Ethics on the Use of AI in Teaching and Learning

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This presentation was partially designed with Slides.AI

As an educator, which of the following describes your current impression of AI in Education?

A. I’m so excited, and I just can’t hide it 🤩.

B. Stop now, thank you very much ✋

(I need somebody with a human touch)

C. Tuliro, 'di malaman ang gagawin 🤯

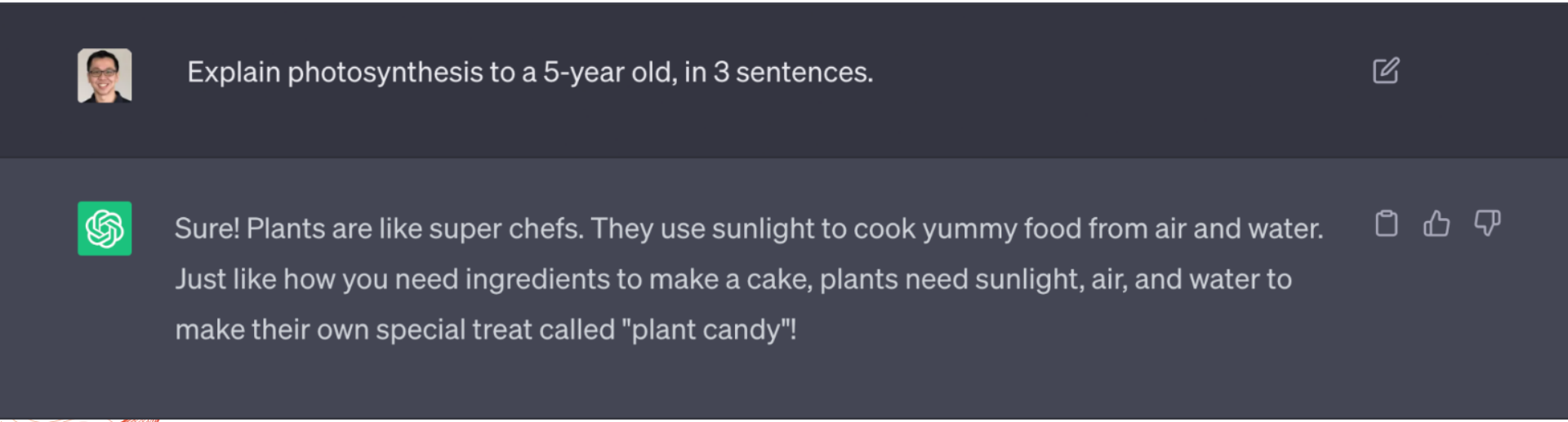
What is Generative AI?

“Generative artificial intelligence (GenAI) utilizes unique algorithms to **generate new content such as text, images, and music.** .” (Hsu & Ching, 2023)

Powered by:
Big data + Increased access to computing + Machine Learning (Pedro et al, 2019)

Exponential growth

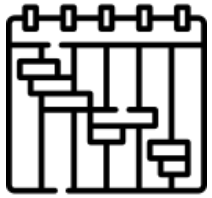
“ChatGPT attracted 1 million users in 5 days and 100 million users in 2 months since its launch in November 2022”.
(Hsu & Ching, 2023)



Screenshot of results from an inquiry on ChatGPT(3.5)

Possibilities : **Efficiency in time and effort** (Teaching)

Research Content



Design a unit/lesson plan

Create Learning Materials

Facilitate Discussions

Check Assessments

(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)

Prospects - How do we teach?

New competencies for teachers (Pedro et al, 2019)

- **A clear understanding** of how AI-enabled systems can facilitate learning provision, so that they can make sound value judgments on new AI-enabled educational products;
- **Research and data analytical skills**, so that they can interpret data provided by AI-enabled systems, ask useful questions about the data and provide students with feedback based on insights that arise from the data; and
- **New management skills**, so that they can effectively manage both human and AI resources at their disposal.
- A **critical perspective** on the ways Ai and digital technologies affect human lives and new frameworks of computational thinking and digital skills can increment students´ capacities to understand the power, the dangers and the possibilities of AI.
- **Enable teachers to take advantage of AI** taking over repetitive tasks to bring in more human capabilities they may not have had time for before: mentorship, emotional support, interpersonal skills, etc.
- Help learners acquire those **skills and competencies that are likely not to be replaced by machines.**

Not just **efficiency**, but also **ethics.**

Driving Questions:

What are ethical **considerations** on the use of AI in Teaching and Learning?

What are **questions** that we need to ask?

What are strategic **directions** to address them in our institutions?

Ethics“… deals with
the standards of **right** and **wrong**,
acceptable and **not acceptable**”

(Hogenhout, 2021, p. 11, as cited in Chan, 2023)

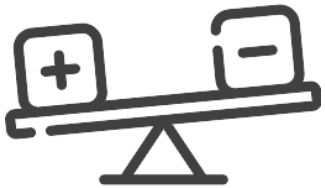
Ethical Considerations
on the use of AI for Teaching and Learning

