# ChatGPT and Education

Philosophical Perspectives

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# Claim 1: ChatGPT is less transformative than the internet

- Starting in the mid-1980s, the internet made literature, lectures, and any kind of help on any conceivable topic accessible to students at a click – intellectual work was changed forever

- Nonetheless, what's going on in a classroom today, isn't all that different from what went on 100 years or 150 years ago.

- ChatGPT is a continuation of what started in the 80s and 90s, **but not more transformative on education than what we've already been through**.

- Keep this in perspective, **and you won't overhype the significance of the recent AI revolution**.

# As with the internet, there will be effects on job market and so what we are teaching

- "An Early Look at the Labor Market Impact Potential of Large Language Model", Eloundou et al (March 27. 2023 – working paper – Open AI, OpenResearch,
  - we estimate that 80% of workers belong to an occupation with at least 10% of its tasks exposed to LLMs, while 19% of workers are in an occupation where over half of its tasks are labeled as exposed.
  - The projected effects span all wage levels, with higher-income jobs potentially facing greater exposure to LLM capabilities and LLM-powered software
  - Most exposed: **interpreters, writers and authors, public relations specialists, mathematicians, tax preparers, web and digital interface designers.**

## Claim 2: There has always been the opportunity to cheat, ChatGPT makes it a bit easier

- ChatGPT will make it easier to cheat on homework, but students already could pay for an essay online, it takes about 40 seconds to do. The internet already gave cheaters an infinite array of cheating strategies.

- ChatGPT is like having a super smart and willing sibling or friend around willing to help all the time.

- Solutions:
  - We'll need 'proof of personal skill':
  - a) trust,
  - b) in-person test verbally and written
  - c) essays that focus on in-class discussion and require reference to group-internal documents.
  - d) technological solutions of various sorts will arise

  We should encourage students to use AI, as long as it's not cheating.

# Claim 3: The Limits and Contradictions of AI

- **My view:** AIs are **rational**, **intelligent**, **linguistically competent**, and **unimaginably smart**. They even have **emotions** and **intentions**.

- **Temptation**: treat AI as a guru – as a guide for how to live your life and ultimately how to organize societies.

- Our core job as educators is to explain why this is **absurd**, **impossible**, **confused** and **dangerous**.

- We need to convey the following: **most questions we really care about are ASSESSIVE AND ESSENTIALLY CONTESTABLE – they cannot be answered by AIs**

# AI Contradictions: Assessment and Essential Contestation

- How should large cities balance interests of pedestrians and cars?

- Should humans be multiplanetary?

- What's a fair tax system?

- Which religion is correct?

- Should you be a vegetarian?

- Which profession will make you happiest?

- Should you have children and if so, how many?

- Should HK build Northern Metropolis, Lantau artificial islands, both or neither?

- These and almost all other important questions, **don't have conclusive answers, so no AI system can 'tell you the answer'**

- **To answer these questions, you have to balance COMPETING CONSIDERATIONS, VALUES, and NORMS against each other**

# AI and Human Assessment

- **Our job is to teach students that the burden of thinking cannot be offloaded to anyone, and definitely not to an AI system.**

- **Our education should constantly emphasize such points of contradiction, disagreement, and incompatibility.**

- That core mission is now even more critical because it will be easier to be lazy and intellectually irresponsible.

# Kant, ChatGPT, and the Enlightenment

- This way to thinking about education goes back to **Kant**:

- "Enlightenment is man's emergence from his self-imposed immaturity. Immaturity is the inability to use one's understanding without guidance from another (*eg ChatGPT*). This immaturity is self-imposed when its cause lies not in lack of understanding, but in lack of resolve and courage to use it without guidance from another. Sapere Aude! [dare to know] **"Have courage to use your own understanding!" — that is the motto of enlightenment**." (Kant: What is Enlightenment? 1784)

- **Dewy**: adds the social dimension:  Doing projects together – learn how to create common goals.

- Our job is to continue these project that traces back to the Enlightenment.

- Our job is to make sure our students minds don't become slaves of AI.

# Summary

- **Claim 1:** ChatGPT is not more transformative than invention of the internet

- **Claim 2:** ChatGPT makes cheating a bit easier, but the solutions are familiar.

- **Claim 3:** ChatGPT makes our core educational mission more salient: Teach students to think for themselves and jointly about questions that don't have unique answers – that involve competing norms, values and considerations.

