

The Interplay between Technology and Humanity: Shaping the Future of Education

Enilda Romero-Hall, Ph.D.

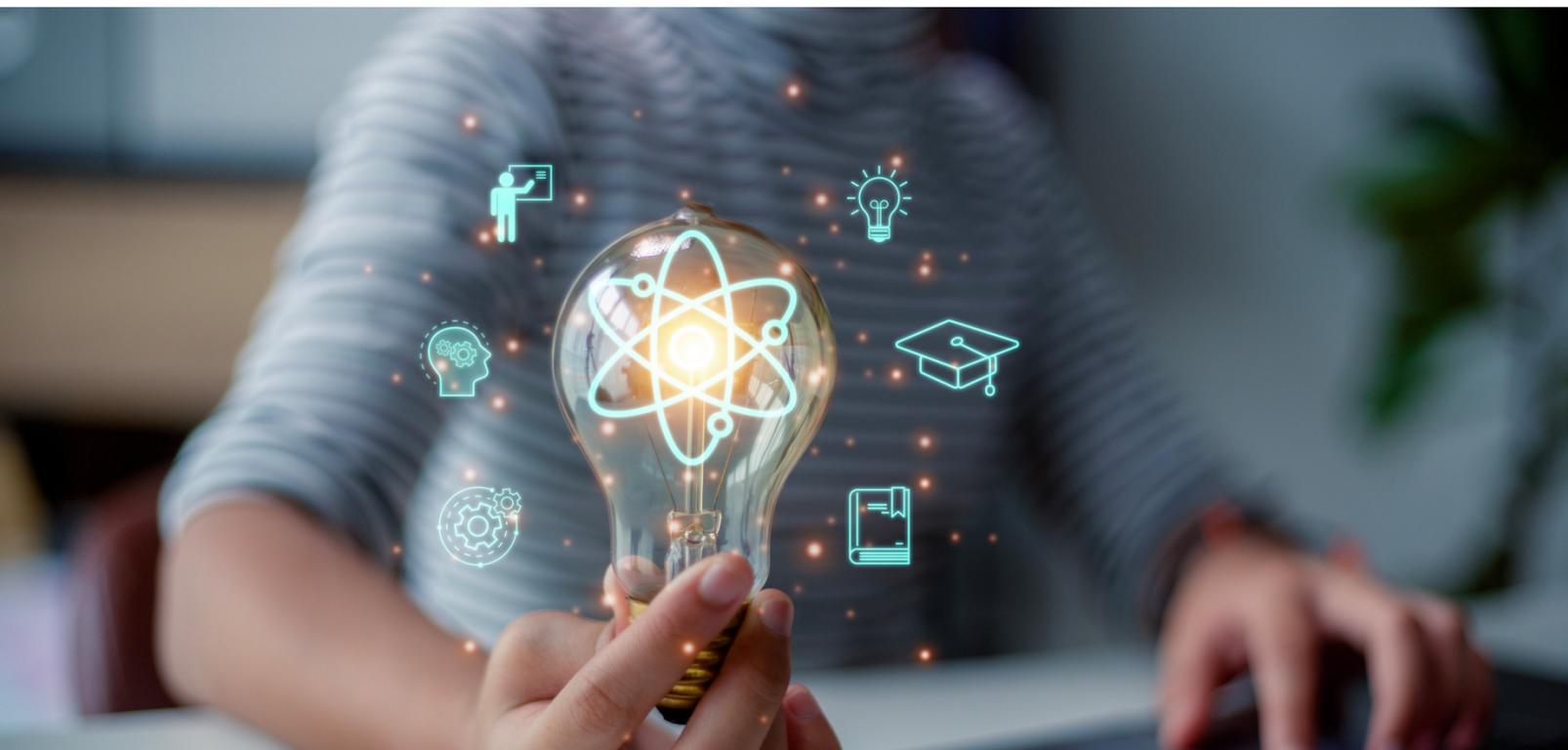
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“In the future we are building, learning will be...”





Appalachia

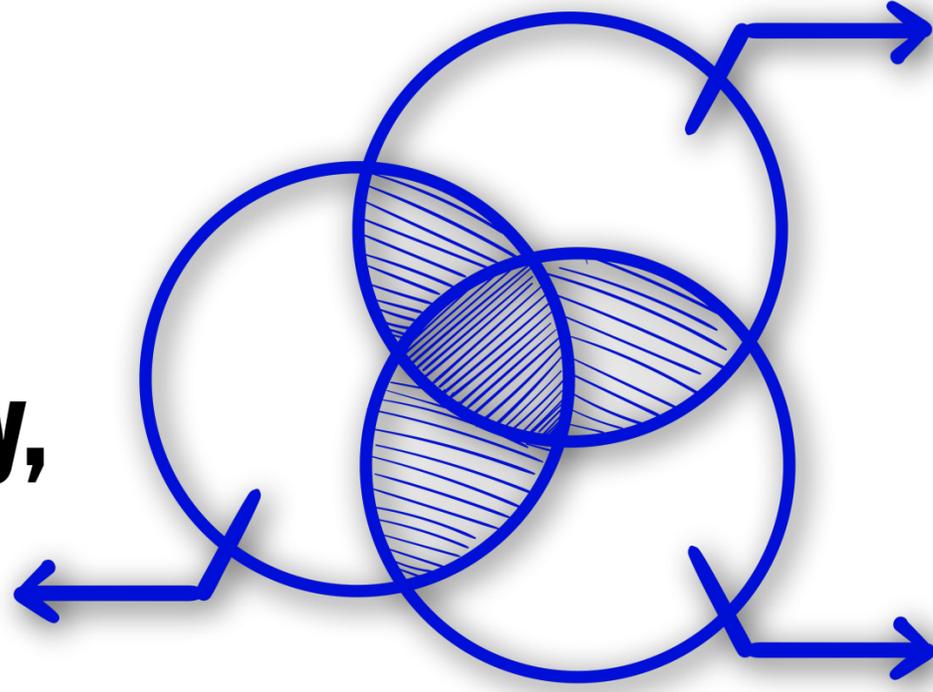


THE UNIVERSITY OF
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DEPARTMENT OF THEORY &
PRACTICE IN TEACHER EDUCATION

RESEARCH

**Bridging theory,
research,
and practice**



**Exploring how we learn in
today's digital age**

**Empowering educators and
learners alike to navigate
the complexities of a
postdigital world**

The world that we live in



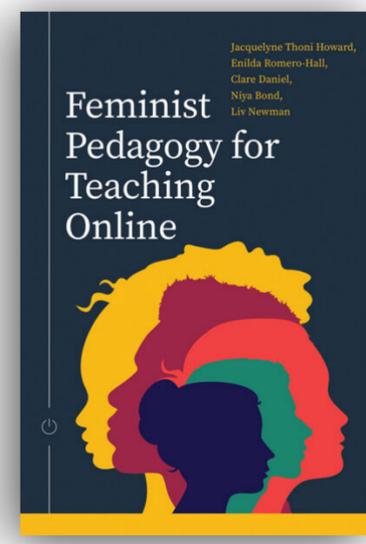
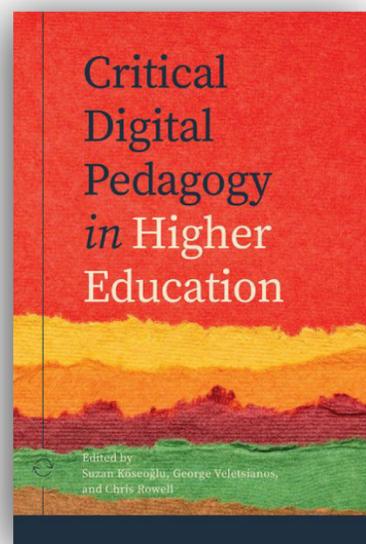
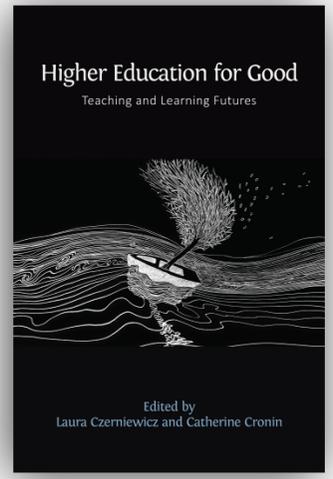
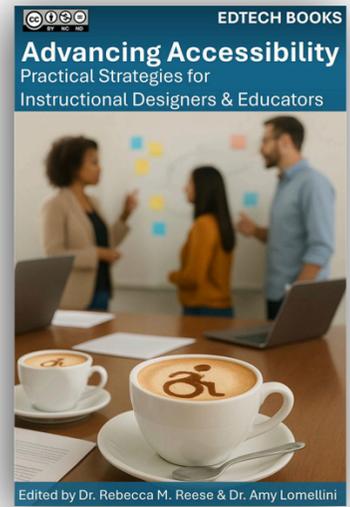
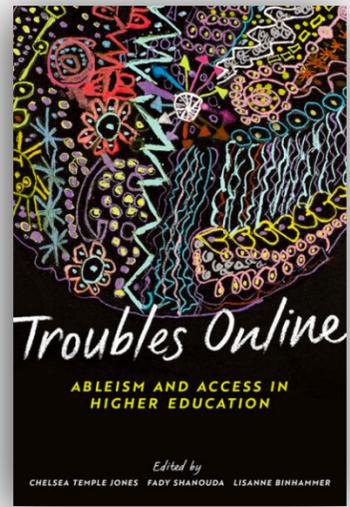
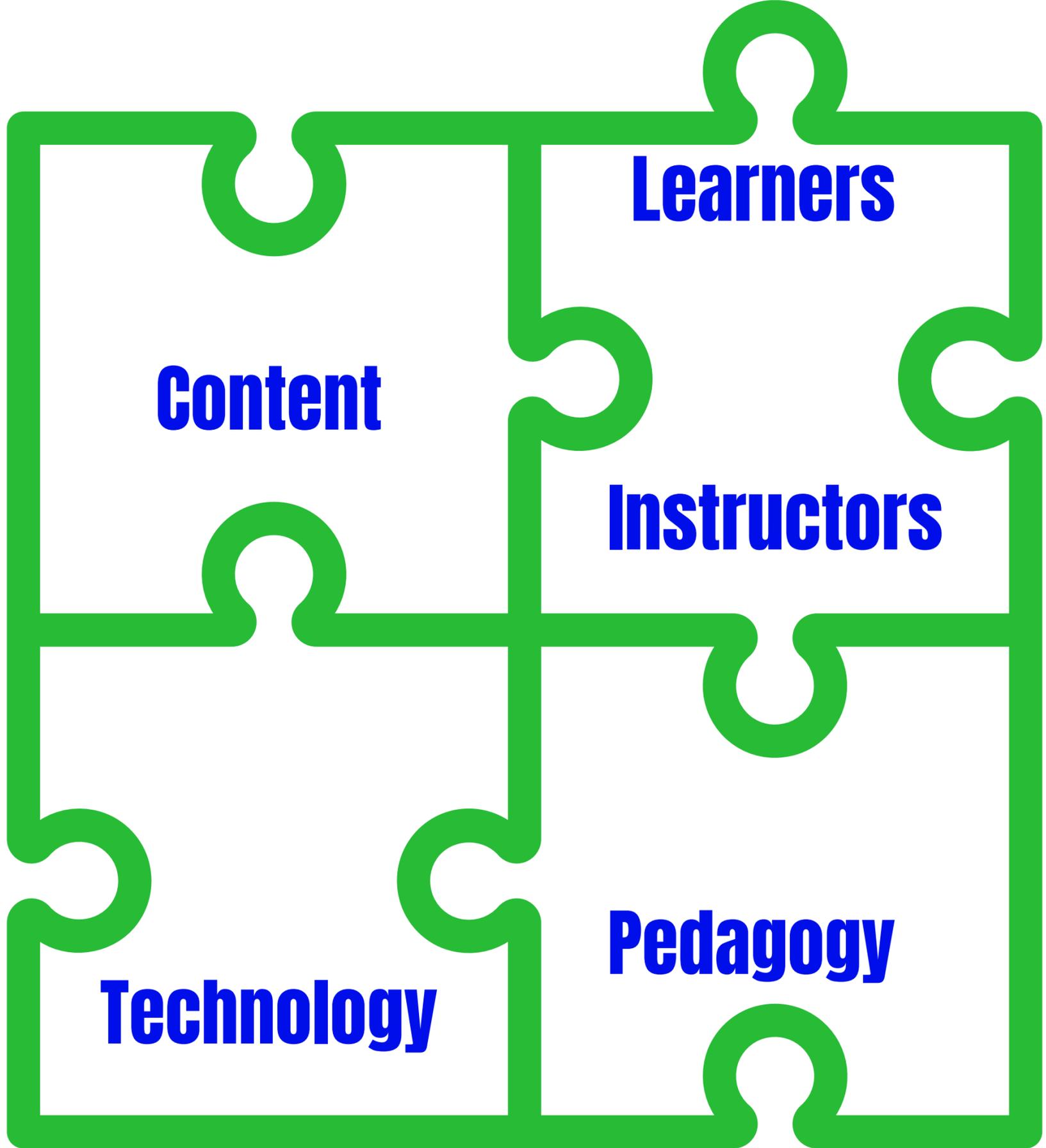
Creating educational experiences that recognize and integrate the intricate interplay between digital technologies and human practices in a world where the digital is no longer perceived as separate or novel.