Technology
access

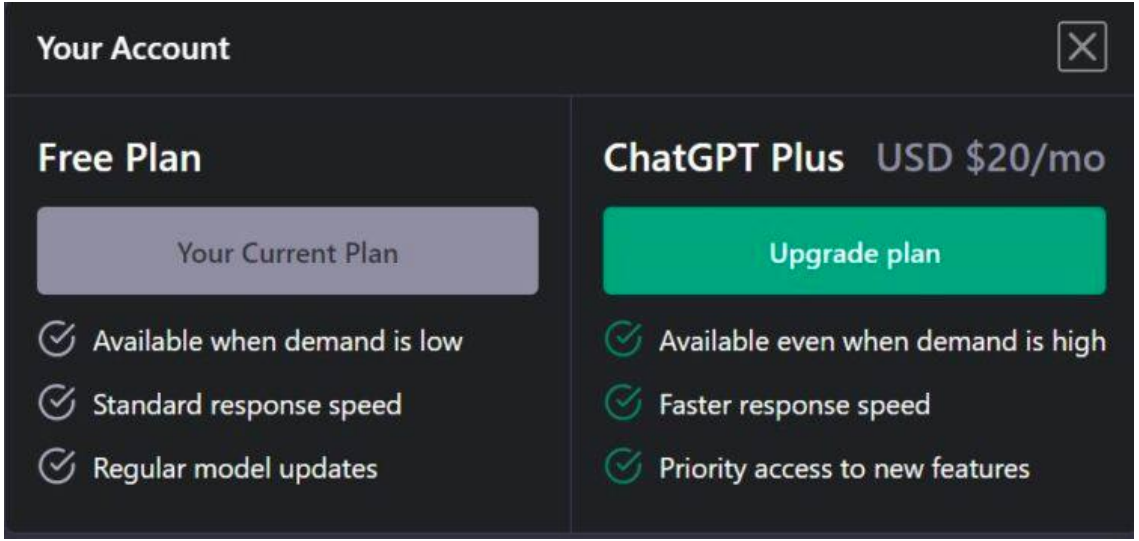
Truth &
Transparency

Trust

Thinking

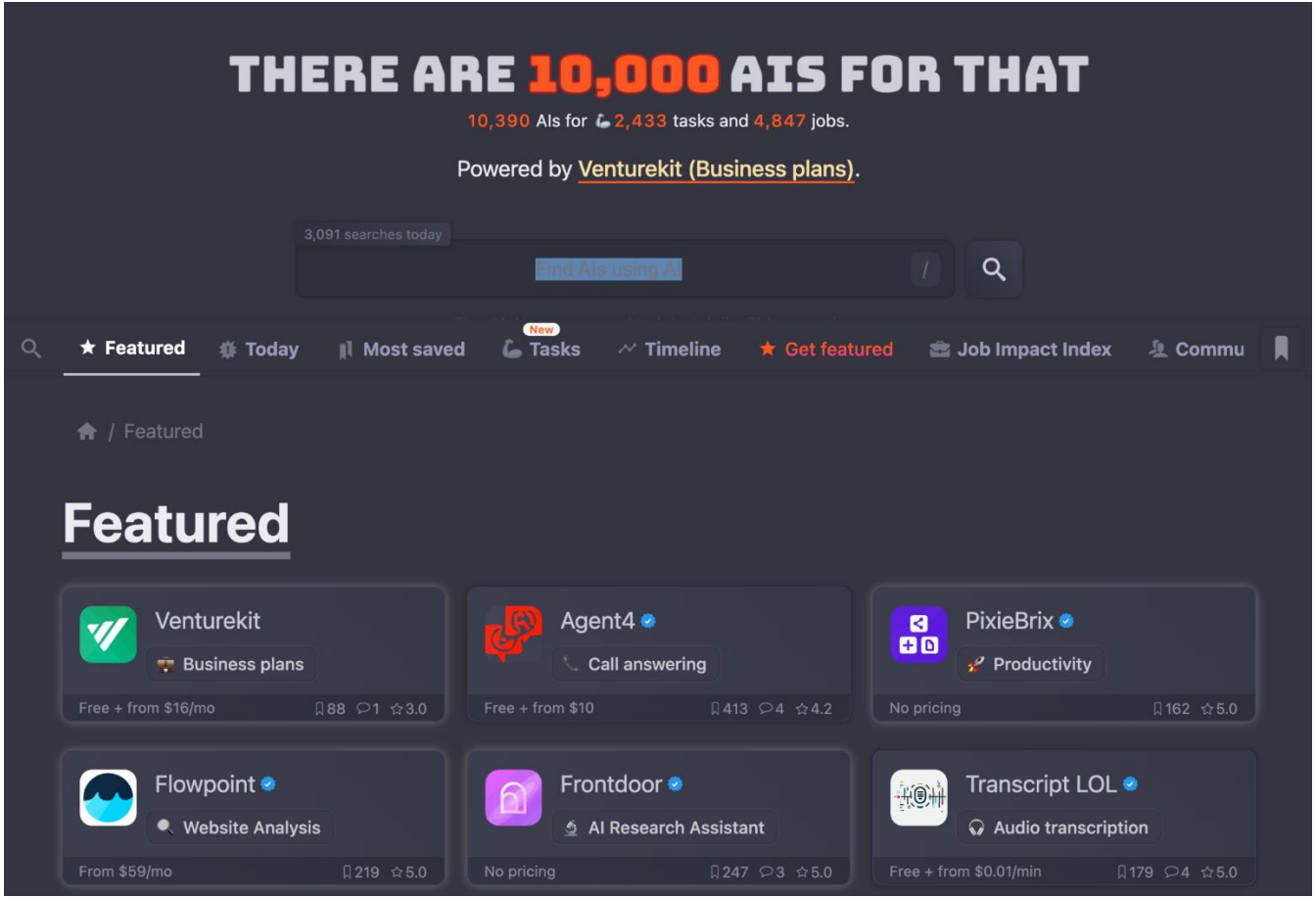


Technology access

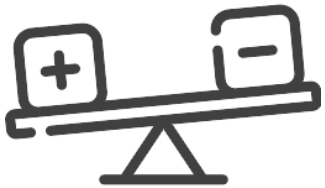


- Assumes equity in access and ability to participate.
- Emerging “marketplace” of private platforms