## Thanks!

CUHK KEEP Webinar

# Challenges of ChatGPT in Education
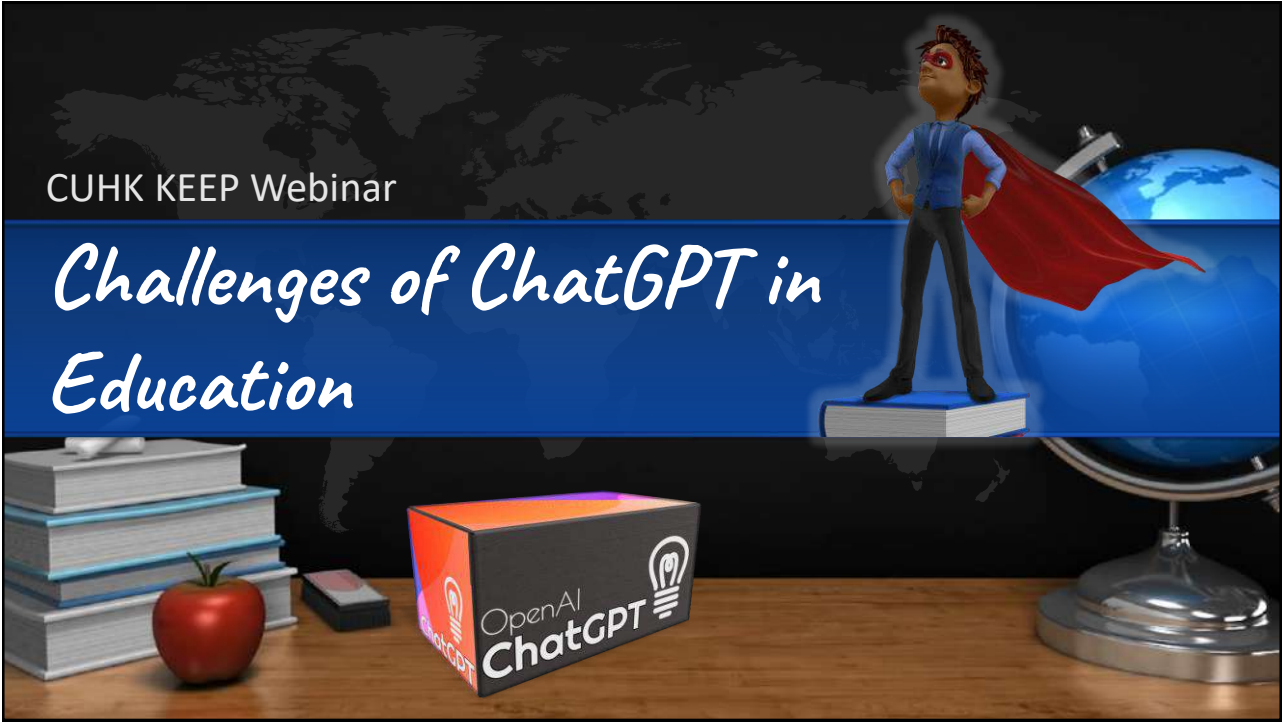


History is repeating itself (again)

1960s 2023

Electronic calculator is banned from examinations

ChatGPT is banned from examinations

# Major challenges for academia

1. Be cognizant about generative AI tools

2. Leverage on AI tools to enhance T&L

3. Redesign Assessments

4. Develop Polices, Rules & Guidelines

# Categories of AI tools

**Text generation** - Summarisation, knowledge creation and extraction, text translation, presentation, formatting

**Image generation** - Text-to-image

**Slide generation**

**Code generation**

**Audio and music generation**

...

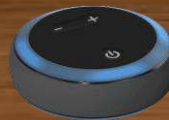# Scope and limitations of a tool

For ChatGPT

Large Language Models (LLMs)

Reinforcement Learning from Human Preferences (RLHF)

Data

# Ways to leverage ChatGPT to enhance T&L

- Extract, analyse and summarise a large volume of data and information
- Generate a script/template for a specific purpose and audience
- (Academics) generate course outlines, study guides, summarise research papers, literature review, analyse large volumes of data and extract trends, patterns, insights

Challenges
Specifying the context, structure, providing feedback, knowledge of the underlying data, & level of reasoning required

# Redesign Assessments

What AI tools did you use?

## An alternative way to assess a student essay/report

| Deliverable | Assessable | Description | What it reveals |
|---|---|---|---|
| 1. Plan of action | Yes | Student outline his/her methodology to tackle the problem, in major steps. Outline the tools and data that will be used for searching, analysis, reasoning and compilation of final essay/report | Indicate student's<br>• Critical thinking skills<br>• Problem solving skills<br>• Digital literacy skills |
| 2. A log of the generative AI tools used (if any) | No | Students submit a log showing the questions posted to a generative AI tool and the tool's response | Student's ability to create appropriate question/prompt/response to converge to the needed information<br>Serves as a basis of comparison with the final version of the essay/report submitted by the student. Student needs to demonstrate his/her skill in posing direct and appropriate question(s) to the AI tool(s) |
| 3. Final essay/report | Yes | The official output by the student for formal assessment | Indicate student's<br>• Critical thinking skills<br>• Problem solving skills<br>• Analytical skills<br>• Information management skills<br><br>Should identify areas where student has directly incorporated from, corrected/improved on, or discarded the tools' output |
| 4. Reflection | Yes | Student should reflect on the new process of using AI tool(s) to help tackle their assignment, their assessment of the usefulness, scope and limitations of the various tools, and their strategy to verify, incorporate, refine or discard the output from the AI tool(s) | A good indication of the meta-cognition demonstrated by the student and his/her ability to identify shortfalls and areas of improvement |

Human-Machine Cooperative Freeway
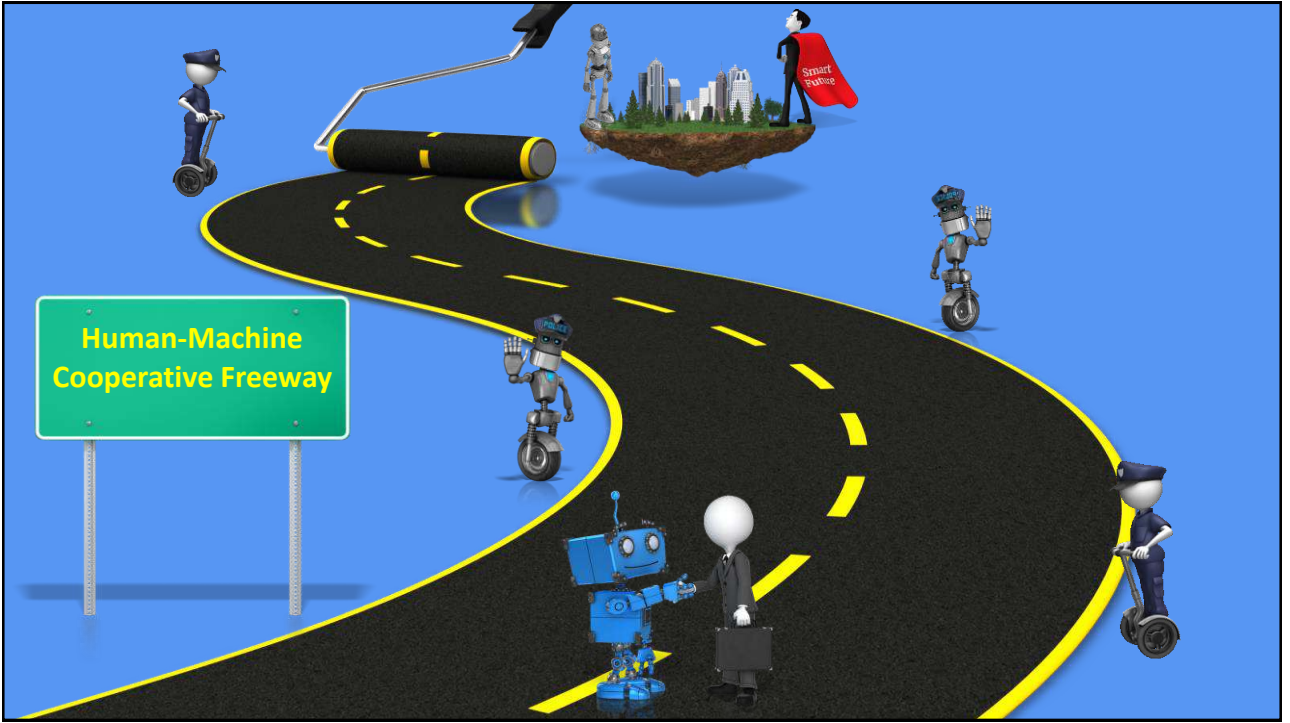
# THE ETHICAL AND SOCIAL IMPLICATIONS OF GENERATIVE AI FOR THE FUTURE OF WORK:

