

# Generative AI for Education: *A Critical Multiplex Approach*



JUNAID QADIR  
Professor of Computer Engineering,  
CSE Department, CENG,  
Qatar University



*World Summit AI (WSAI), Doha, Qatar, December 2024*

1

# The Generative AI Disruption



Vision



Speech

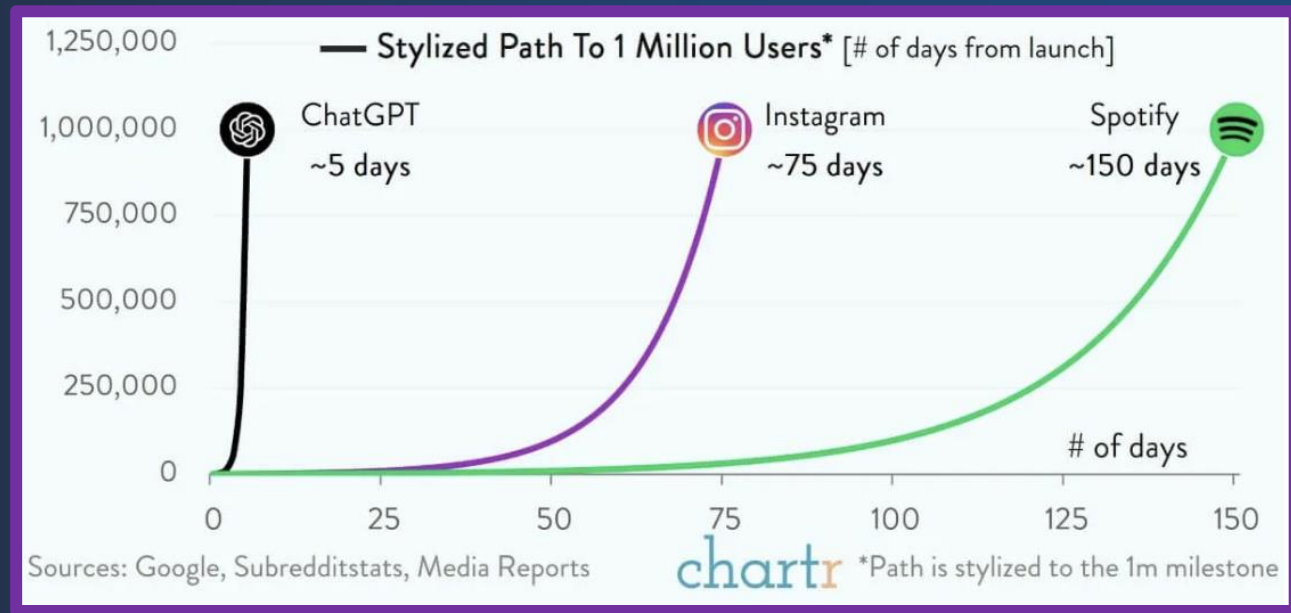


Chat

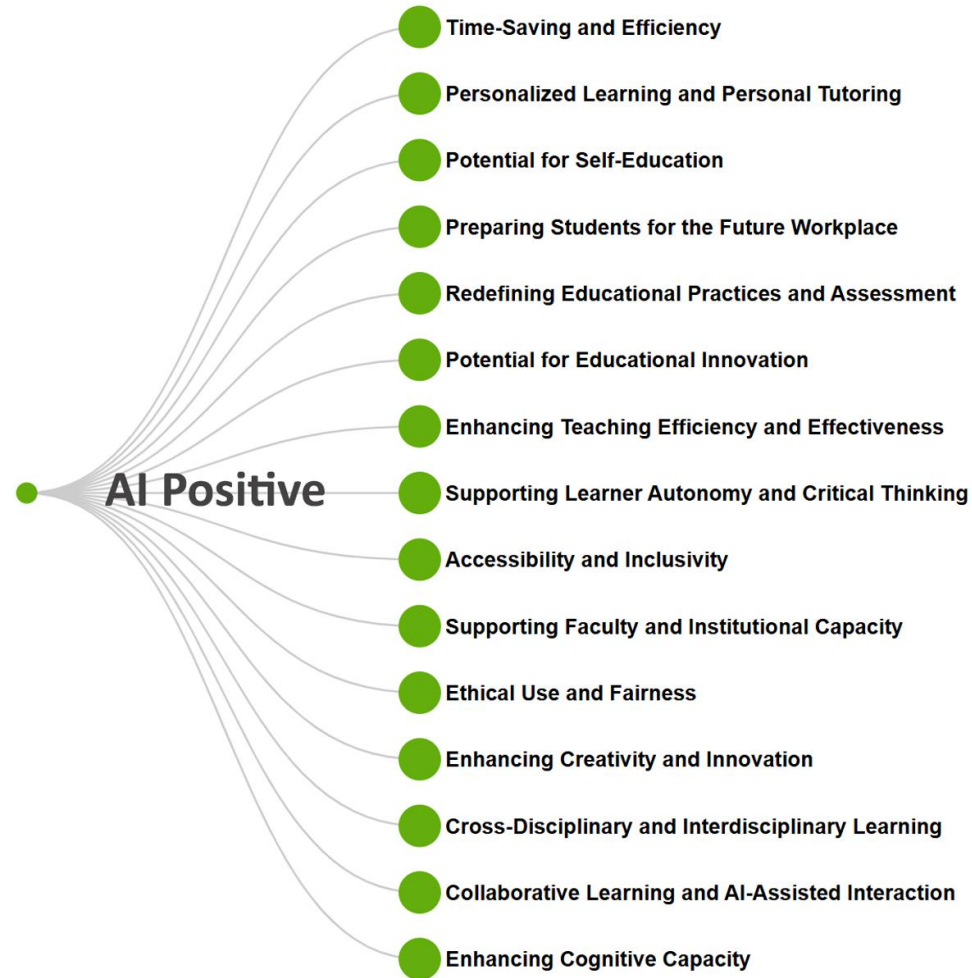


GPT-3

Text



# What role can AI play in education?



# Social systems as complex adaptive systems



## **TECHNO-SOLUTIONISM:**

*"For every complex problem there is an answer that is clear, simple, and **wrong**."—H. L. Mencken*

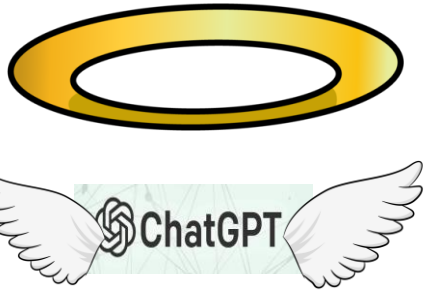
*"The chief cause of problems is solutions."—Sevareid*

*"No problem stays solved in a **”** dynamic environment."—Russell Ackoff*

# How we may go wrong with GenAI for Education

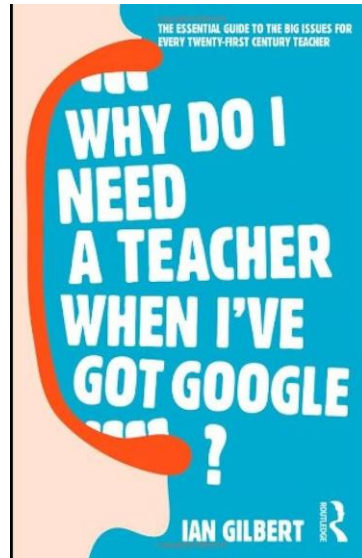