(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)



www.theresanaiforthat.com

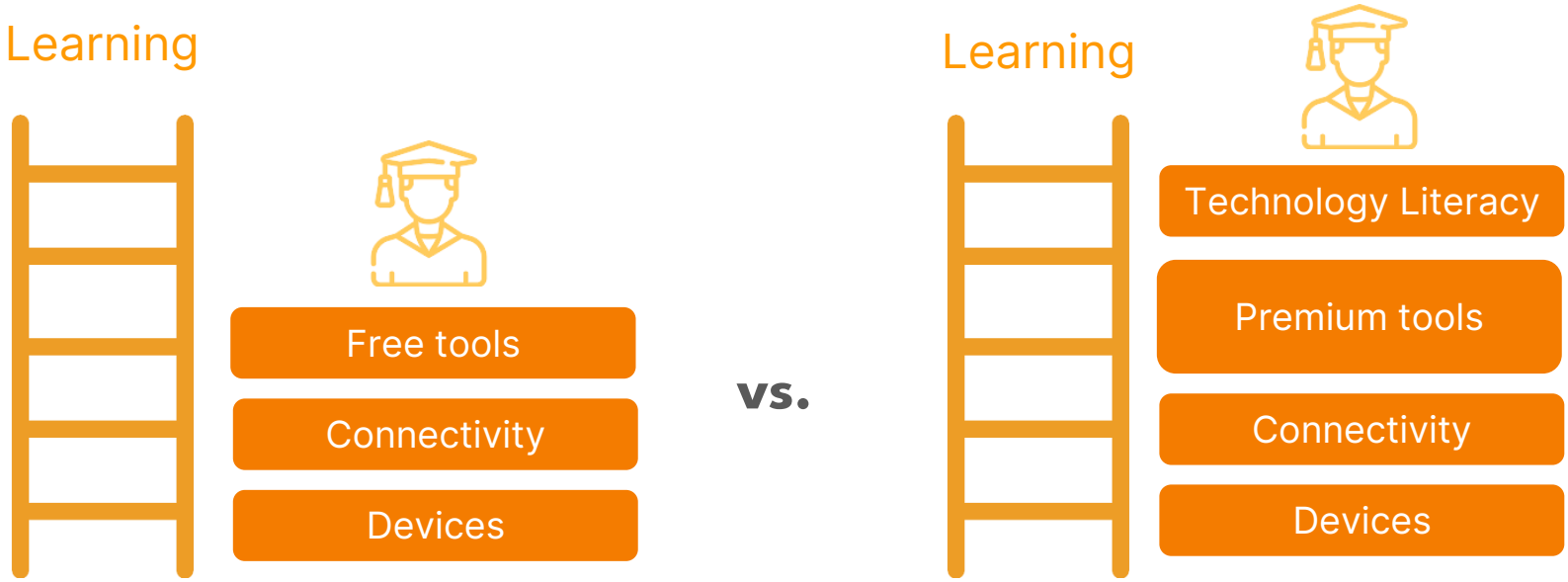


Technology access

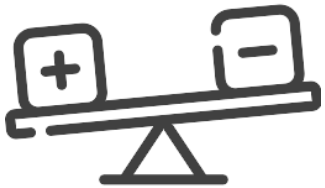
- Not just availability but also **AI Literacy**

“AI literacy is the ability to readily engage with AI by leveraging AI tools, systems, and frameworks to effectively and ethically solve problems in a wide range of sociocultural contexts. “

(p.229, Wang & Lester, 2023)



Technology access and **Equity**



Technology access

Ethical Questions:

- What will access look like among our faculty/students?
- How might schools support equity in access?
- How might schools support AI literacy of teachers and learners?

Truth & Transparency

The New York Times

A.I. and Chatbots › | How the A.I. Race Began | One Year of ChatGPT | Key Figures in A.I. | How A.I. Could Be Regulated

When A.I. Chatbots Hallucinate

Share full article | 272

By Karen Weise and Cade Metz
Karen Weise reported this story from Seattle and Cade Metz reported from San Francisco.

Published May 1, 2023 Updated May 9, 2023

When did The New York Times first report on "artificial intelligence"?

According to ChatGPT, it was July 10, 1956, in an article titled "Machines Will Be Capable of Learning, Solving Problems, Scientists Predict" about a seminal conference at Dartmouth College. The chatbot added:

CHATGPT

This conference is now considered to be the birthplace of artificial intelligence as a field of study, and the article mentions the term "artificial intelligence" several times in the context of the discussions and presentations that took place at the conference.

The 1956 conference was real. The article was not. ChatGPT simply made it up. ChatGPT doesn't just get things wrong at times, it can fabricate information. Names and dates. Medical explanations. The plots of books. Internet addresses. Even historical events that never happened.