## WHY AI LITERACY MATTERS IN EDUCATION
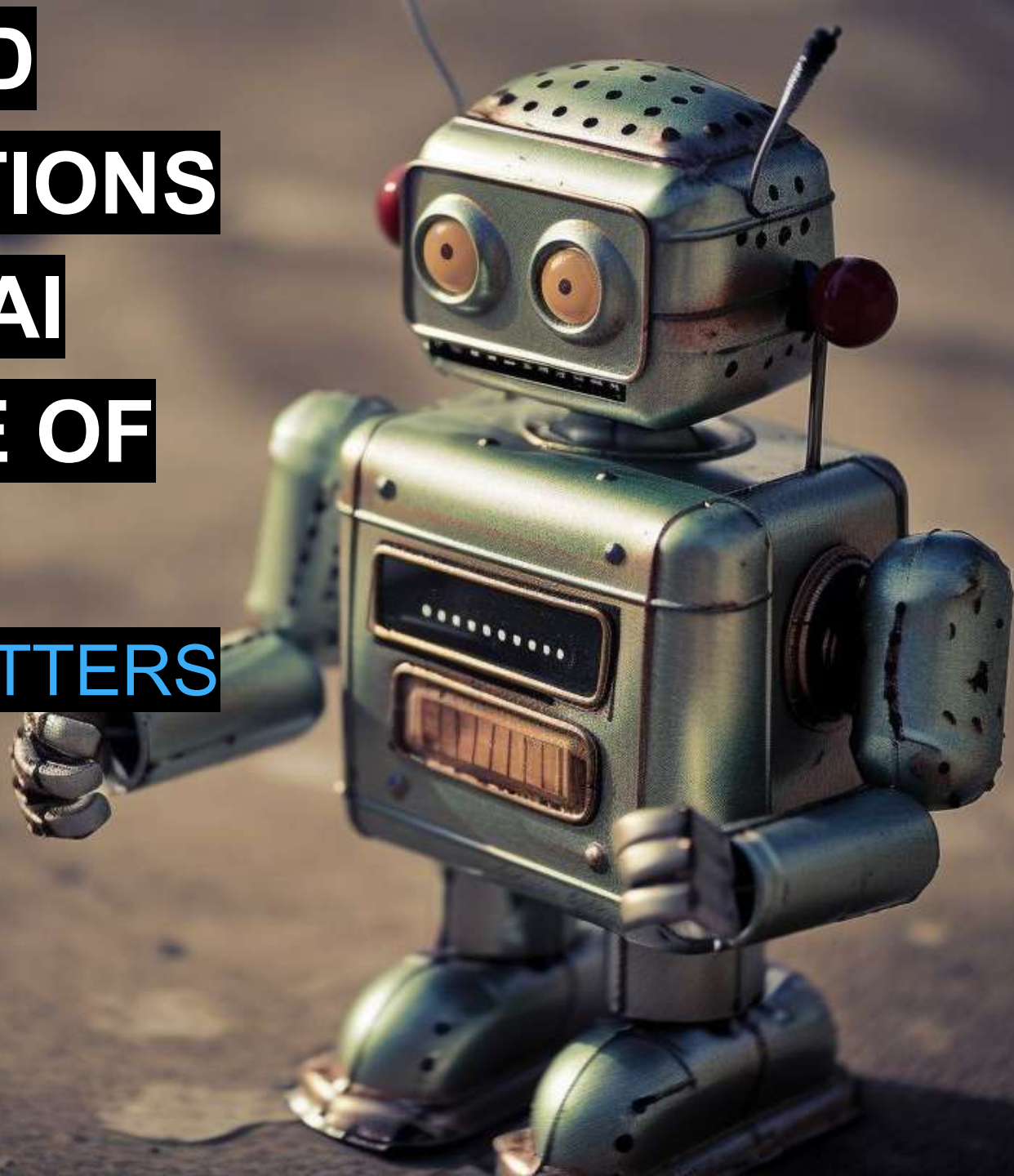
# FUTURE OF WORK
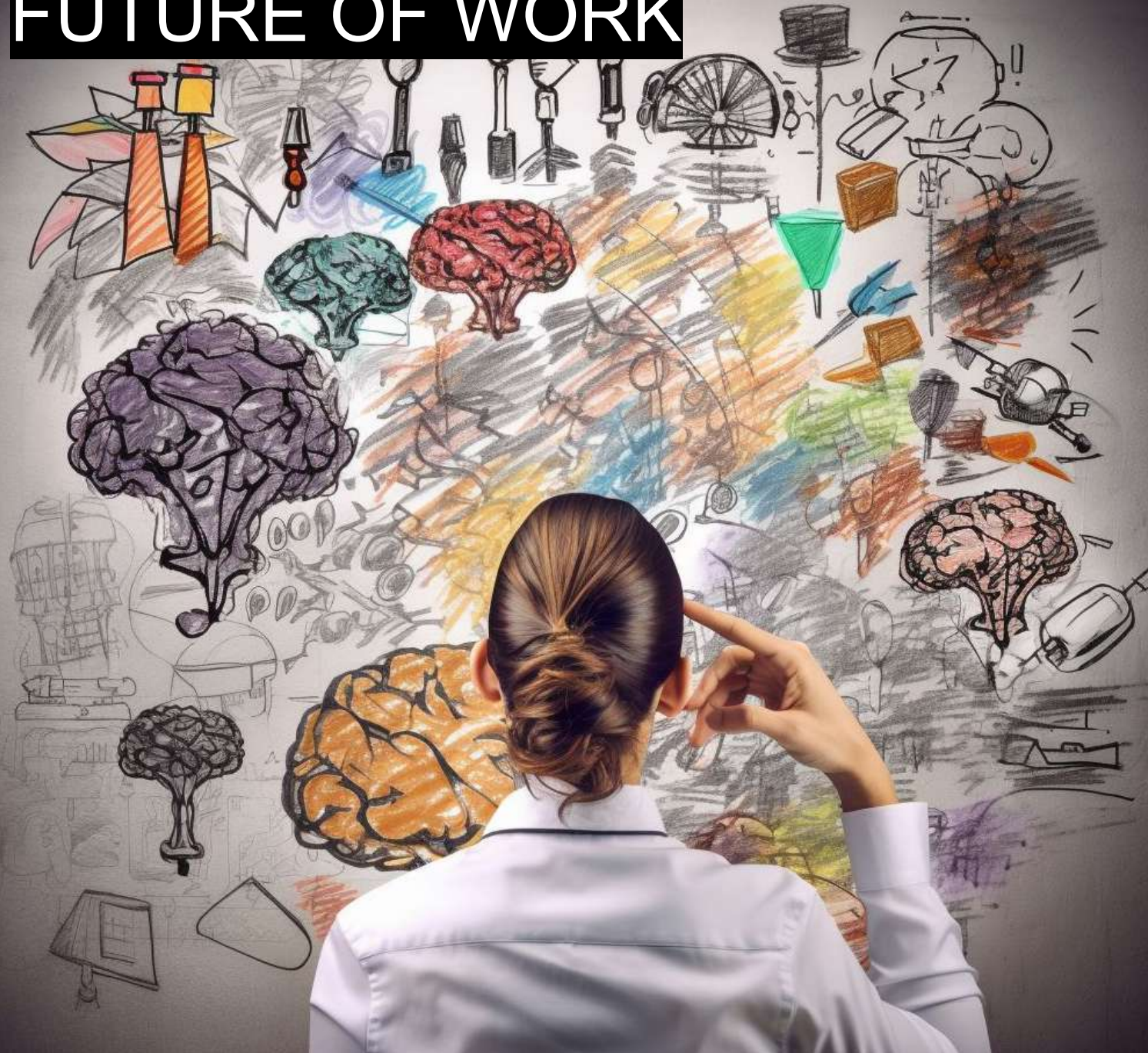
**Technological skills:** such as digital literacy, coding, data analysis, artificial intelligence, etc.