Acknowledges a society where digital technologies are seamlessly embedded into everyday life, so much so, that even without technological devices every journey becomes a postdigital learning journey (Bissell et al. 2025).

The number of people who take an online course will rise to as many as 57 million people by 2027

63% of students choose to study online because of the flexibility

30% get an online degree to start a new, better paying career



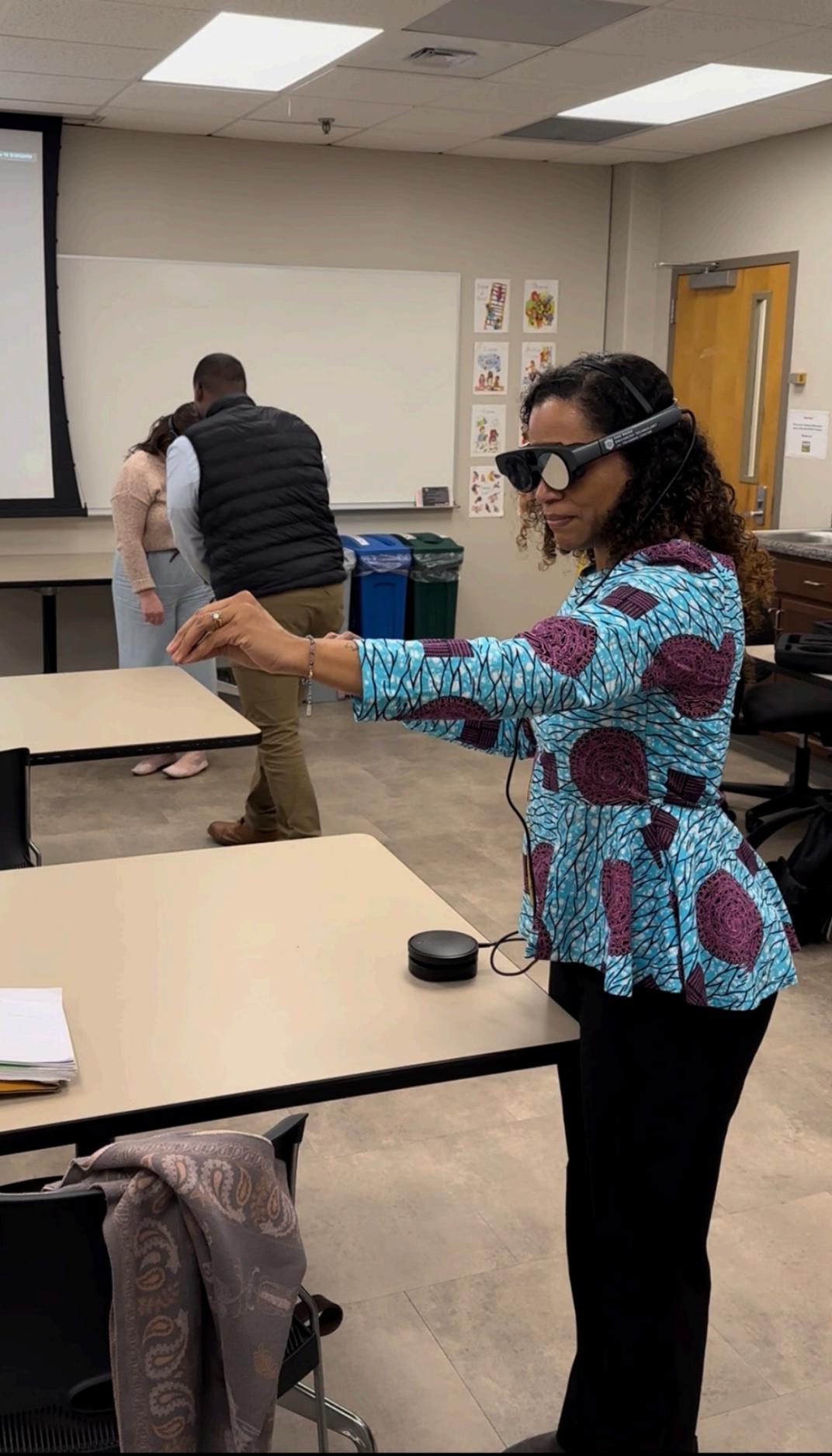




Fig.2 Teacher leading a VR lesson in the kitchen scene, using various teacher tools provided by the platform to facilitate the lesson

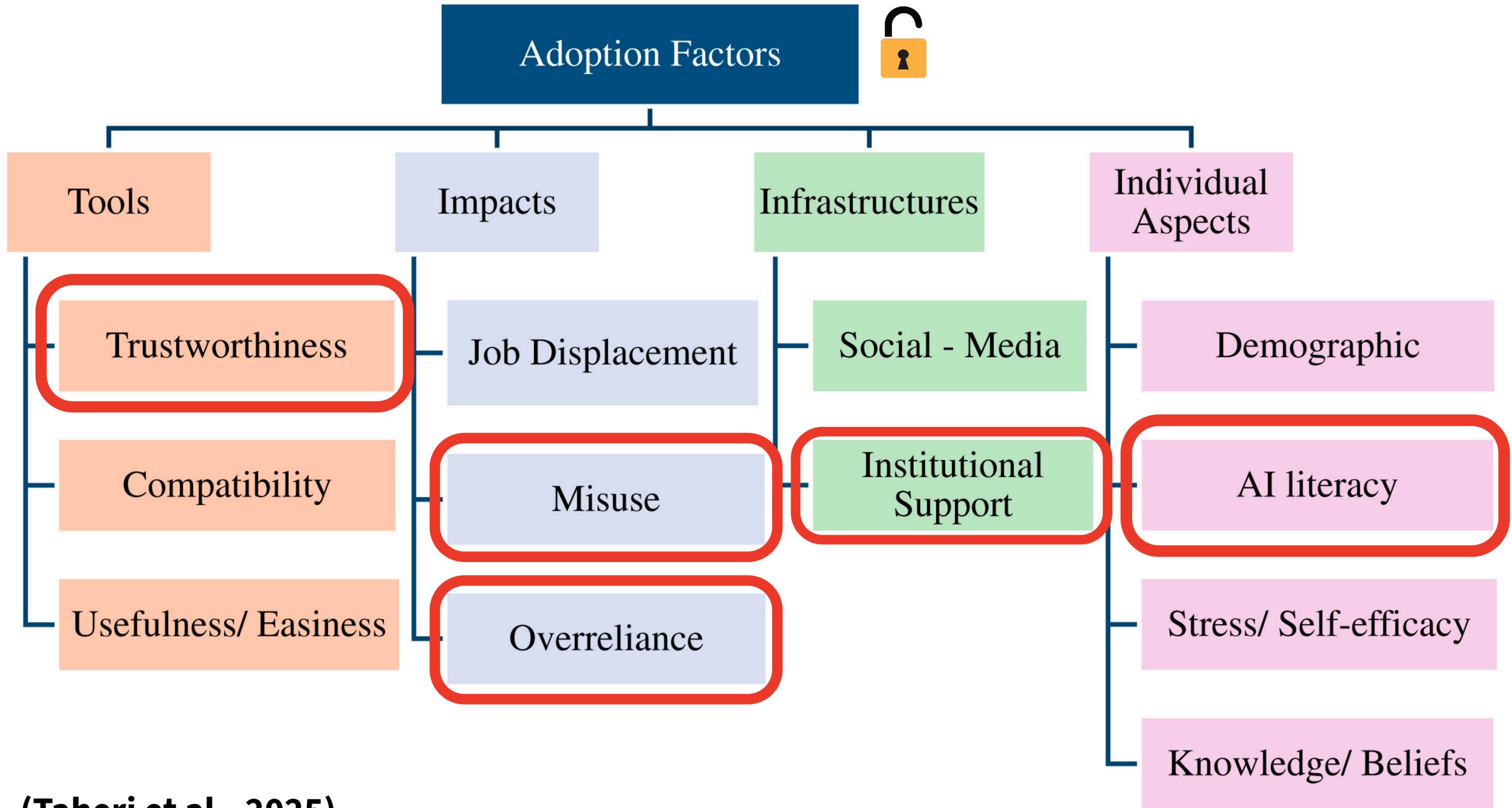
Fig.3 AI role-play in the fast-food restaurant