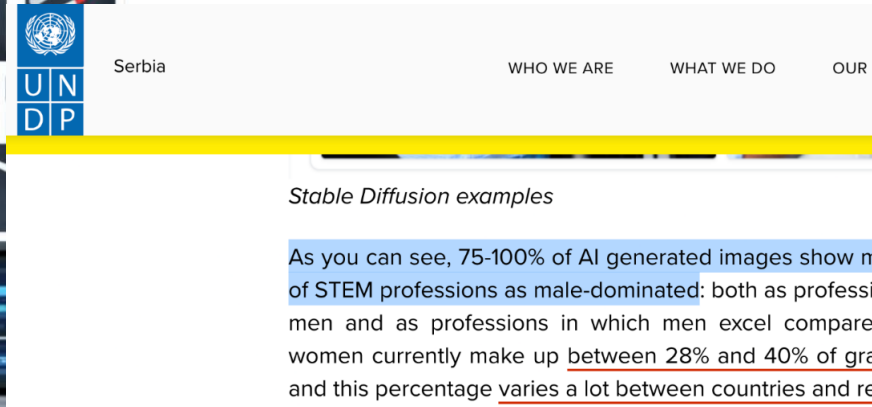
- "AI Hallucinations" and half-truths
- Lack of explainability

(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)

Truth & Transparency

- Deepfakes

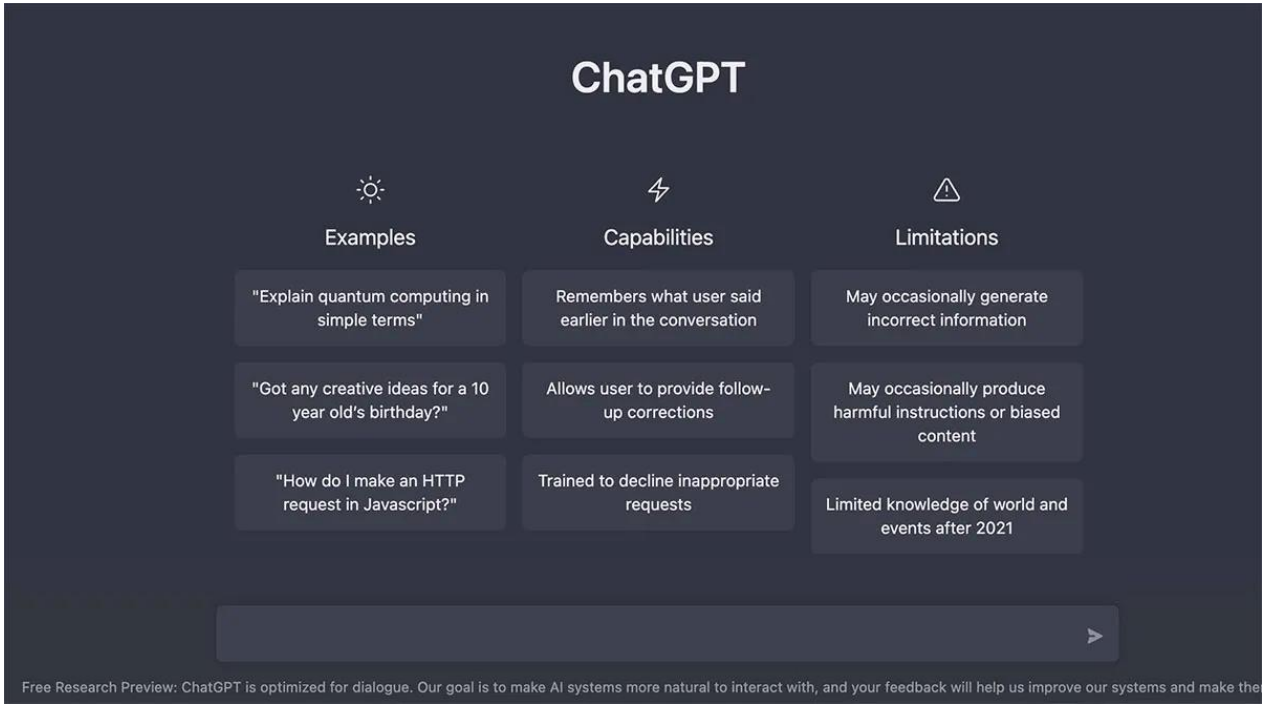
Truth & Transparency



- Algorithmic Bias and Discrimination

(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)

Truth & Transparency



- Data Privacy (use of training data)

(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)

Truth & Transparency

Ethical Questions:

- How much do we understand about how these technologies derive and present information?
- How might we foster "**Skeptical resilience**" - not immediately believing, "critical ignoring", suspending judgement, knowing who or what to trust *(Calingasan & Gonzales, 2023)*

Between users and AI

Trust

“Who trains AI models, who decides what is right and wrong, and who dictates what is good and bad? In the end, such a powerful technology has the potential to manipulate the educational landscape and even the entire global society.”