**Social skills:** such as communication, collaboration, empathy, intercultural understanding, etc.

**Higher cognitive skills:** such as critical thinking, creativity, problem-solving, learning to learn, etc.

- http://oecd.org

- http://weforum.org

- http://unesco.org

56 DELTAS[1] across 13 skill groups and four categories

## Cognitive

**Critical thinking**
- Structured problem solving
- Logical reasoning
- Understanding biases
- Seeking relevant information

**Planning and ways of working**
- Work-plan development
- Time management and prioritization
- Agile thinking
- Ability to learn

**Communication**
- Storytelling and public speaking
- Asking the right questions
- Synthesizing messages
- Active listening

**Mental flexibility**
- Creativity and imagination
- Translating knowledge to different contexts
- Adopting a different perspective
- Adaptability

## Digital

**Digital fluency and citizenship**
- Digital literacy
- Digital learning
- Digital collaboration
- Digital ethics

**Software use and development**
- Programming literacy
- Data analysis and statistics
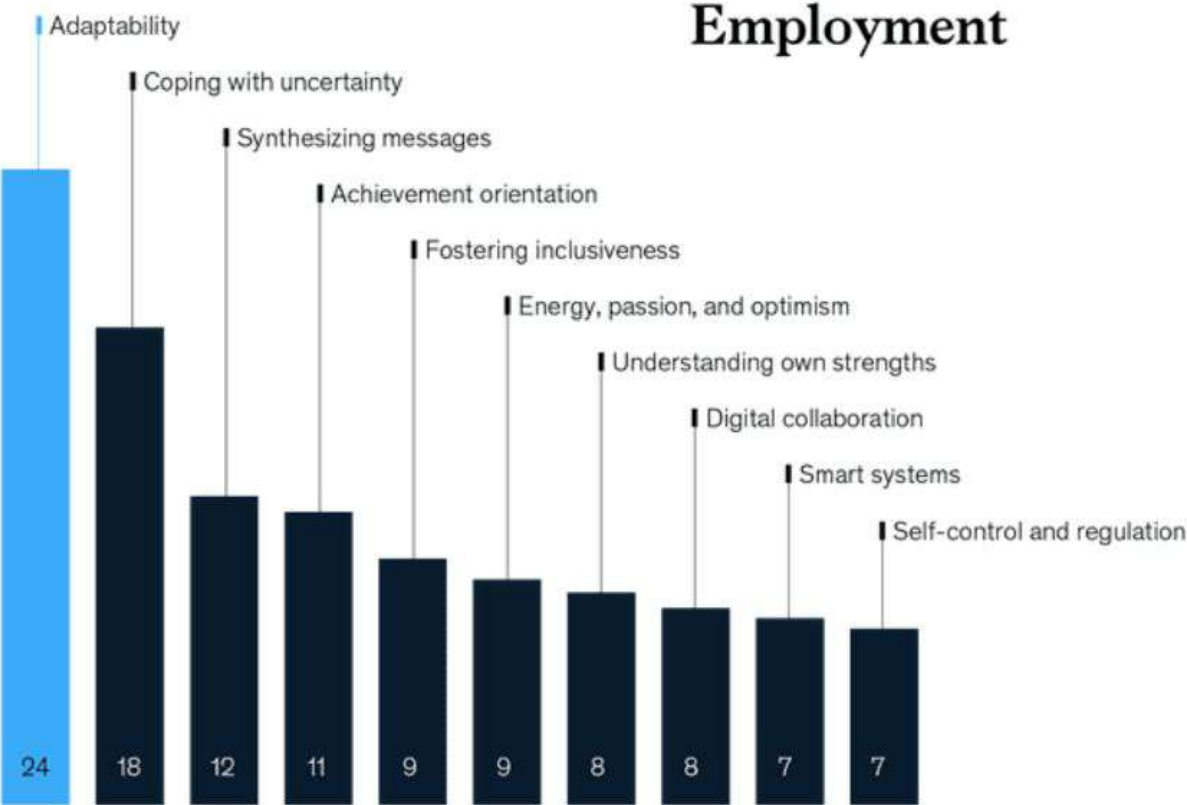- Computational and algorithmic thinking