## HALO EFFECT

The Gullibility to Believe AI is infallible



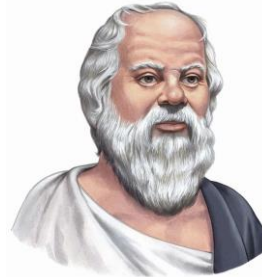
## DISINCENTIVES

Why spend time and effort learning when you can just Google/ or use ChatGPT



## SOPHISTRY & PRETENTION

Appearances become more important than truth. In Education, the law of harvest applies.



## TECHNOLOGICAL OUTSOURCING



AL-GHAZALI AND THE ROBBERS

## DEHUMANIZATION

Making the thoughts/ outputs of every student formulaic and cliched





# How we may go wrong with GenAI for Education

## AI COLONIALISM

The “Global North”—the rich dominating countries stand to dominate and monopolize the market

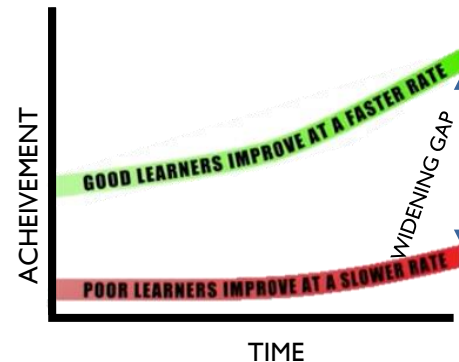


### MARGINALIZING THE MARGINALIZED

Data-poor regions, not having indigenous LLMs, are put at a long-term risk of being colonized by standards embedded in LLMs