Table 2 Barriers noted by Fransson et al. (2020) with our strategies addressing them

Barriers	Specific examples	Our strategies to overcome barriers	Outcomes of strategies
Teachers' competencies, professional development, trust	<ol style="list-style-type: none"> 1. Establish partnerships with schools and teachers 2. Identify language teachers interested in using VR technology 	<ol style="list-style-type: none"> 1. Meet with administrators, IT teams, teachers 2. Offer multiple training sessions with 2-5 teachers 	<ol style="list-style-type: none"> 1. Long process but ultimately succeeded 2. Face-to-face meetings built trust
Economy and technology	<ol style="list-style-type: none"> 1. Need for and maintenance of costly hardware 2. Need for safe storage of equipment 3. Functionality issues (e.g., Wi-Fi firewalls, bandwidth) 	<ol style="list-style-type: none"> 1. VR headsets and software were gifted to schools 2. Re-purposed available storage units 3. Work closely with IT departments 	<ol style="list-style-type: none"> 1. Immediate challenges overcome 2. Long-term sustainability in question 3. Partially successful, but more reliable headsets needed
Initial learning barriers: training teachers and students	<ol style="list-style-type: none"> 1. Extensive teacher training may be necessary 2. Pedagogical integration is also necessary 3. Training students 	<ol style="list-style-type: none"> 1. Teacher training spanned several months 2. VR team members co-taught with classroom teachers 3. Training of students separate from teacher training 	<ol style="list-style-type: none"> 1. Teachers appreciated the extensive technical training 2. Teachers collaborated with team on lesson planning 3. Students learned quickly
Organization and practical enactment for teaching and learning	<ol style="list-style-type: none"> 1. In-class technical assistance necessary; limits regarding simultaneous use of VR headsets 2. Other difficulties, e.g., physical classroom setup, "motion sickness" 	<ol style="list-style-type: none"> 1. Team members were present whenever VR was used 2. Alternative activities were designed for those who could not use HiVR equipment 	<ol style="list-style-type: none"> 1. Some measure of success in implementing classroom activities 2. Long-term sustainability will require close collaboration among all stakeholders, including IT personnel
Curricula, syllabi, and expected learning outcomes	<ol style="list-style-type: none"> 1. Need to align teachers' mandated curricula with new technology use 2. Teachers often needed to create new materials 	<ol style="list-style-type: none"> 1. Team collaborated with individual teachers at each site 2. Team assisted with creation of new lessons 	<ol style="list-style-type: none"> 1. Limited buy-in from teachers due to these barriers 2. Ongoing, sustained teacher training necessary





(Taheri et al., 2025)

People

Students' complicated relationship with AI: 'Avoiding using it probably put me at a bit of a disadvantage'

As students press into the academic year, there are strong feelings about whether artificial intelligence should play a role in their education



SPECIAL SERIES
Learning in the age of AI

College students, professors are making their own AI rules. They don't always agree

MARCH 3, 2026 · 5:00 AM ET

Lee V. Gaines



LA Johnson/NPR

For English professor Dan Cryer, using generative artificial intelligence to write a college essay is like bringing a forklift to the gym.

"If all we needed was the weights moved, then that would be great," says Cryer, who teaches at Johnson County Community College outside Kansas City, Kansas.

The Generative AI Inclusion Threshold Framework (GAiIT)

5 Levels

Simple and easily defined for instructors to include to limit or expand on AI inclusion.

Samples

See worked out examples of each GAiIT Level and ideas to use AI with students.

Ai Ethics

Discussion points on the proper use of AI and when AI is appropriate to use and when it is not.

GAiIT Level Icons

Download GAiIT level icons to use with your assignments.

[Download GAiIT Icons](#)

Download the GAiIT Doc

Download the complete explanation of the GAiIT framework and now can be applied in a variety of academic environments.

[Download GAiIT Framework PDF](#)

Discussions about GAiIT

Join one of many discussions about how GAiIT solves problems involving AI inclusion or exclusion from academic work and best practices for addressing academic trust issues.

What is "Bona Fide"?

One of the GAiIT foundational philosophies is based on this idea the cornerstone for dealing with academic dishonesty.

[More on Bona Fide](#)

A Visionary Framework for Human-Centered Innovation in Teaching, Learning, and Research

Principles, Practices, and Commitments for Ethical, Equitable, and Innovative Education

2026

INDIANA UNIVERSITY SCHOOL OF EDUCATION

ACTION	SUGGESTED RESPONSIBLE PARTY	STATUS
Include AI policy on syllabus and Canvas	Faculty/Graduate instructors	<input type="checkbox"/>
Develop assignment-specific AI guidelines (Tiers 1–3)		
Provide exemplar use cases for students		
Discuss AI ethics in Week 1		
Use IU-vetted tools for official work	Faculty/Staff	<input type="checkbox"/>
Conduct critical review of AI-assisted research findings	All Faculty fellow	<input type="checkbox"/>
Ensure ethical data management and privacy in projects that may use AI tools	Faculty	<input type="checkbox"/>
Document AI contributions in research manuscripts (APA 7th edition)	Faculty	<input type="checkbox"/>

The GAiIT Level Break down

G:5 No Ai

G:4 Basic Ai

G:3 Limited Ai

G:2 Ai Collaborate

G:1 Ai Full Inclusion

<https://thegaiitframework.org>

U.S. Department of Labor's AI Literacy Framework

Foundational Content Areas of AI Literacy

1

Understand AI Principles

Understanding AI's core concepts, capabilities, and limitations, creating the foundation for effective use

2

Explore AI Uses

Directly exploring different AI tools and relevant use cases, and how AI can complement human expertise

3

Direct AI Effectively

Understanding how to provide the right context to AI and how to create clear prompts that produce effective outputs

4

Evaluate AI Outputs

Assessing AI-generated results for accuracy and relevance, and understanding how to iterate on AI outputs

5

Use AI Responsibly

Using AI in ethical and secure ways, protecting critical information, and ensuring accountability for outcomes

Effective Delivery Principles of AI Literacy

1

Enable Experiential Learning

Delivering AI literacy through practical, hands-on experiences that allow AI skills to be practiced in real-world situations

2

Embed Learning in Context

Integrating into existing processes and in the context of the industry or characteristics that make it most actionable

3

Build Complementary Human Skills

Using AI to augment human skills such as judgment, creativity, communication, and problem-solving

4

Address Prerequisites to AI Literacy

Addressing barriers to participation and success with AI literacy, including digital literacy and broadband access

5

Create Pathways for Continued Learning

Providing structured routes to progress to more advanced, specialized AI skills and AI-related occupations

6

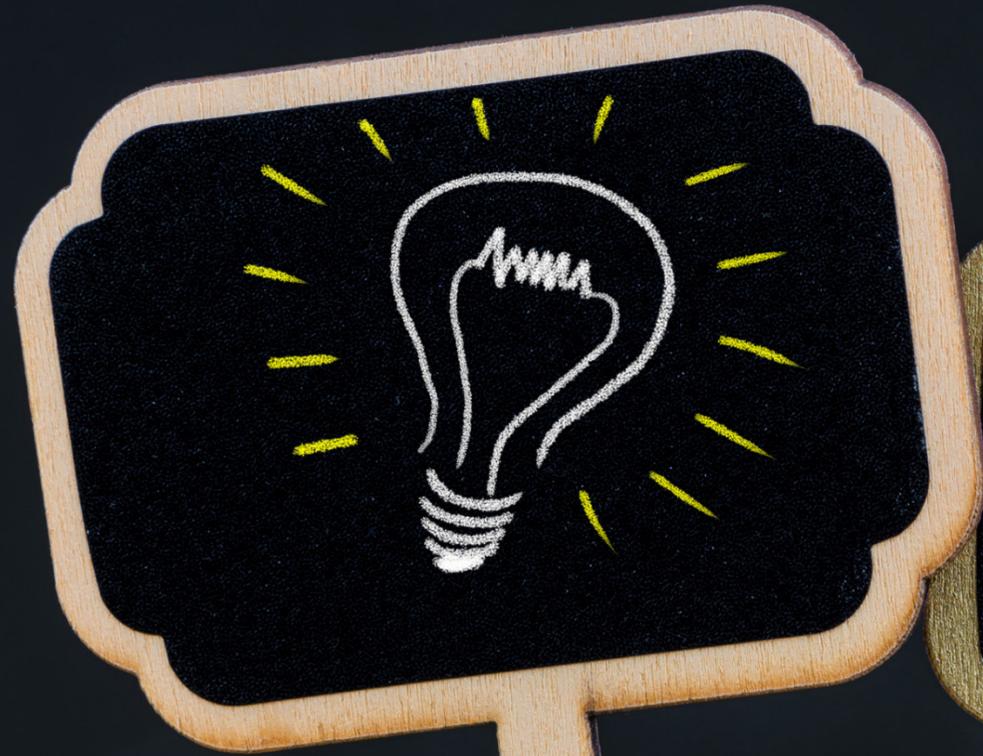
Prepare Enabling Roles

Equipping managers, counselors, and others who play a supportive role to a participant's AI learning

7

Design for Agility

Ensuring there are proactive, built-in mechanisms to rapidly update content and delivery as AI capabilities evolve