(Bozkurt et al, 2023)

Trust

Harvard Business Review

Intellectual Property

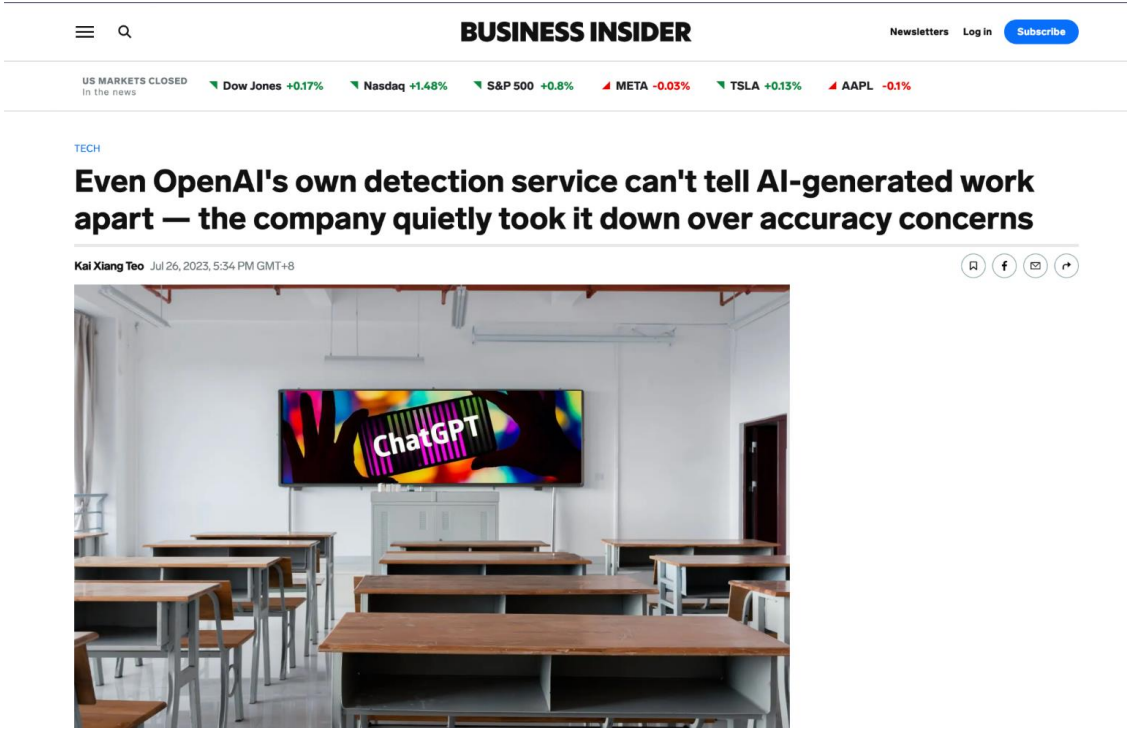
Generative AI Has an Intellectual Property Problem

by Gil Appel, Juliana Neelbauer, and David A. Schweidel

April 07, 2023

HBR Staff/Pexels

Trust



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TECH

Even OpenAI's own detection service can't tell AI-generated work apart — the company quietly took it down over accuracy concerns

Kai Xiang Teo Jul 26, 2023, 5:34 PM GMT+8

Between Teachers and Students

- Academic/ Assessment Integrity
- Ownership

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Acceptable Uses of GAI Tools

In general, using GAI tools for preparatory research work for an assignment is considered acceptable practice, **however such tools should never be the only source of information used.** GAI tools are not academic sources, they do not produce fact checked content, reproduce inherent biases in provision of information, and often cannot accurately state the sources from which the content provided has been gathered. Therefore it is vital that students use academic sources and trusted disciplinary specific sources when developing their work. None of the text generated by AI should be used in submitted work unless quoted and referenced as such. Rather, AI can help students synthesise their ideas

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Specific use cases

See some specific acceptable uses of GAI here:

- Initial research into a topic, idea or concept to gain an overview for example: "what are the main ethical concerns for students when using generative artificial intelligence tools?"
- Identifying/summarising core concepts or viewpoints in a particular disciplinary area for example "what were the prevalent influences on 19th century writers?" or "what are some alternative explanations to string theory?"
- Summarising texts- you can cut and paste a section of text into a GAI tool and ask it to summarise the content. This is especially useful if you are unsure that you understand what the key message or concept in a piece of text is
- Taking notes during group work discussions
- Getting ideas on how to present work
- Organising work
- Formatting a reference list
- Quoting a short excerpt from the content generated by artificial intelligence tools in an assignment, attributing the content to the tool used through appropriate citation and referencing conventions in subject area.

Stanford | Office of Community Standards

Honor Code Implications of Generative AI Tools

– Absent a clear statement from a course instructor, use of or consultation with generative AI shall be treated analogously to assistance from another person. In particular, using generative AI tools to substantially complete an assignment or exam (e.g. by entering exam or assignment questions) is not permitted. Students should acknowledge the use of generative AI (other than incidental use) and default to disclosing such assistance when in doubt.

Relate to established values

Carnegie Mellon University

Examples of possible academic integrity policies that address student use of generative AI tools

The following examples represent a range of options one could adapt or adopt, based on their teaching context and course's student learning objectives.

- Example 1: Students may NOT use generative AI in any form.
- Example 2: Students may NOT use generative AI in any form.
- Example 3: Students are fully encouraged to use generative AI.
- Example 4: Students are fully encouraged to use generative AI.
- Example 5: Students may use generative AI in some cases, but not others
- Example 6: Students may use generative AI in some cases, but not others

Offer flexibility

Carnegie Mellon University

Example 3: Students are fully encouraged to use generative AI.

I encourage students to explore the use of generative artificial intelligence (AI) tools, such as ChatGPT, for all assignments and assessments. Any such use must be appropriately acknowledged and cited, following the guidelines established by the APA Style Guide, including the specific version of the tool used. Submitted work should include the exact prompt used to generate the content as well as the AI's full response in an Appendix. Because AI generated content is *not* necessarily accurate or appropriate, it is each student's responsibility to assess the validity and applicability of any generative AI output that is submitted. You may not earn full credit if inaccurate, invalid, or inappropriate information is found in your work. Deviations from these guidelines will be considered violations of CMU's academic integrity policy. Note that expectations for "plagiarism, cheating, and acceptable assistance" on student work may vary across your courses and instructors. Please email me if you have questions regarding what is permissible and not for a particular course or assignment.