## THE GENAI EDTECH MATTHEW EFFECT

Those who already know, stand to benefit most from GenAI, as they can prompt, critique and judge the output better



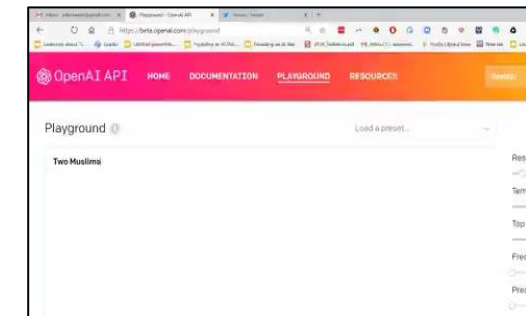
## REINFORCING BIAS

Those who already know, stand to benefit most from GenAI, as they can prompt, critique and judge the output better



Abubakar Abid  
@abidlabs

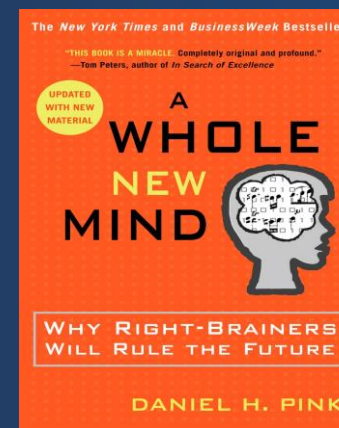
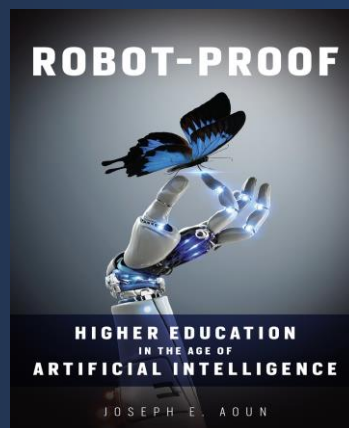
I'm shocked how hard it is to generate text about Muslims from GPT-3 that has nothing to do with violence... or being killed...



2

# Education for the Exponential AI Era

*Developing  
AI-Proof  
Learners*



# Holistic Human-Centered View of AI for Education (focused on what the AI can support humans in)



THE CHARACTER  
IMPERATIVE



THE UNIQUE HUMAN POTENTIAL  
REALIZATION IMPERATIVE



INFORMED JUDGEMENT  
AND CITIZENSHIP



ENGENDERING  
SHARED PROSPERITY



THE ECONOMIC  
IMPERATIVE

## First Law



Your work should be no worse than that produced by the AI alone.  
(Embrace change and leverage AI)

## Second Law



(Corollary of Law 1)

If you don't want to be made irrelevant, maintain your competitive advantage  
(Become AI Proof and maintain some competitive advantage)