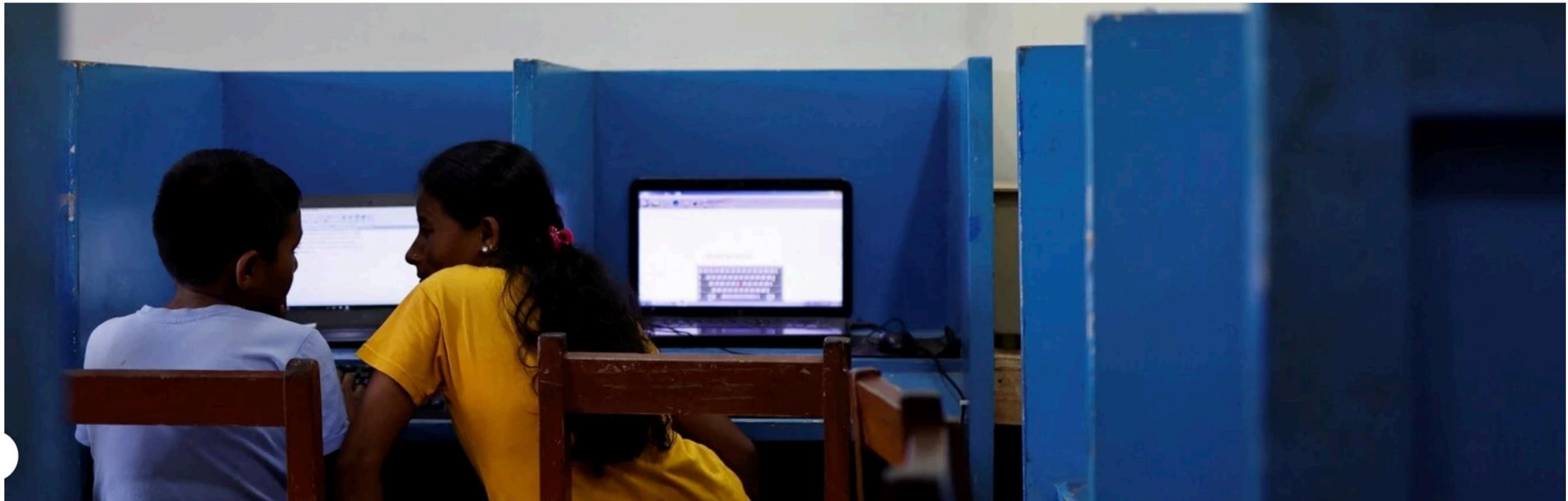
CRITICAL

ISSUES

INNOVATION

About 2.5 billion people lack internet access: How connectivity can unlock their potential

Sep 25, 2024



Governments, industries and academic institutions must work together!



Educational Communications and Technology:
Issues and Innovations

Vanessa Dennen ·
Camille Dickson-Deane · Xun Ge ·
Dirk Ifenthaler · Sahana Murthy ·
Jennifer C. Richardson *Editors*

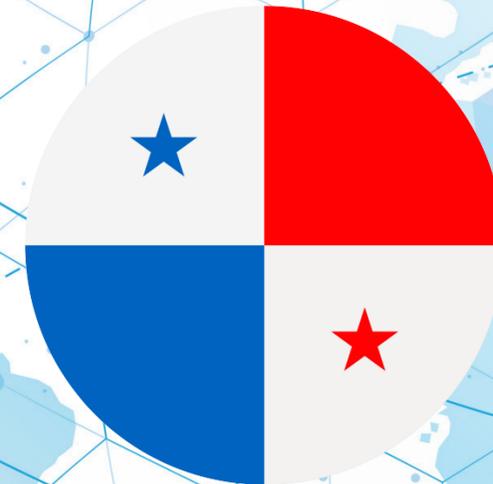
Global Perspectives on Educational Innovations for Emergency Situations

AECT

OPEN ACCESS

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Mobile Learning for Emergency Situations Four Design Cases from Latin America



- ✗ **Negative impact on self-esteem**
- ✗ **Social media burnout**
- ✗ **Stress**
- ✗ **Lack of emotional regulation**
- ✗ **Development of social anxiety due to decreased real-life social interactions**

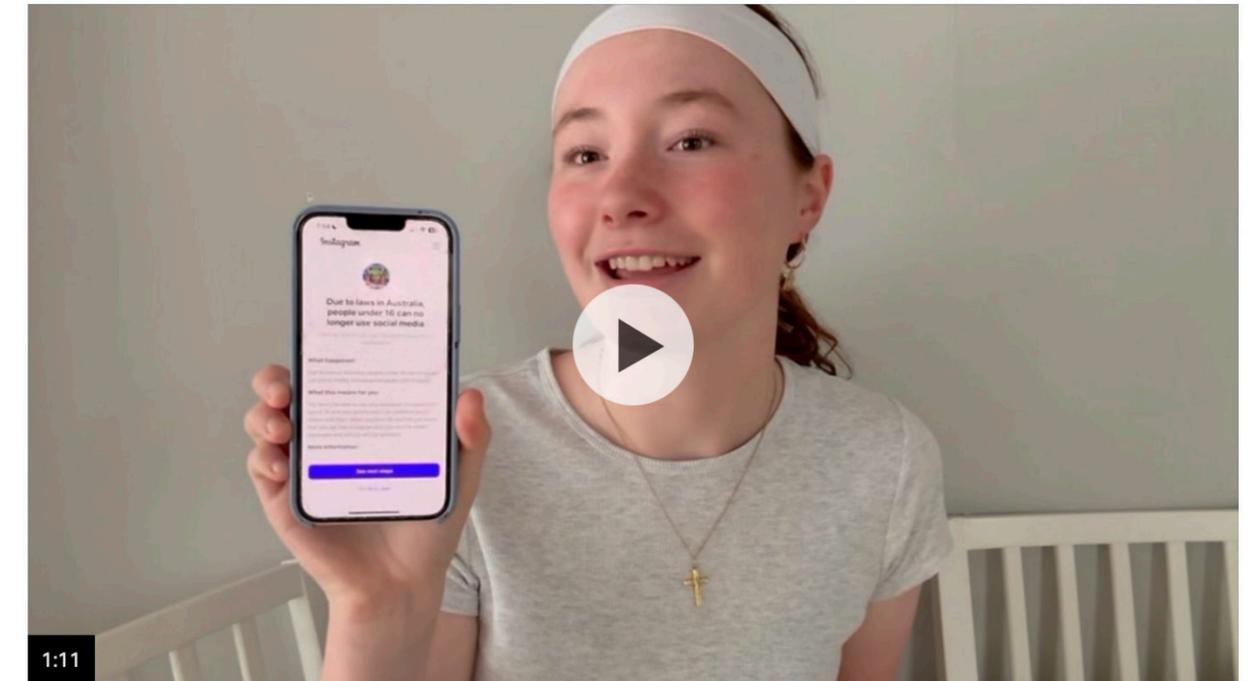
(Zubair et al., 2023)

Australia has banned social media for kids under 16. How will it work?

10 December 2025

Share  Save 

Helen Livingstone
Sydney



Under-16s in Australia are now banned from using major social media services including Tiktok, X, Facebook, Instagram, YouTube, Snapchat and Threads.

They cannot set up new accounts and existing profiles are being deactivated.

The ban is the first of its kind and is being watched closely by other countries.



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I research the harm that can come to teenagers on social media. I don't support a ban

Published: January 21, 2026 9:09am EST
Rawpixel.com/Shutterstock

 The UK government has launched a consultation on introducing an Australian-style ban on social media for under-16s. The proposal is framed as a bold response to rising concerns about young people's mental health, online abuse and exposure to harmful content.

 At first glance, a ban sounds straightforward: keep children away from platforms that can cause harm. But as someone who has spent years researching [young people's digital lives](#), relationships and wellbeing, I believe that a blanket ban risks misunderstanding both the problem and the solution.

My [research](#) with teenagers consistently shows that the harms young people experience online [are not separate](#) from the harms they face offline. Bullying, racism, sexism, coercion, exclusion and body image pressures all pre-date social media. Digital platforms can amplify these problems, but they do not create them from scratch.

In [focus groups](#) I conducted with teenagers and [research I carried out](#) with young people during the pandemic, participants described online life as an extension of school corridors, peer groups and local communities. This is what scholars increasingly call a "post-digital" reality. Young people do not experience online and offline as separate worlds, but as a single, interconnected continuum.

If harms are socially rooted, then technical restrictions alone are [unlikely to solve them](#). A ban treats social media as the problem, rather than asking deeper questions about why certain behaviours – harassment, shaming, misogyny, exploitation – occur in the first place.

We also need to ask why digital spaces have become the default arenas for meeting so many needs in the first place. Over years of funding cuts to youth services, reduced community spaces and intensified academic pressures, online platforms have filled a gap.

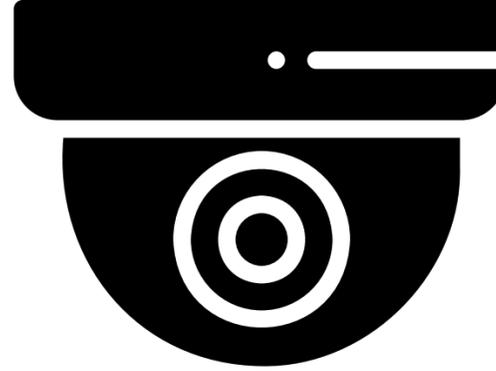
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Associate Professor in Criminology, University of Surrey

Disclosure statement
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Surveillance

EDUCATION

Teachers are using software to see if students used AI. What happens when it's wrong?

DECEMBER 16, 2025 · 5:00 AM ET

HEARD ON ALL THINGS CONSIDERED

 Lee V. Gaines

 6-Minute Listen

+ PLAYLIST

≡ TRANSCRIPT

⋮



Ailsa Ostovitz, left, and her mother, Stephanie Rizk, at their home in the Maryland suburbs of Washington, D.C. In mid-November, Rizk met with Ostovitz's teachers to discuss accusations that her daughter had used AI to do some of her schoolwork.

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OpenAI

OpenAI amends Pentagon deal as Sam Altman admits it looks 'sloppy'

ChatGPT owner's CEO says it will bar its technology being used for mass surveillance or by intelligence services

[Business live - latest updates](#)

Dan Milmo and Robert Booth
Tue 3 Mar 2026 06.35 EST

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 Prefer the Guardian on Google



 The use of AI by the US military has alarmed employees at OpenAI and Google, who have called on their bosses to refuse to let their products be used for surveillance. Photograph: Samuel Boivin/NurPhoto/Shutterstock

OpenAI is amending its hastily arranged deal to supply artificial intelligence to the US Department of War (DoW) after the ChatGPT owner's chief executive admitted it looked "opportunistic and sloppy".

The contract prompted fears the San Francisco startup's AI could be used for domestic mass surveillance but its boss, Sam Altman, said on Monday night the startup would explicitly bar its technology from being used for that purpose or being deployed by defence department intelligence agencies such as the National Security Agency (NSA).

Other concerns...

Internet

Google, Amazon, Meta, Apple, and Microsoft (GAMAM) - Statistics & Facts

The modern technology landscape is profoundly shaped by the five tech giants Google (Alphabet), Amazon, Meta (formerly Facebook), Apple, and Microsoft—known collectively as GAMAM. These companies, with a [combined revenue exceeding 1.5 trillion U.S. dollars in 2024](#), operate across nearly every continent, with significant revenue streams from North America, Europe, and Asia-Pacific. From their origins in search, e-commerce, social media, consumer electronics, and software, each company has diversified. In which markets and sectors do they play a crucial role? And how are they dealing with new opportunities and challenges, mainly the rise of artificial intelligence?