Adapted from Harvard University (https://oue.fas.harvard.edu/ai-guidance)

Revisit Purpose and Assessment

Which of these should have the **highest** value in education?

QUANTITY IN THE OUTPUT
"Saves a lot of time!"

QUALITY IN THE OUTPUT
"Gets me that A!"

QUALITY IN THE PROCESS
"Helps me learn to think & to learn!"

PRODUCTIVITY
PERFORMANCE
LEARNING

(Go, 2023)

Trust

Ethical Questions:

- How can we critically evaluate platforms and tools that will be employed?
- How can we foster a culture of trust in our classrooms (not just policing)?
- How can we shift from a productivity and performance mindset, to one of learning?

Artificial Intelligence: A Modern Approach (2010)

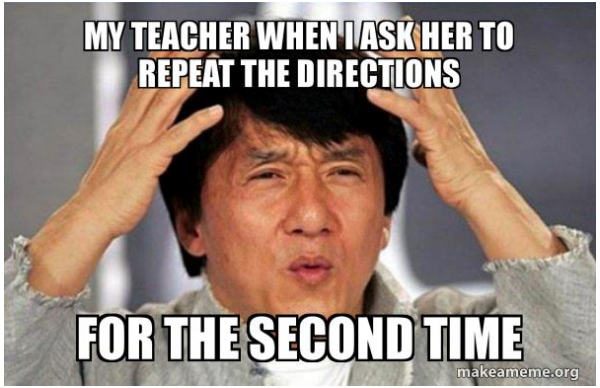
Thinking

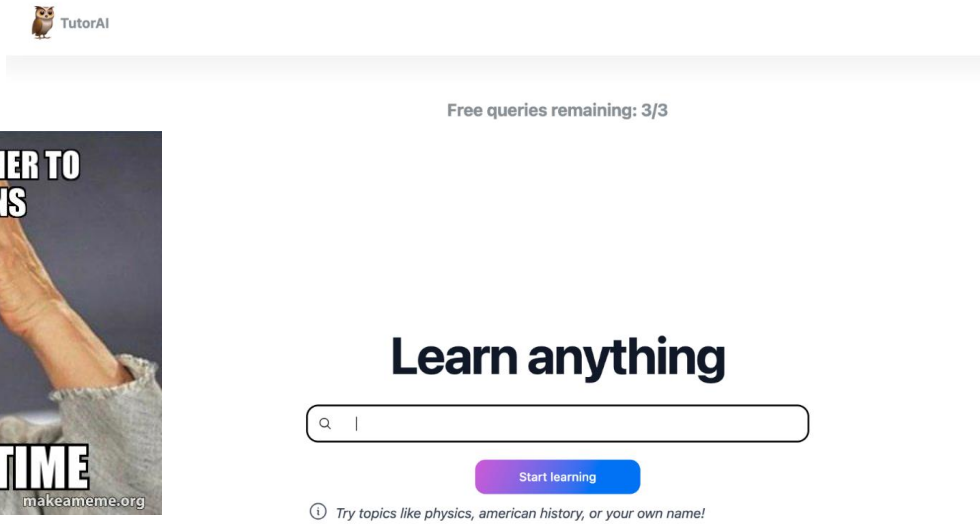
Figure 1. Different dimensions of AI

Thinking Humanly	Thinking Rationally
'The exciting new effort to make computers think… *machines with minds*, in the full and literal sense.' (Haugeland, 1985) '[The automation of] activities that we associate with human thinking, activities such as decision-making, problem-solving, learning…' (Bellman, 1978)	'The study of mental faculties through the use of computational models.' (Charniak & McDermott, 1985) 'The study of the computations that make it possible to perceive, reason, and act.' (Winston, 1992)
Acting Humanly	**Acting Rationally**
'The art of creating machines that perform functions that require intelligence when performed by people.' (Kurzweil, 1990) 'The study of how to make computers do things at which, at the moment, people are better.' (Rich & Knight, 1991)	'Computational Intelligence is the study of the design of intelligent agents.' (Poole, et al., 1998) 'AI… is concerned with intelligent behavior in artifacts.' (Nilsson, 1998)

(Russell and Norvig, 2010 as cited in Pedro et al, 2019)

Dual-Teacher Model (Teaching)



