisberg, Joshua Ong, Mouayad Masalkhi, Sharif Amit Kamran, Nasif Zaman, Prithul Sarker, Andrew G. Lee & Alireza Tavakkoli

Accelerating Innovation With Generative AI: AI-Augmented Digital Prototyping and Innovation Methods

Generative Artificial Intelligence GPT-4 Accelerates Knowledge Mining and Machine Learning for Synthetic Biology

Zhengyang Xiao, Wenyu Li, Hannah Moon, Garrett W. Roell*, Yixin Chen*, and Yinjie J. Tang*

Article Views 878 · Altmetric 4 · Citations -

LEARN ABOUT THESE METRICS

Generative AI is dreaming up new proteins

Move over, chatbots and image generation. AI-powered protein design is having a moment

by Laura Howes

April 10, 2023 | A version of this story appeared in Volume 101, Issue 12

How to Harness Generative AI to Accelerate Human Learning

W. Lewis Johnson

Synthetic Data Generation by Artificial Intelligence to Accelerate Research and Precision Medicine in Hematology

Saverio D'Amico [1], Daniele Dall'Olio [2], Claudia Sala [3], Lorenzo Dall'Olio [2], Elisabetta Sauta [1], Matteo Zampini [1], Gianluca Asti [1], Luca Lanino [1,4], Giulia Maggioni [1], Alessia Campagna [1], Marta Ubezio [1], Antonio Russo [1], Maria Elena Bicchieri [1], Elena Riva [1], Cristina A Tentori [1,4], Erica Travaglino [4], Pierandrea Morandini [1], Victor Savevski [1], Armando Santoro [1,4], Iñigo Prada-Luengo [5], Anders Krogh [5], Valeria Santini [6], Shahram Kordasti [7,8], Uwe Platzbecker [9], Maria Diez-Campelo [10], Pierre Fenaux [11], Torsten Haferlach [12], Gastone Castellani [2,3], Matteo Giovanni Della Porta [1,4]

Affiliations + expand

Accelerating Climate Resilient Plant Breeding by Applying Next-Generation Artificial Intelligence

Full Record | References (82) | Cited by (3) | Other Related Research

JOURNAL ARTICLE:

Free Publicly Available Full Text
- Accepted Manuscript (Publisher)
- Accepted Manuscript (DOE)

Publisher's Version of Record
https://doi.org/10.1016/j.tibtech.2019.05.007

Copyright Statement

OTHER AVAILABILITY
Search WorldCat to find libraries that may hold this journal

Abstract

Breeding crops for high yield and superior adaptability to new and variable climates is imperative to ensure continued food security, biomass production, and ecosystem services. Advances in genomics and phenomics are delivering insights into the complex biological mechanisms that underlie plant functions in response to environmental perturbations. However, linking genotype to phenotype remains a huge challenge and is hampering the optimal application of high-throughput genomics and phenomics to advanced breeding. Critical to success is the need to assimilate large amounts of data in biologically meaningful interpretations. Here, we present the current state of genomics and field phenomics, explore emerging approaches and challenges for multiomics big data integration by means of next-generation (Next-Gen) artificial intelligence (AI), and propose a workable path to improvement.

Authors: Harfouche, Antoine [1]; Jacobson, Daniel A. [2]; Kainer, David [2]; Romero, Jonathon C. [2]; Harfouche, Antoine H. [4]; Mugnozza, Guiseppe Scarascia [1]; Moshelion, Menachem [3]; Tuskan, Gerald A. [2]; Keurentjes, Joost JB [5]; Altman, Arie [3]

Speeding Up the Engineering of Interactive Systems with Generative AI

Author: Albrecht Schmidt   Authors Info & Claims

Check for updates

Research professionals **are benefiting from AI**

>25%

Of researchers use AI
to help them write
manuscripts

>15%

Of researchers use AI
to help them write
grant proposals

Source:
Van Noorden, R., & Perkel, J.M. (2023, October 10). " AI and science: what 1,600 researchers think".
Nature. https://www.nature.com/articles/d41586-023-02980-0