Show more

Published by [Lionel Sujay Vailshery](#), Dec 17, 2025

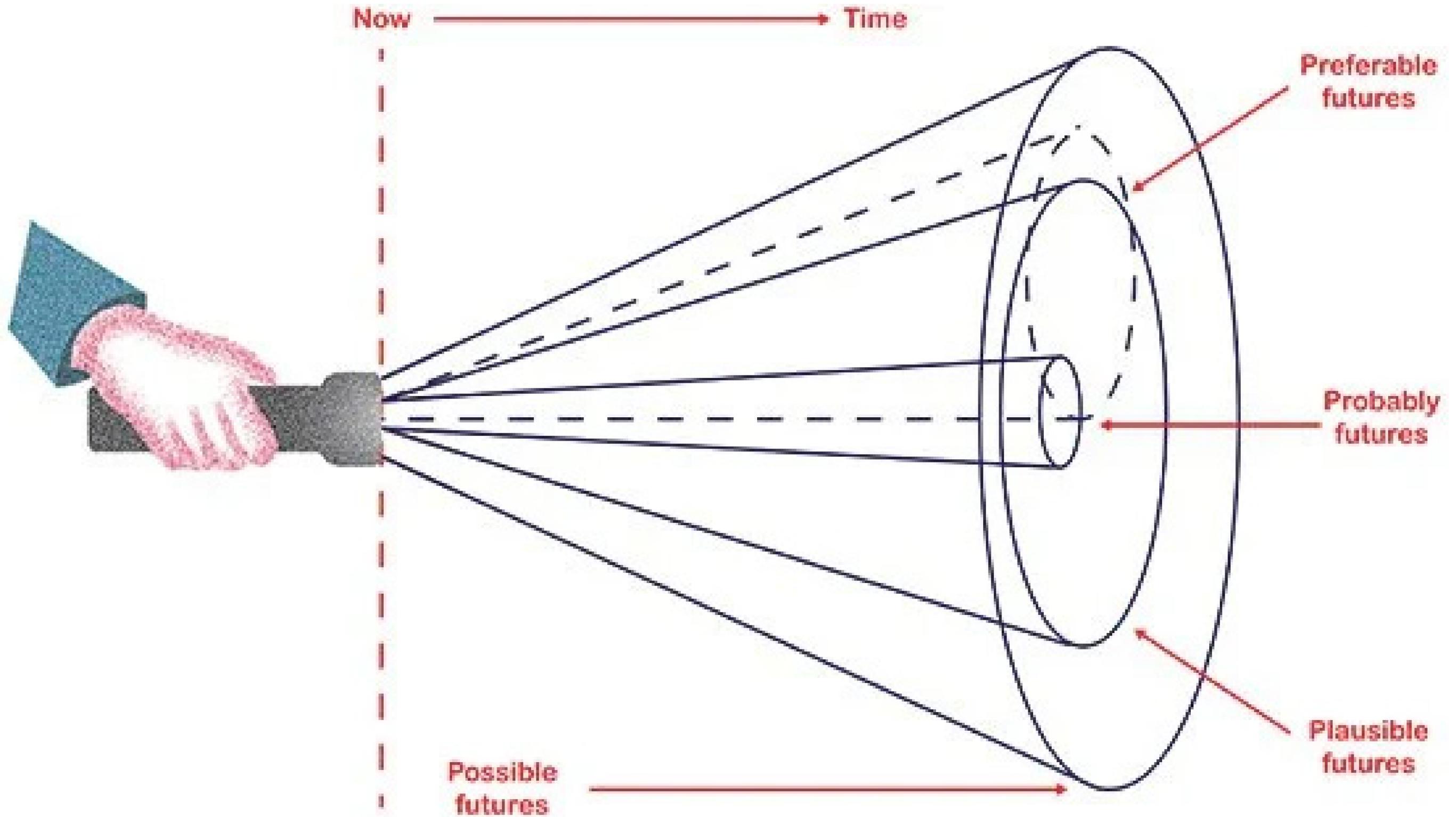
Big Tech



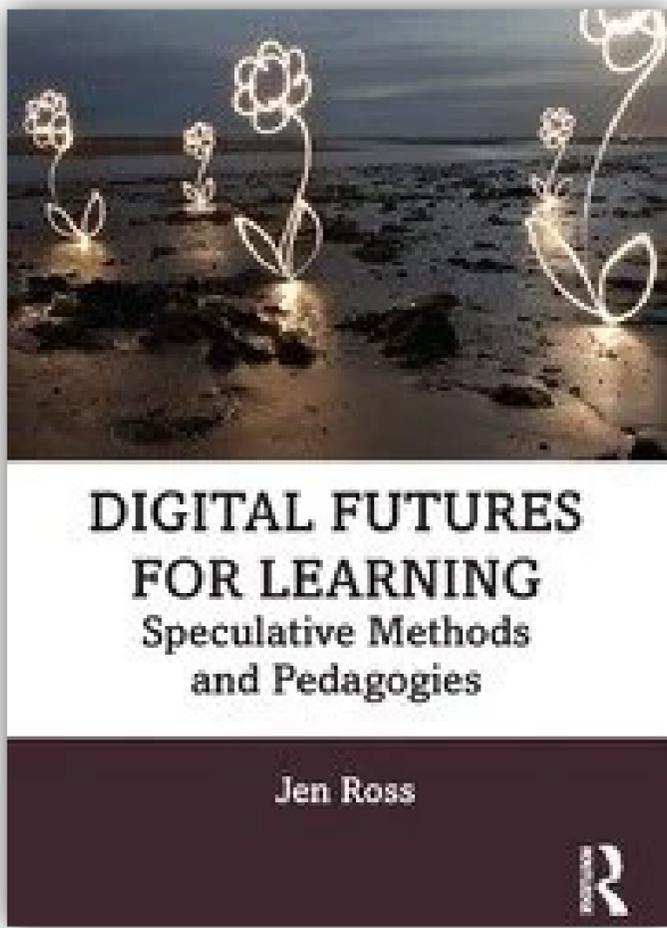
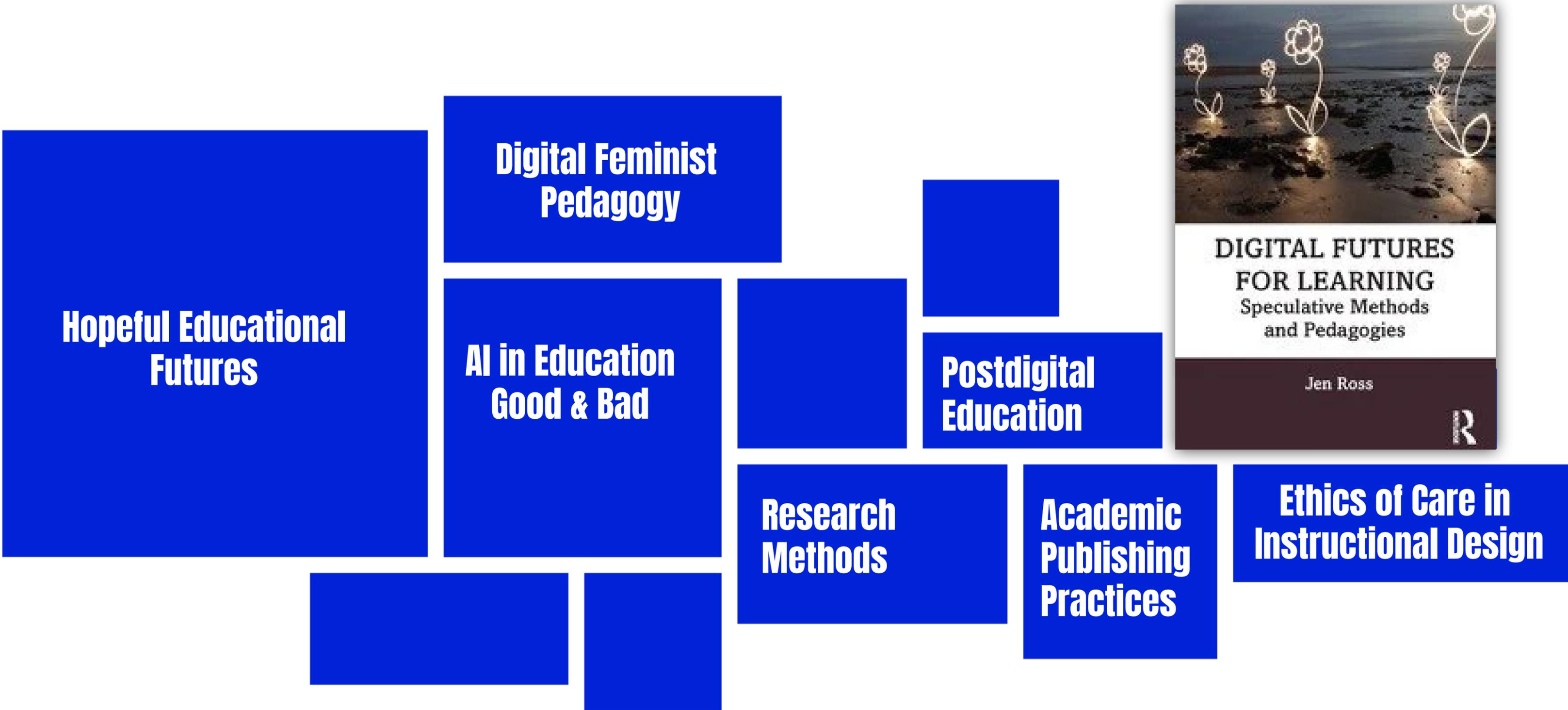
It is the year 2126

These systems were redesigned, what do they look like?