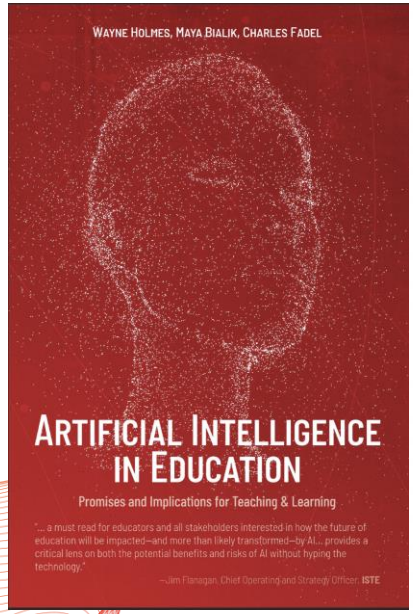


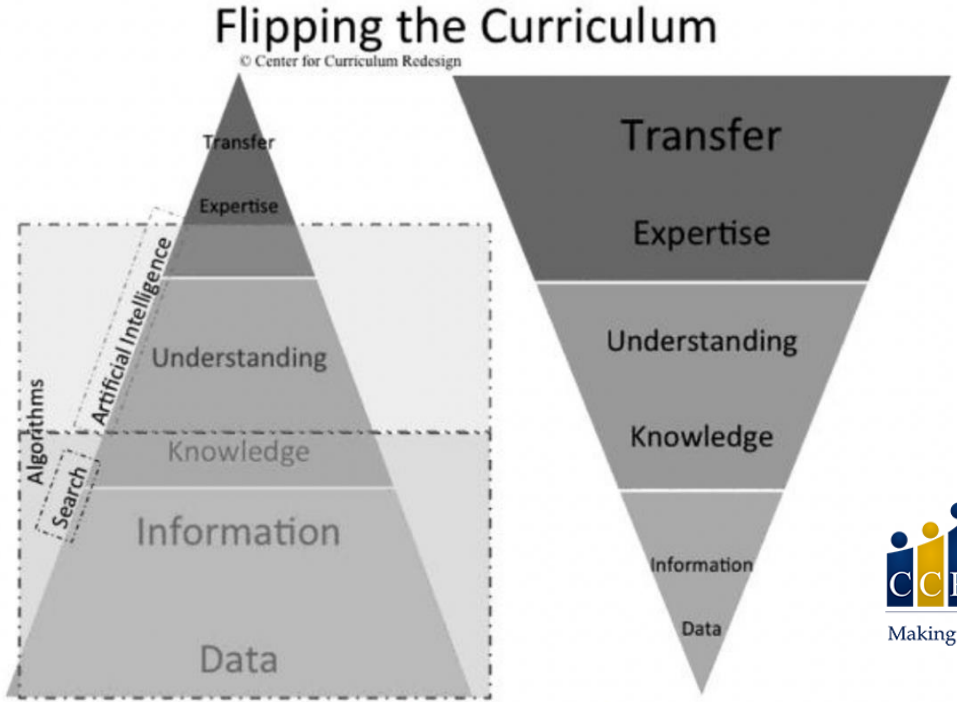
(Alsadi & Baiz, 2023; Bozkurt et al, 2023; Hsu & Ching, 2023; Pedro et al, 2019)

What do we teach?

Focus on Transfer not just knowledge

(Fadel et al, 2019)





CENTER FOR CURRICULUM REDESIGN
Making Education *More* Relevant

Flipping the curriculum to account for the encroachment of search and AI. *Source*: CCR

Close

Day 1 - Introduction to Photosynthesis

Lesson Overview

— Introduce the concept of photosynthesis and its importance to life on earth.

— Discuss the major components of photosynthesis (sunlight, water, and carbon dioxide).

— Explain the role of chlorophyll in the photosynthesis process.

— Discuss the major products of photosynthesis (oxygen and glucose).

— Identify the role of photosynthesis in the oxygen-carbon dioxide cycle.

Student Objectives

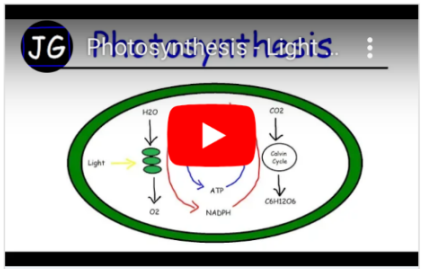
Lesson Resources

Lesson Plan

Educational Handout

Context Builder

AI Video Recommendations



Photosynthesis - Light Dependent Reactions and the Calvin Cycle

Next

Thinking

MAGIC SCHOOL

Work With Us | Community | Resources | About | L

Magic Tools

Scroll through the list below to see all 60+ of the incredible AI tools for educators in MagicSchool. Click the links to see the tools in action and learn how they support educators.

5E Model Science Lesson Plan Generator	Generate a 5E model lesson plan for your science class. Engage, Explore, Explain, Elaborate, Evaluate.
AI-Resistant Assignment Suggestions	Enter your assignment description to receive suggestions on making it more challenging for AI chatbots, promoting higher level thinking among students.
Academic Content Generator	Generate original academic content for your classes customized to the topic and criteria of your choice.

Thinking

Ethical Questions:

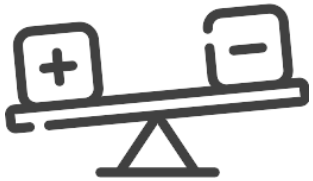
- In terms of thinking, what do we gain when we use Generative AI? What do we lose?
- What are essential thinking skills that we need to continue to hone?

Where does this leave us, teachers?

“Teachers will therefore remain at the frontline of education; it is misinformed to say that AI can replace teachers. Arguments to the contrary reduce the teaching profession to the performance of solely cognitive and routine tasks, ignore the research that stresses **the importance of a human mentor to support the learning process and neglect the creative and socio-emotional aspects of teaching, which go beyond mere knowledge transmission**”

(Bali, 2017).