**Understanding digital systems**
- Data literacy
- Smart systems
- Cybersecurity literacy
- Tech translation and enablement

# DISTINCT ELEMENTS OF TALENT (DELTA)

# Proficiency in certain DELTAs is linked with higher likelihood of employment.

**Increased chance of respondents with a higher proficiency in the DELTA[1] being employed,[2] %**



Employment

- Adaptability — 24
- Coping with uncertainty — 18
- Synthesizing messages — 12
- Achievement orientation — 11
- Fostering inclusiveness — 9
- Energy, passion, and optimism — 9
- Understanding own strengths — 8
- Digital collaboration — 8
- Smart systems — 7
- Self-control and regulation — 7

Note: The margin of error is 3% with a 95% confidence interval. DELTAs selected based on individual contribution—holding other variables constant—to the probability of a survey participant being employed among those with income below the median or those with no income. People with income above the median were excluded to avoid skewed results because of higher proficiency in DELTAs.

[1] Distinct element of talent.
[2] Increase in the odds of being employed if proficiency score is higher by 1 level, assuming all other elements and demographic variables are fixed/constant. Only OECD countries included in this analysis.

McKinsey & Company

Adaptability is the strongest DELTA to increase employment. Image: Mckinsey & Company

# GPTS ARE GPTS: AN EARLY LOOK AT THE LABOR MARKET IMPACT POTENTIAL OF LARGE LANGUAGE MODELS

"Our findings indicate that the importance of **science** and **critical thinking skills** are strongly negatively associated with exposure, suggesting that occupations requiring these skills are less likely to be impacted by current GPTs. Conversely, **programming** and **writing skills** show a strong positive association with exposure, implying that occupations involving these skills are more susceptible to being influenced by GPTs."
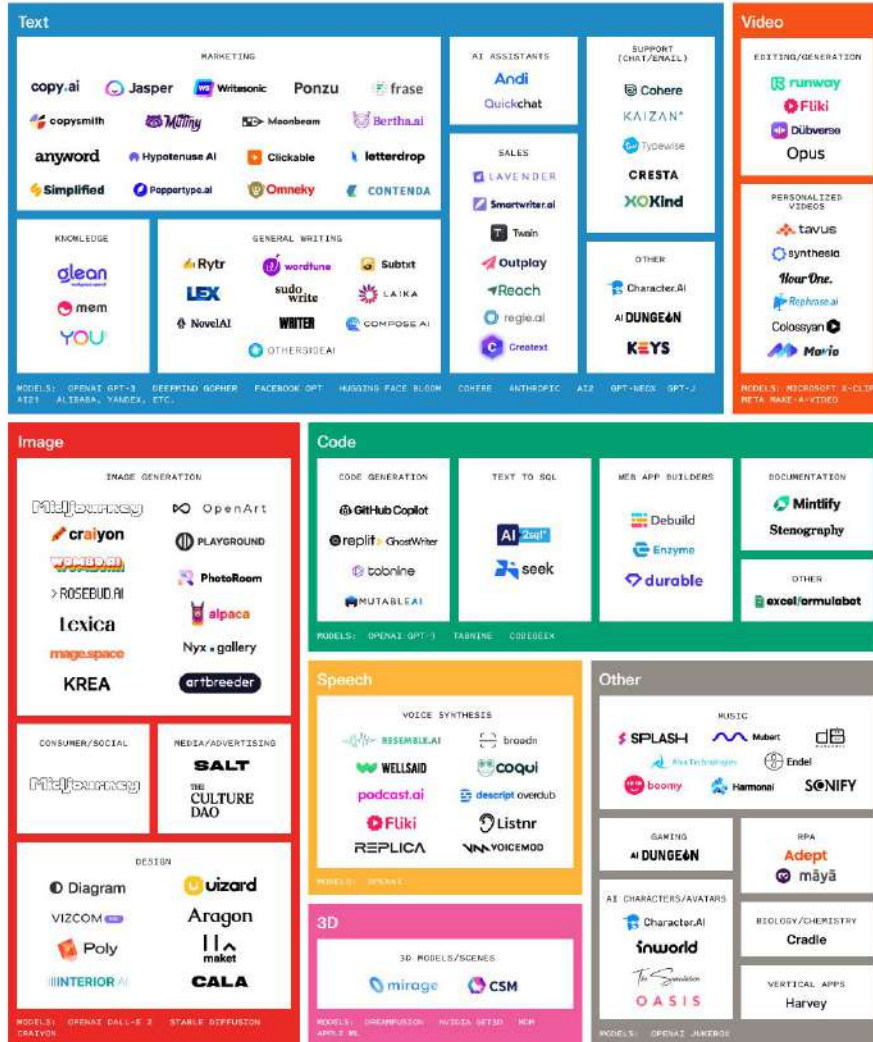
23 March, 2023

OpenAI, OpenResearch, University of Pennsylvania

[2303.10130.pdf (arxiv.org)](https://arxiv.org)

"[…] due to factors such as rising pseudo-imagination & medical care and increasing banking frauds."