(Hancock & Bezold, 1994)



Speculative Methods

(Houlden & Veletsianos, 2023; Jandrić & Hayes, 2020; Bozkurt et al., 2023; Costello et al., 2022; Romero-Hall et al., 2021; Williamson et al., 2024; Romero-Hall et al., 2025; Ross, 2022)

Speculative Futures on ChatGPT and Generative Artificial Intelligence (AI): A Collective Reflection from the Educational Landscape

Aras Bozkurt, Junhong Xiao, Sarah Lambert, Angelica Pazurek, Helen Crompton, Suzan Koseoglu, Robert Farrow, Melissa Bond, Chrissi Nerantzi, Sarah Honeychurch, Maha Bali, Jon Dron, Kamran Mir, Bonnie Stewart, Eamon Costello, Jon Mason, Christian M. Stracke, Enilda Romero-Hall, Apostolos Koutropoulos, Cathy Mae Toquero, Lenandiar Singh, Ahmed Tlili, Kyungmee Lee, Mark Nichols, Ebba Ossiannilsson, Mark Brown, Valerie Irvine, Juliana Elisa Raffaghelli, Gema Santos-Hermosa, Orna Farrell, Taskeen Adam, Ying Li Thong, Sunagul Sani-Bozkurt, Ramesh C. Sharma, Stefan Hrastinski, Petar Jandric

Abstract: While ChatGPT has recently become very popular, AI has a long history and philosophy. This paper intends to explore the promises and pitfalls of the Generative Pre-trained Transformer (GPT) AI and potentially future technologies by adopting a speculative methodology. Speculative future narratives with a specific focus on educational contexts are provided in an attempt to identify emerging themes and discuss their implications for education in the 21st century. Affordances of (using) AI in Education (AIE) and possible adverse effects are identified and discussed which emerge from the narratives. It is argued that now is the best of times to define human vs AI contribution to education because AI can accomplish more and more educational activities that used to be the prerogative of human educators. Therefore, it is imperative to rethink the respective roles of technology and human educators in education with a future-oriented mindset.

Keywords: artificial intelligence (AI), generative pre-trained transformer (GPT), natural language processing, artificial intelligence in education (AIE), future educational perspectives, speculative methodology

Highlights

What is already known about this topic:

- AI has a long history and philosophy.
- AI has already been widely used in all dimensions of our lives including education.

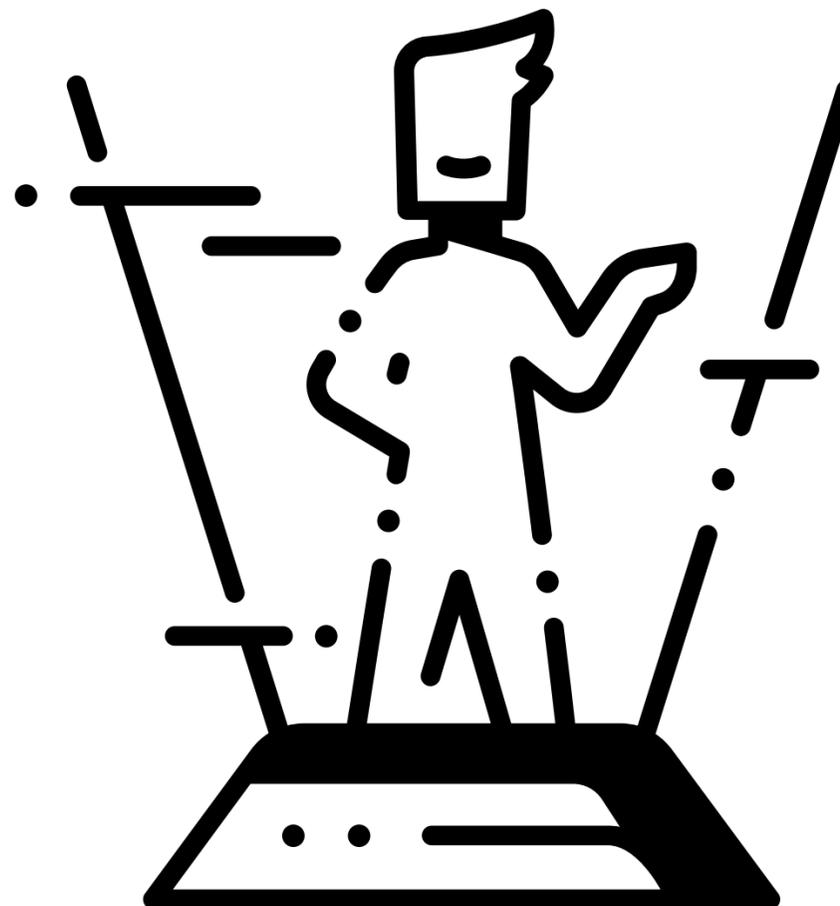
What this paper contributes:

- A collection of speculative future narratives provides possible future AI scenarios and provokes readers to think critically about AI.
- With a specific focus on education, this paper serves as an intellectual exercise on educational uses and limitations of conversational AI.

Implications for theory, practice, and/or policy:

- Innovative ways should be found to adopt AI/GPT technology into education in meaningful, ethical, and sustainable ways.
- There is a need to develop new literacies for AI/GPT technologies.
- Rather than blindly adopting AI/GPT technologies, educators need to develop a critical understanding of their pros and cons.
- The leading role of human educators in education should not be downplayed and the supporting role of technology, no matter how advanced it is, should not be over-exaggerated.

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Positive Speculative Futures "AI Amistades"



Negative Speculative Futures "The Watchtower"

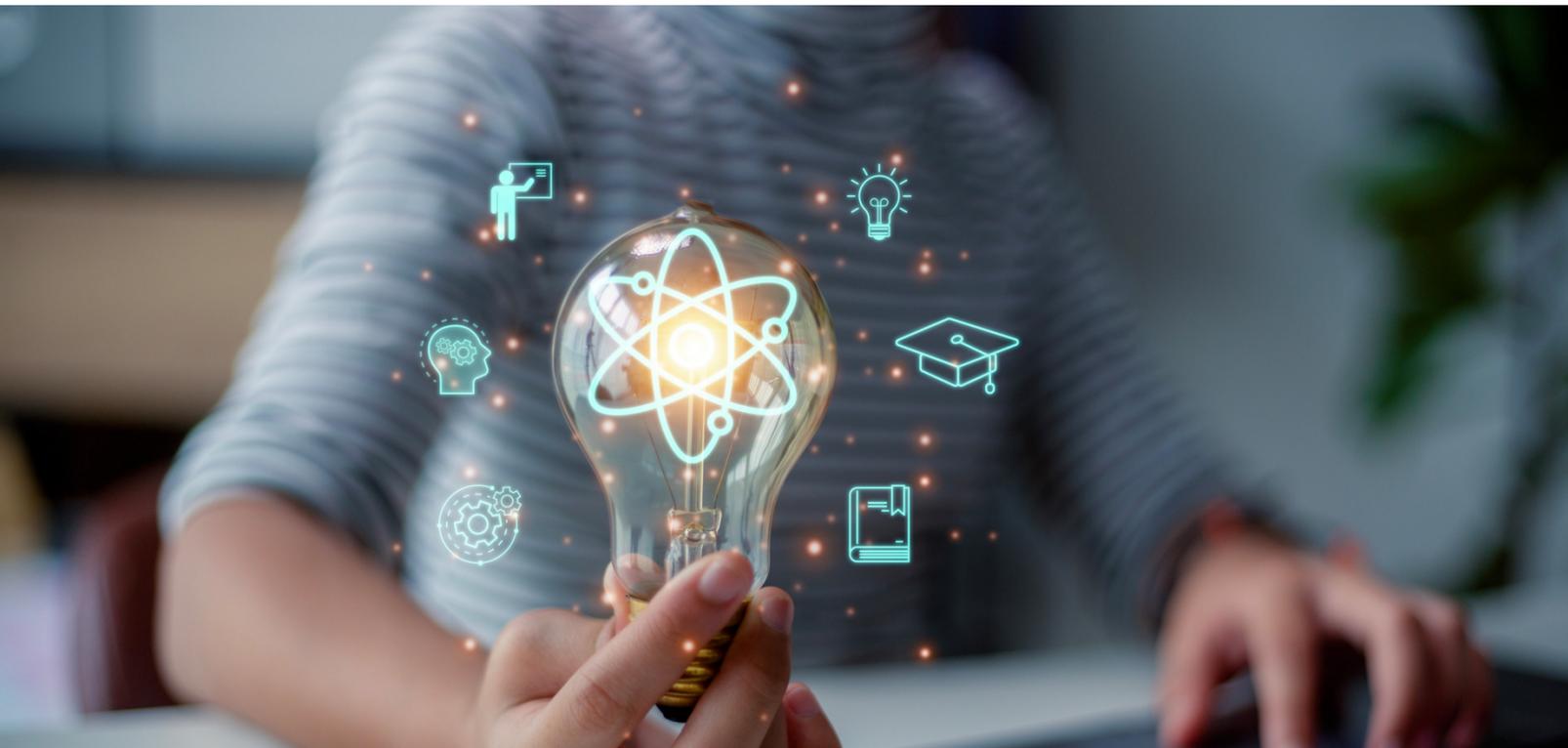


Rahm (2024), however, cautions that while proactively imagining desirable futures is important, it is equally critical to react to and dismantle obstructive realities and their speculative narratives.