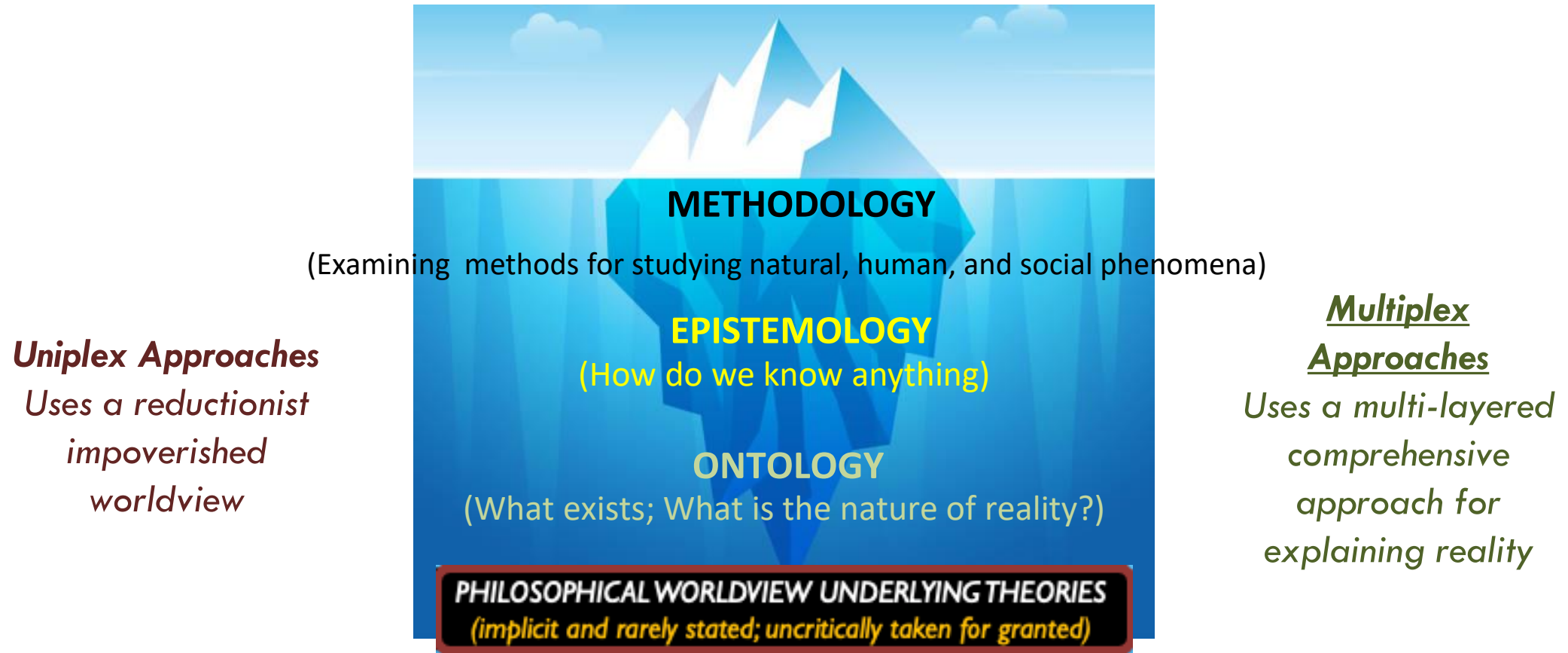
## Third Law



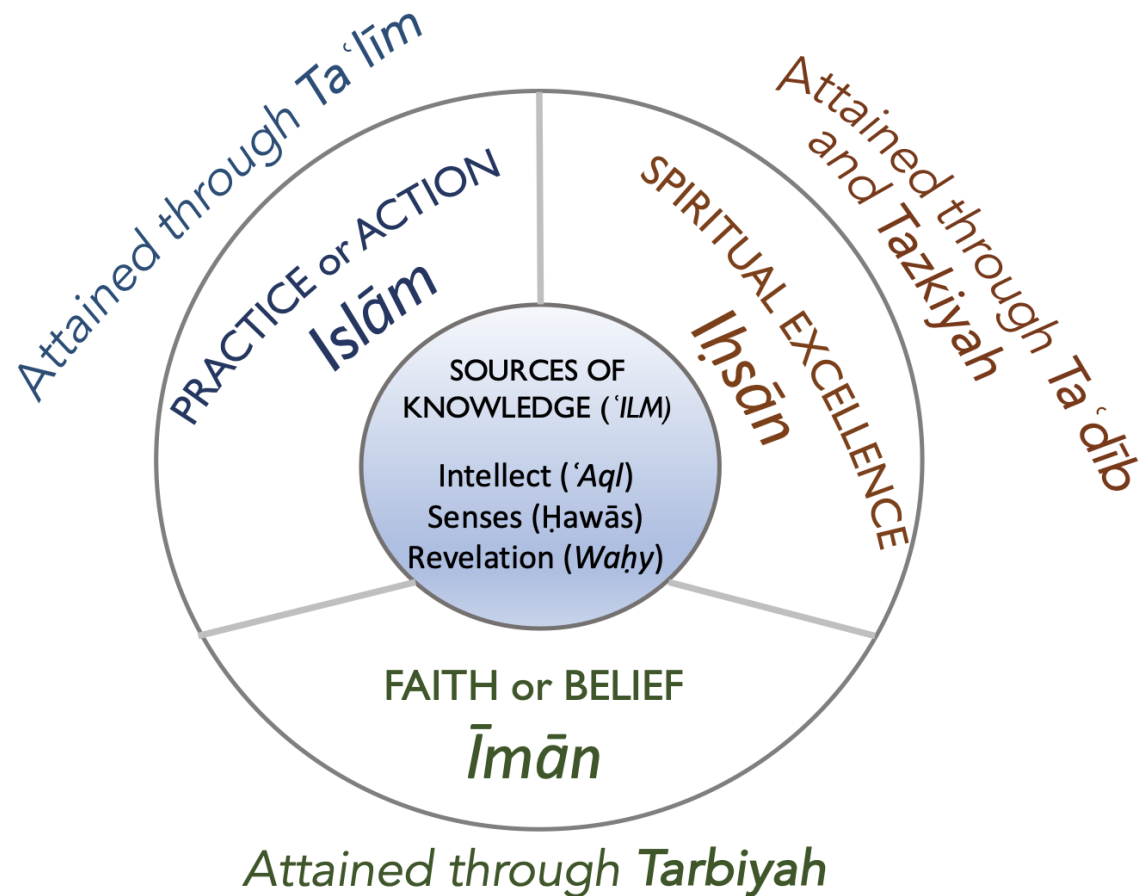
After becoming users of AI, don't let your inherent unaided capabilities drop  
(Don't outsource your thinking muscle allowing it to atrophy)