Five core pillars of AI readiness

Business
Strategy
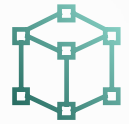
Technology
Strategy

AI Strategy
Experience

Organization &
Culture

AI
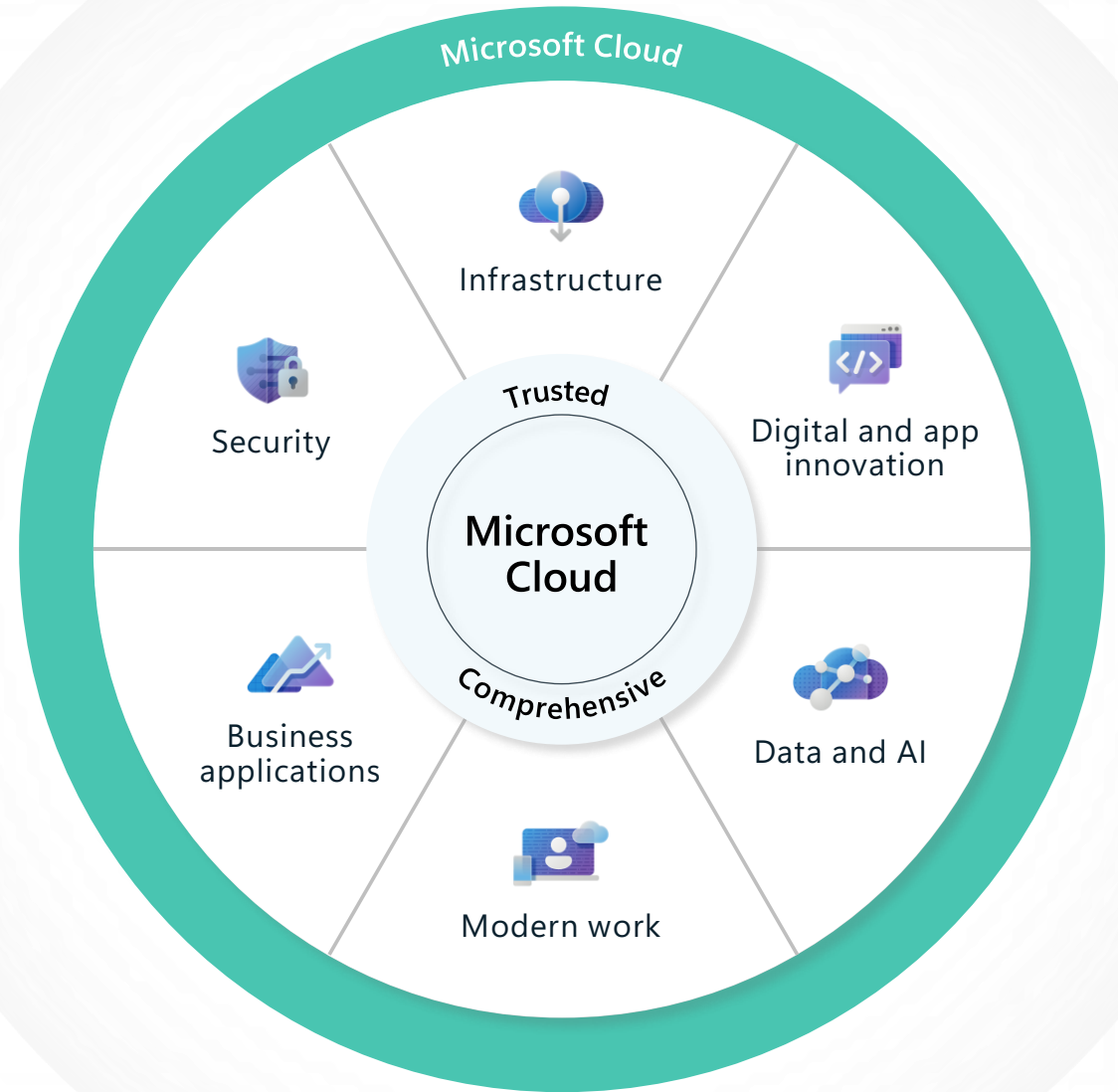Governance

aka.ms/AI-Success-Whitepaper

Enabling AI transformation

Enhance learning experiences with AI-powered tools from Microsoft

Unlock productivity across your organization with Microsoft Copilot

Build your AI capability with an open AI platform and partner ecosystem

Co-innovate with trust and safeguard your organization

Top Trends Impacting Education World-wide

1 Accessible, Flexible, Equitable digital learning environments

2 Data Analytics and AI for productivity and student success

3 Cyber Security and Threat Prevention

4 Role based, personalized user experience for faculty, staff, and students

5 Application and Infrastructure Modernization

6 Certifications/ Skilling for Educators and Learners Work force Readiness

Globally, we are being called to envision the "Future of Education"
AI is part of every education discussion

"

There is no better time to reimagine education and how technology can support that transformation."

Satya Nadella
February 2023