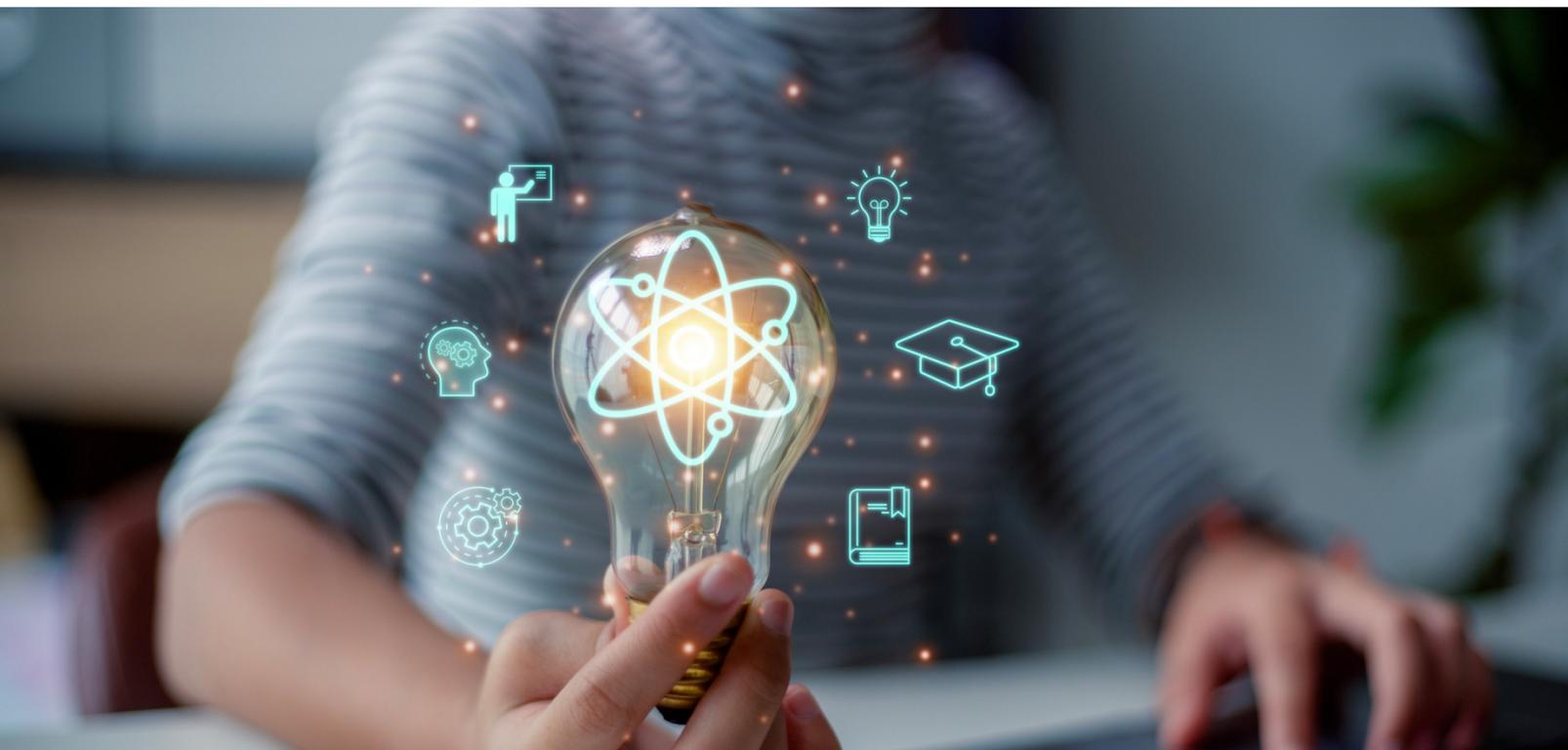


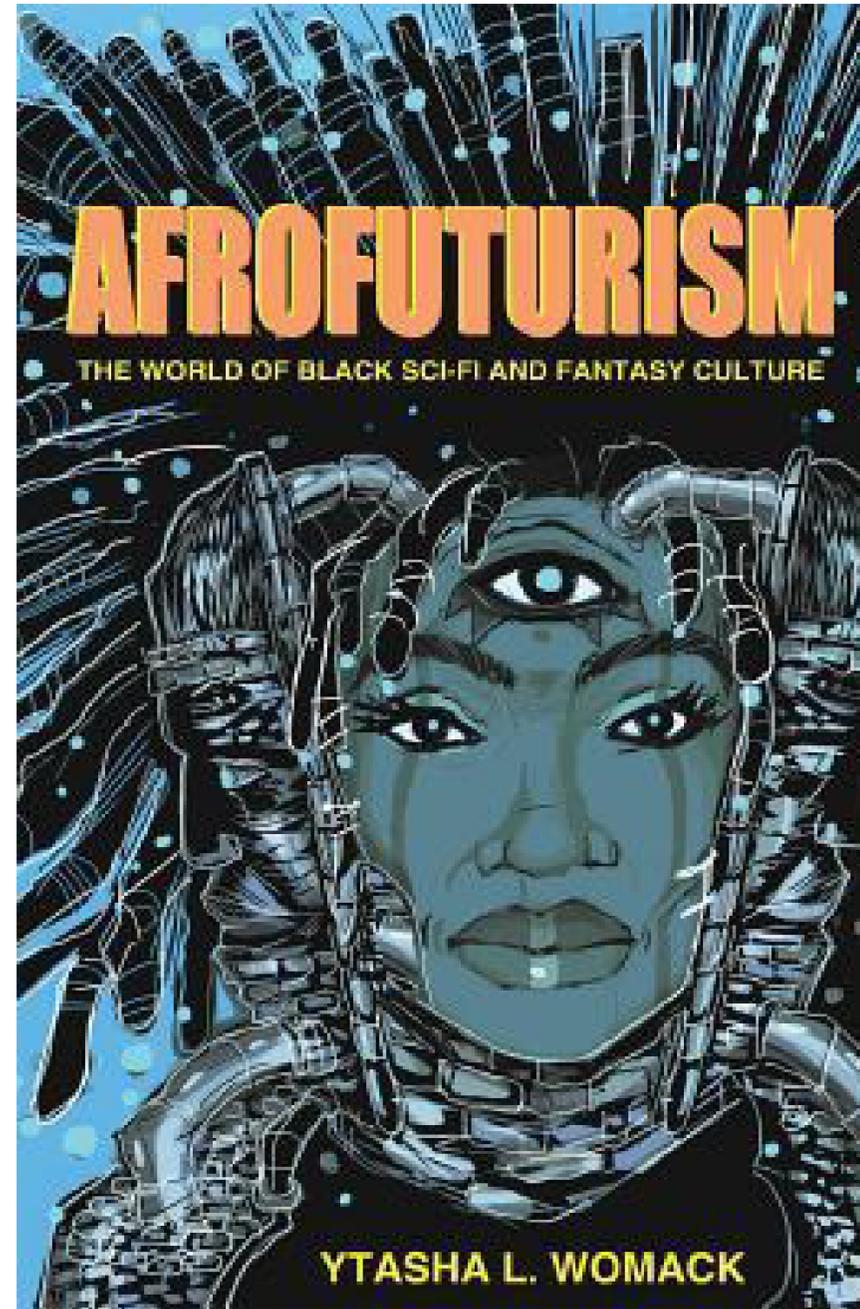
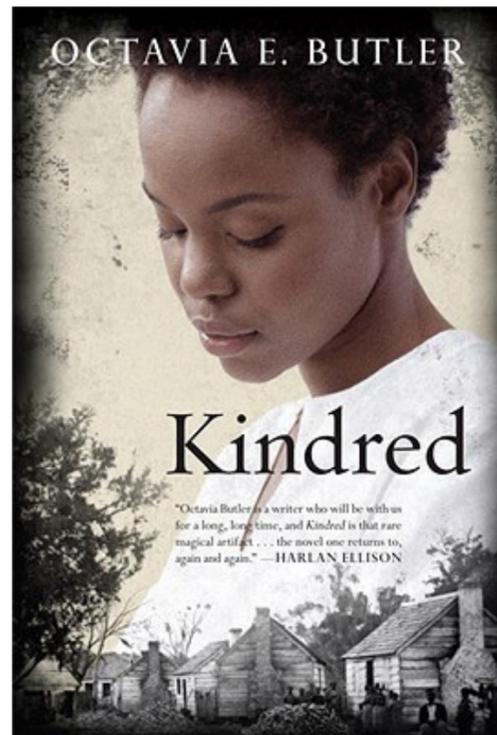
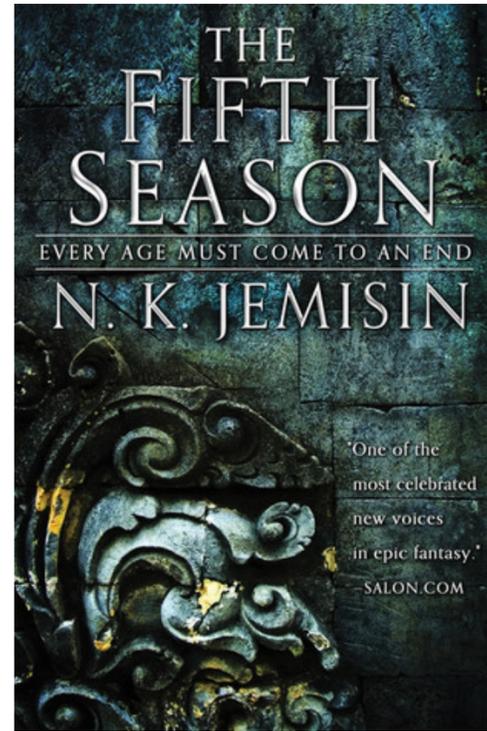
“In the future we are building, learning will be...”





“What needs to be true for the future of learning you described earlier to actually happen?”





Afrofuturistic Speculations

A woman with glasses is looking down at a city skyline at night. The scene is illuminated with warm, golden light from the city lights. Digital data overlays, including lines and dots, are visible on her face and the background. The overall atmosphere is futuristic and focused.

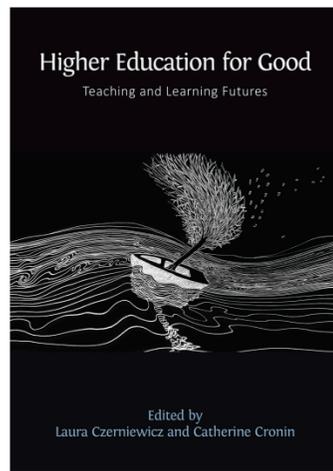
Accountability

Cultural Embodiment

Moral Urgency

Broader Societal Issues

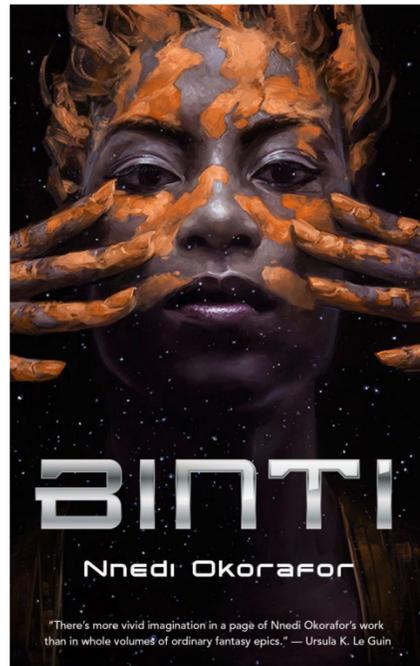
(English, 2024; Jackson & Freeman, 2011; Lavender, 2019; Womack, 2013; Brooks & Anderson, 2025)