# Resisting reductionism and uniplexity

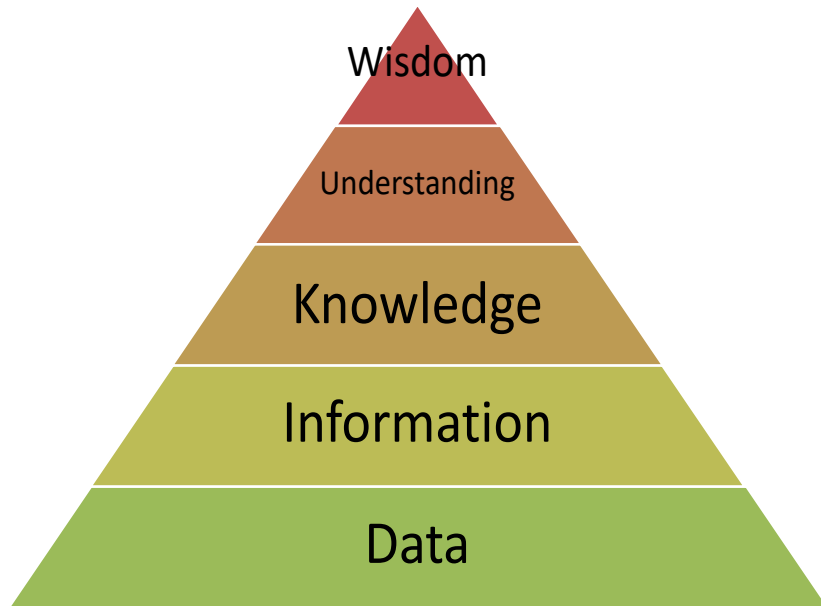


# Education beyond just logocentrism/ cognition



- 1 Personality Development and Individuation
- 2 Teacher-Student Relationship and Dialogic Education
- 3 Stewardship-Oriented Perspective

# What would educating for wisdom look like?



*Wisdom emerges from an understanding of the historical, social, and cultural context. It cannot be completely programmed into logic, mathematics, models, or code*

## CRITICAL THINKING

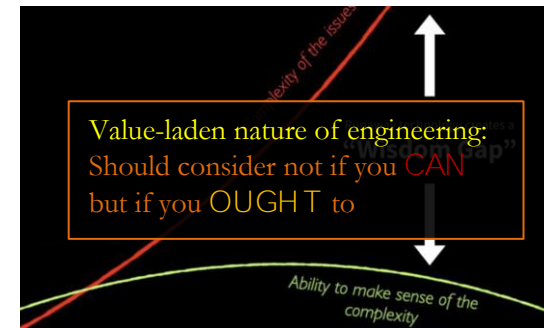
- Knowing the context
- Knowing the pitfalls of rules/model/methods
- Ability to engage in informed judgement
- Knowing the limits of your knowledge

الجهل البسيط  
الجهل المركب

DUNNING-KRUGER

## PURPOSEFUL USE OF AI

- Knowing which ends/ objectives/ purpose to pursue and prioritize
- Importance of Human Skills and Character
- Pro-Human & Pro-Social



# *Conclusion:*

*Answering the following questions is all-important when we integrate AI in education*

- 1. How to prioritize the development of critical AI literacy and multiplex human development as we integrate AI into education*
- 2. How they can take actions as individuals and society to avoid the potential harms of AI (such as AI colonialism; dehumanization) while using AI's affordances to maximize human flourishing and shared prosperity.*

*THANK YOU!*

*jqadir@qu.edu.qa*

# References

Educating for the AI Era: Harnessing the Wild GenAI Horse through Multiplex AI Humanities and Critical AI Literacy

Junaid Qadir<sup>1</sup> and Recep Şentürk<sup>2</sup>



<sup>1</sup> Qatar University, Qatar (<https://orcid.org/0000-0001-9466-2475>)

<sup>2</sup> Hamad Bin Khalifa University, Qatar (<https://orcid.org/0000-0003-0106-5562>)

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=5015109](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5015109)