

# Impact of Artificial Intelligence on the future of higher education learning and teaching

**Prof Heather Nel**  
**Senior Director: Institutional Strategy**  
**10 October 2024**



# Overview of presentation

01

The features of Artificial Intelligence (AI)

02

Benefits of AI for student learning and success

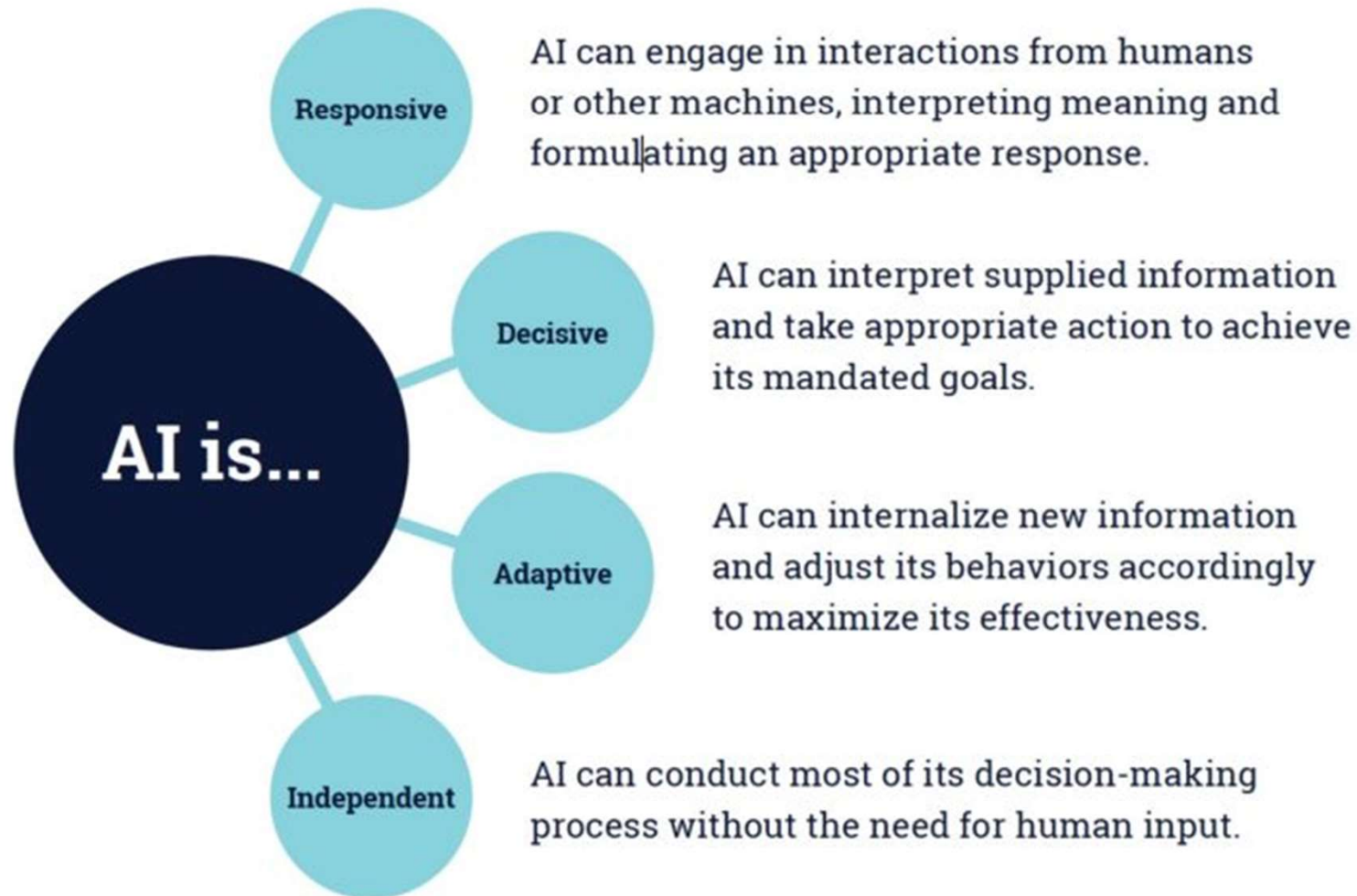
03

Risks of AI within a higher education context

04

Planning for the impact of AI on the future of higher education

# The features of Artificial Intelligence



<https://www.tonybates.ca/2018/12/02/another-perspective-on-ai-in-higher-education/>

# Benefits of AI for student learning and success



# Risks of AI within higher education

01

## Inequity

AI systems can amplify existing inequities if not designed for inclusivity. These tools may not be accessible to students with disabilities or those with unequal access to connectivity.