19. Imagination and justice: Teaching the future(s) of higher education through Africanfuturist speculative fiction



Felicitas Macgilchrist and Eamon Costello

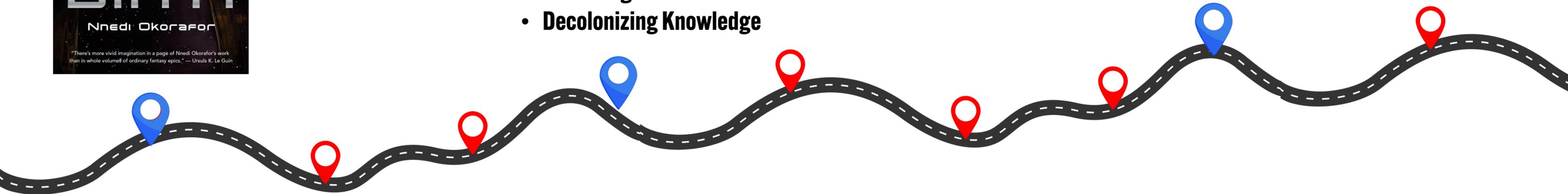


Reflection

- Subjectivation
- Datafication
- Becoming Otherwise
- Decolonizing Knowledge

Imagining Futures

- Utopias
- Dystopias
- Mixed Forms



Pedagogical Approach: Anti-Racist, Anti-Classist, Generous Workshopping



**Can we take this a
step further?**

(Dis)ability

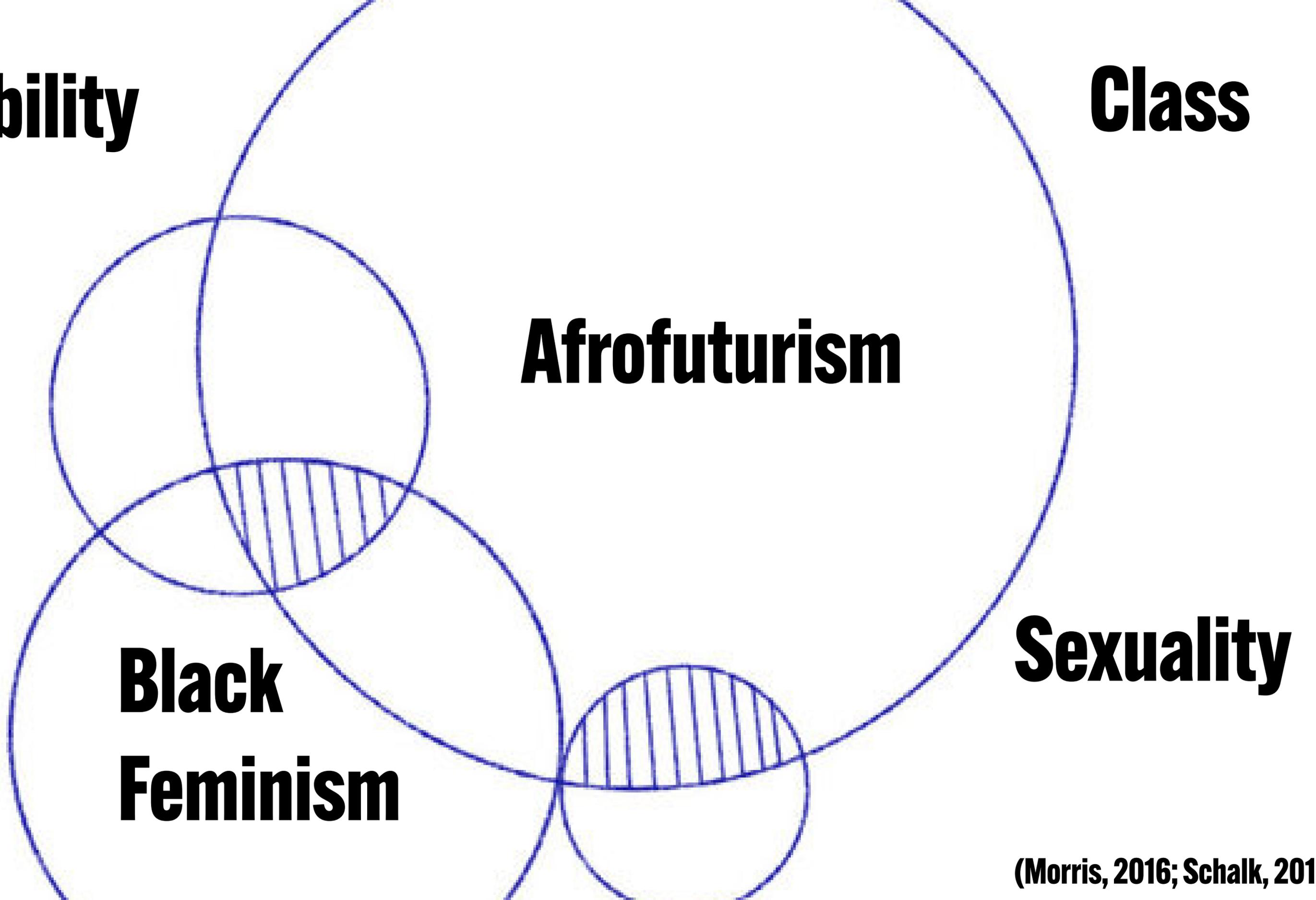
Class

Afrofuturism

Gender

Sexuality

**Black
Feminism**



(Morris, 2016; Schalk, 2018)



Envisioning Futures: Afrofuturist Feminist Perspectives in Postdigital Learning Design

Enilda Romero-Hall¹ · Makhosazana Lunga¹ · Maria V. Luna-Thomas² · Fasika Melese³ · Aviann Antoinette Morris⁴ · Patricia A. Young⁵

Received: 14 May 2025 / Revised: 25 November 2025 / Accepted: 2 December 2025
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Abstract

In this paper, we use speculative methods to envision Afrofuturist feminist perspectives that reimagine postdigital learning design. By critiquing existing power structures within current postdigital learning design practices, we aim to explore transformative futures where these dynamics are fundamentally reshaped. While speculative methods have previously been utilized to investigate potential educational futures in learning design and technology, we believe Afrofuturist feminist speculations offer a distinctive lens that remains underexplored in the field. To address this gap, we, as six Afrofuturist feminist writers identifying as Black (African, African American, African Diaspora) women learning design professionals, crafted speculative narratives blending fictional storytelling with social science fiction. Through these visions, we advocate for a more inclusive, transformative, and sustainable educational ecosystem that enriches the Afro-diaspora while fostering cultural pride and community identity. Although our worldviews and imagined futures are shaped by our individual subjectivities, we believe these differences enhance rather than diminish the value of our contributions, offering diverse insights into future educational ecologies.

Keywords Afrofuturist · Feminism · Postdigital · Learning design · Speculative futures

As we navigate education systems shaped by structural inequities and biased technologies, it is imperative to embolden our radical imagination to envision learning design futures that center historically underserved groups. Across the globe, socio-political turmoil, including civil wars, ethnic violence, genocides, political polarization, and Indigenous land rights disputes, has profoundly impacted our society, including our educational systems (Dutton et al. 2025; Faculty of Education, University of Cambridge, Centre for Lebanese Studies & UNRWA 2024; James and Vigneault-Dubois

Extended author information available on the last page of the article

Published online: 03 February 2026



Dr. Makhosazana Lunga



Maria V. Luna-Thomas



Fasika Melese



Dr. Aviann Morris



Dr. Patricia A. Young

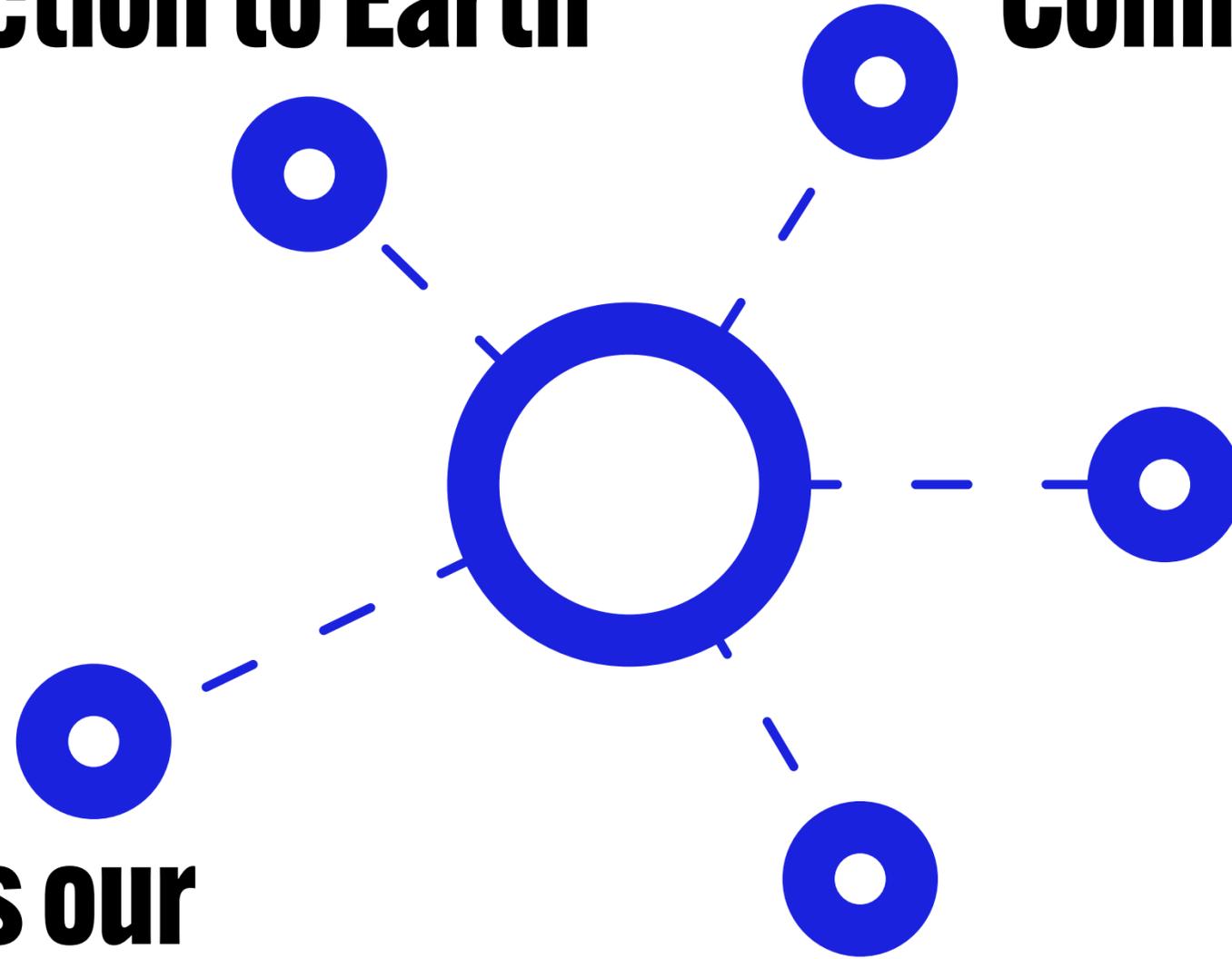
Connection to Earth

Community

**Value of folklore and
ancestral wisdom**

**Equity across our
social identities**

**Disconnecting from
technology & going to basics**





Thank you

SCAN ME!



Slides & References

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