We can ask ourselves:

- How does generative AI reveal the world to us?
- What kind of culture does it embed and promote?
- How does it affect our relationship with nature and other human beings?
- How does it shape our understanding of ourselves and our role in the world?
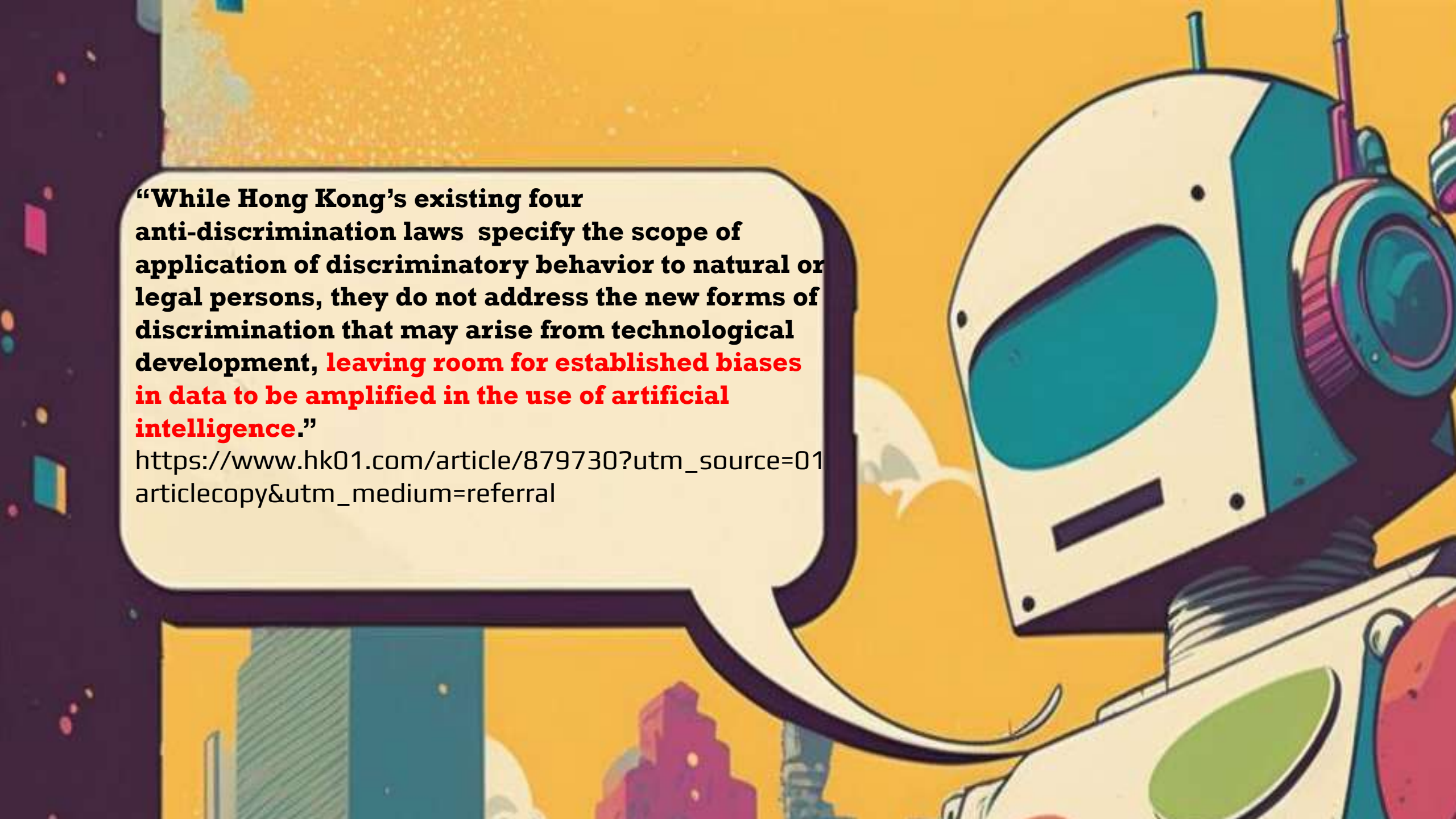- How does it challenge or support our values and goals?