## Privacy and Cybersecurity Concerns

Strict data protection measures must be implemented to ensure that the privacy and security of sensitive information are not compromised.

02

03

## Over-Dependence on Technology

Over-reliance on automated AI tools may hinder the development of students' critical thinking and problem-solving skills.

## Job Displacement

Automating administrative tasks may threaten certain jobs within universities, potentially impacting employment for staff.

04

05

## Ethical Dilemmas

The use of AI raises ethical questions about surveillance and consent, necessitating policy development.

## Limited Human Interaction

Increased use of AI in learning environments might reduce face-to-face interactions, which develop interpersonal skills and build relationships.

06

Risks

# Planning for the Impact of AI on the Future of Higher Education



# Preparing university students for a digital future

- The Framework for 21st Century Learning describes the skills, knowledge, and expertise students must master to navigate and influence a tech-driven society.
- The foundation of learning is academic subject knowledge on which various skills must be built:
  - ❖ **Learning Skills:** Also known as the "four Cs" - critical thinking, communication, collaboration, and creativity.
  - ❖ **Life Skills:** Flexibility, initiative, social skills, productivity, leadership.
  - ❖ **Literacy Skills:** Information literacy, media literacy, technology literacy.
- Integrating AI ethics into the curriculum can foster a generation of students who are conscious of the social implications of technology, preparing them to advocate for equity and justice.

<https://www.panoramaed.com/blog/comprehensive-guide-21st-century-skills>



# 5 Skills Students Need for an AI Future



## Decision-Making

Ask "why" and "how" instead of just "what." Encourage discussions, personal connections, and simulations to reinforce learning. This approach imparts valuable life lessons and truth for future decision-making.



## Problem-Solving

Problem-solving emphasizes critical thinking. Use case studies, projects, and real-life problems to nurture creative thinking, preparing students for a future alongside advancing AI.



## Metacognition

Focus on the learning process over grades. Use questions and metacognitive wrappers to encourage reflection, preparing them for an AI-driven future where process matters.



## Collaboration

Collaborative work enhances motivation, self-awareness, and teamwork skills for the future. Highlight contributions and use reflective questions to enhance student metacognition.



## Communication

Students must know how to communicate persuasively. Enhance communication skills through feedback, open-ended questions, media use, and interactive activities, preparing students for an AI-driven era.



# Planning for the impact of AI on the future of higher education

01

**Establish a Vision:** Define a clear vision for how AI will enhance educational outcomes, research, and engagement. Align this vision with the university's mission and values.

02

**Curriculum Development:** Integrate AI into the curriculum, focusing on both technical skills, fostering interdisciplinarity, and ethical considerations.

03

**Invest in Infrastructure:** Upgrade technological infrastructure to support AI applications. Ensure that students and staff have access to the necessary tools and resources.

04

**Staff Capacity Development:** Provide professional development for staff to equip them with the skills needed to integrate AI into their teaching and research.

05

**Student Support Services:** Implement AI-driven support systems to enhance student advising, tutoring, and mental health services, ensuring personalised and responsive care.

06

**Research Initiatives:** Encourage and fund interdisciplinary research projects that promote the use of AI to promote the public good, equity, and sustainability.

07

**Inclusive Engagement:** Involve diverse stakeholders—students, staff, and community members—in planning processes to ensure that AI initiatives address their needs and concerns.

08

**Community Partnerships:** Foster partnerships with local organisations, businesses, and government entities to co-create AI-driven solutions that address community challenges.

09

**Data Ethics Framework:** Develop guidelines for the ethical use of AI and data analytics, with an emphasis on privacy, equity, and transparency.

10

**Monitoring and Evaluation:** Establish metrics to assess the impact of AI initiatives. Use feedback for continuous improvement strategies.



**Change the World**  
mandela.ac.za