# Disinformation, misinformation and malinformation



FALSENESS

INTENT TO HARM

Misinformation     Disinformation     Malinformation
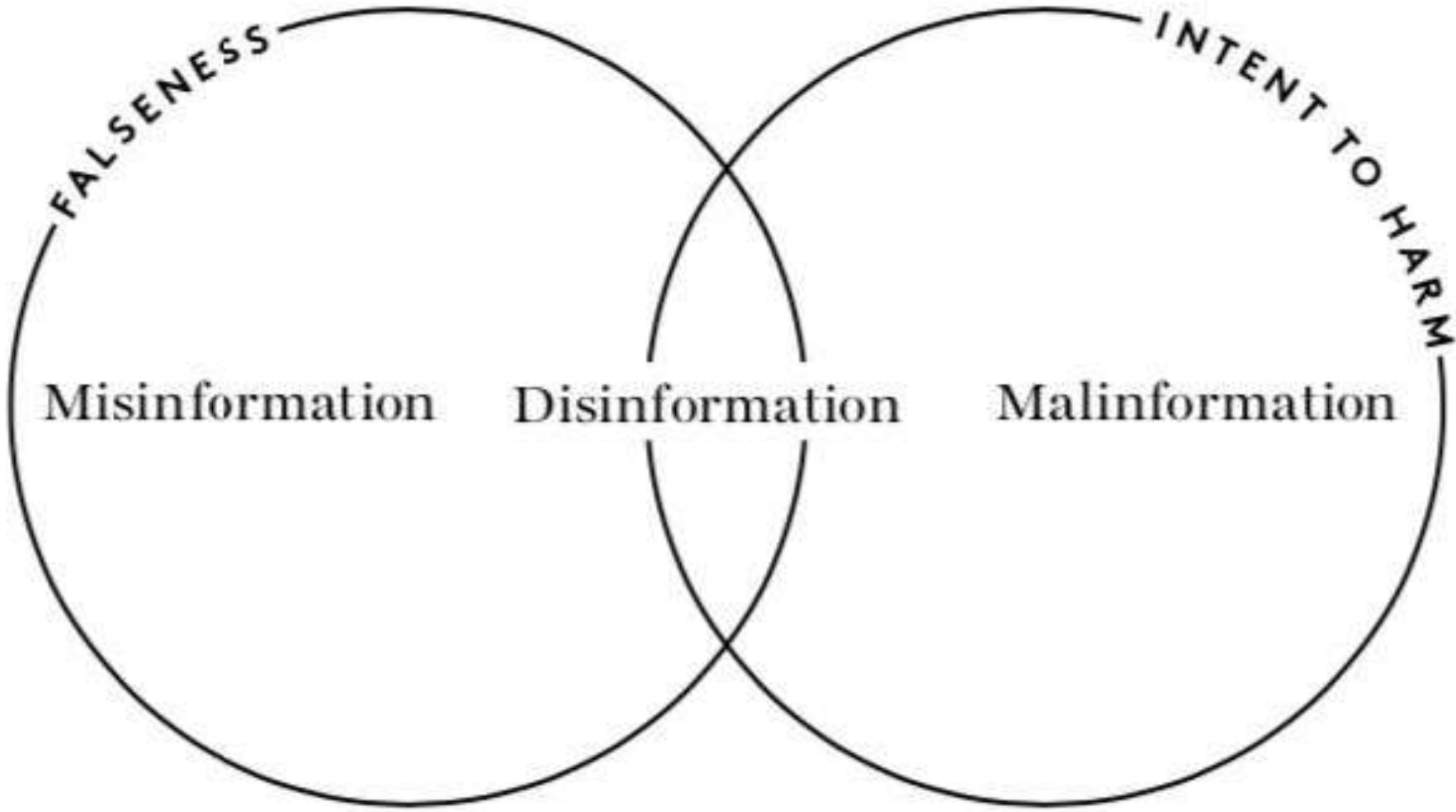
"The majority of us—including the creators and trainers of AI—will not even know where we are incorrect. And thus, unintentionally, the technology may spread ideas that distort reality."

ChatGPT: Disruption or fantasy? - Frontline (thehindu.com)

"While Hong Kong's existing four anti-discrimination laws  specify the scope of application of discriminatory behavior to natural or legal persons, they do not address the new forms of discrimination that may arise from technological development, **leaving room for established biases in data to be amplified in the use of artificial intelligence**."

https://www.hk01.com/article/879730?utm_source=01articlecopy&utm_medium=referral

BIAS BUILT INTO DATA / AI-INDUCED BIAS

# PAUSE GIANT AI EXPERIMENTS: AN OPEN LETTER

"Contemporary AI systems are now becoming human-competitive at general tasks, and we must ask ourselves: *Should* we let machines flood our information channels with propaganda and untruth? *Should* we automate away all the jobs, including the fulfilling ones? *Should* we develop nonhuman minds that might eventually outnumber, outsmart, obsolete and
replace us? *Should* we risk loss of control of our civilization?"

Musk, E., Wozniak, S., Bengio, Y., Harari, Y. N., & Russell, S. (2023a). An open letter calling for a pause on AI development. Future of Life Institute.
https://futureoflife.org/open-letter-pause-ai-development/

AI LITERACY

# THANK YOU

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# The challenges of generative AI for communication

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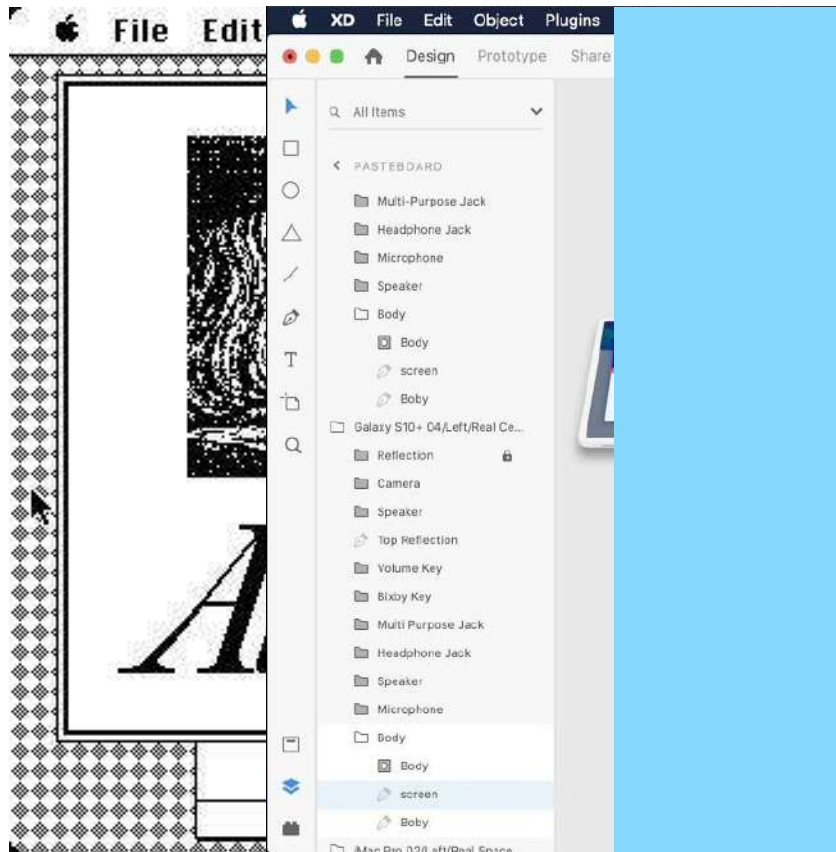
# There is no communication without tech change

TECH

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Civil servants to soon use ChatGPT to help with research, speech writing

ChatGPT

Examples

"Explain quantum computing in simple terms" →

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# Should universities ban AI tools? Why?

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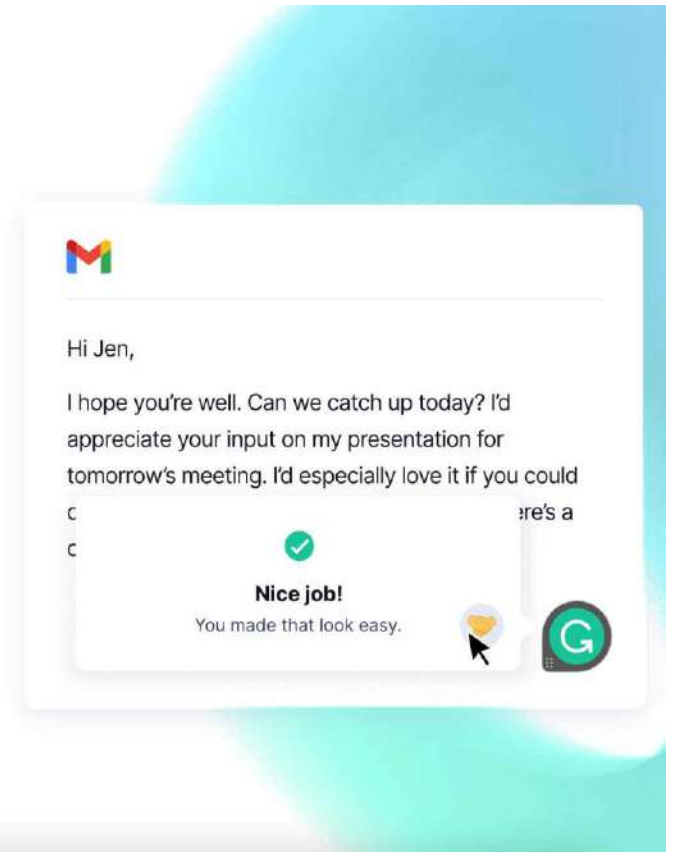
# Using generative AI in the classroom - *Interviewing*

- Students asked questions on ChatGPT and had to evaluate how the answers differed based on their open-ended questions, closed-ended questions, or how to probe based on the responses received. (Input->output)

- For a focus group assignment, students refined the focus of their topic by soliciting input from ChatGPT and evaluating whether the received answers would improve the issue or make it worse

- All the things we did in class with ChatGPT would have been done by students on their own using search engines.

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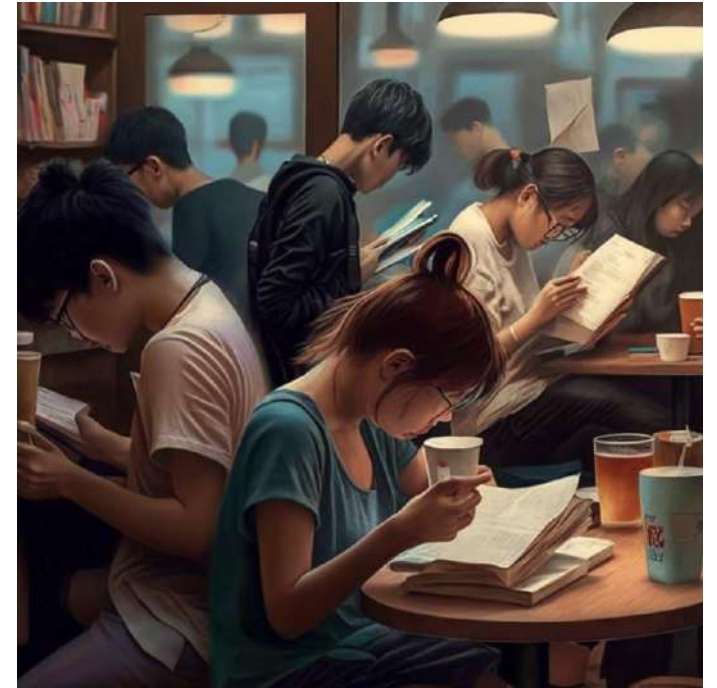
# Using generative AI in the classroom – *Media Design*

- Students have used Midjourney to create visual content for their newsletters.

- For the written part, ChatGPT was used to develop ideas for their texts, but ultimately students had to write their own stories.

- ChatGPT was helpful in the first and final part of the assignment (e.g., headlines refinement)



Midjourney prompt: Students coming to class after a long weekend

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# Key takeaways

- Students enjoy exploring these generative AI tools at critical stages in their learning process: at the start of a project, when they have a blank page and don't know how to start, and at the end of a project, when they look for refinement

- The central part of students' work is still done by themselves. If you let the students explore the tools, they realise how good they are at predictions but how little they reason.

- I tend to see these AI tools as facilitators, not as disruptors



Midjourney prompt: People reading in a coffee shop in Hong Kong

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# Long-term perspectives

- These generative AI tools can be grasped and integrated into students' learning in the short term. We need to be flexible and acknowledge these tools' opportunities as well as their limitations.

- These AI tools will not go away. We can't go back to "the good old days."

- In the long run, I am concerned about the students' creativity.

- Since these tools can create illustrations, photos, videos, and even write music, what motivation will students have to create their content? This is a structural problem, not necessarily a technological one.

Thank you!

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[http://coms.hkbu.edu.hk/faculty-staff/faculty/florin/](http://coms.hkbu.edu.hk/faculty-staff/faculty/florin/)