Ethical Considerations
on the use of AI for Teaching and Learning



Technology
access

Truth &
Transparency

Trust

Thinking

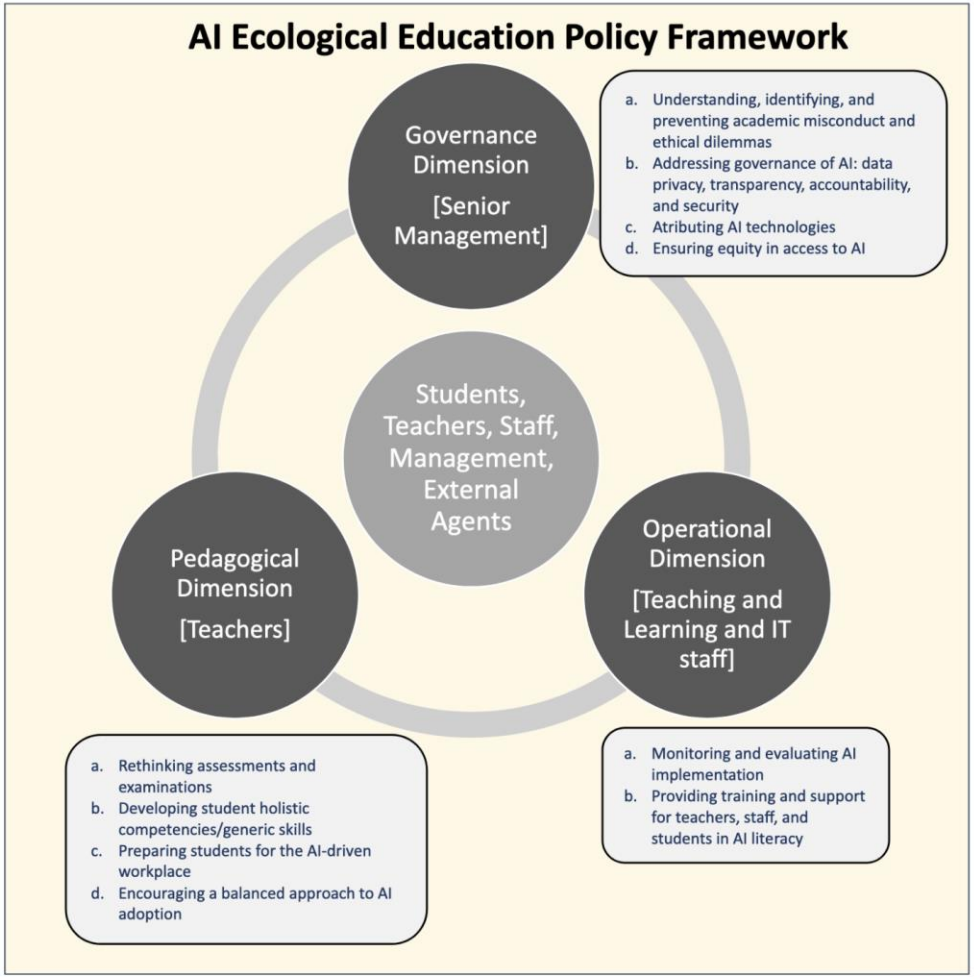


Fig. 1 AI ecological education policy framework

Technology access
Truth &
Transparency
Trust
Thinking

(Chan, 2023)

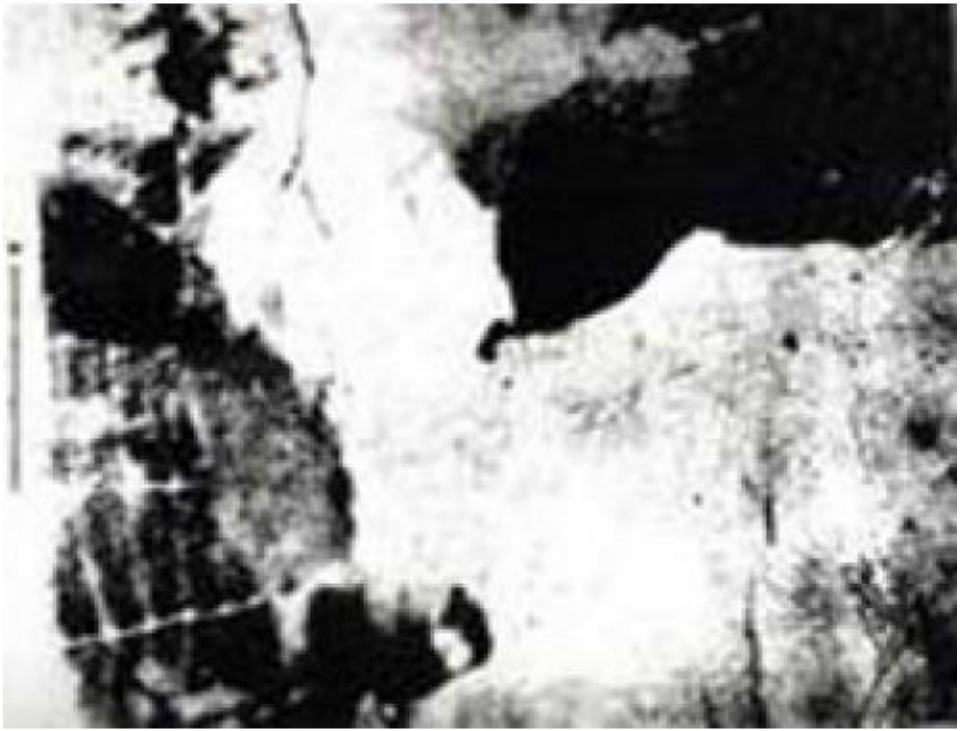
Our approaches at the SALT Institute

COURSES

COACHING

CONVERSATIONS

What do you see?



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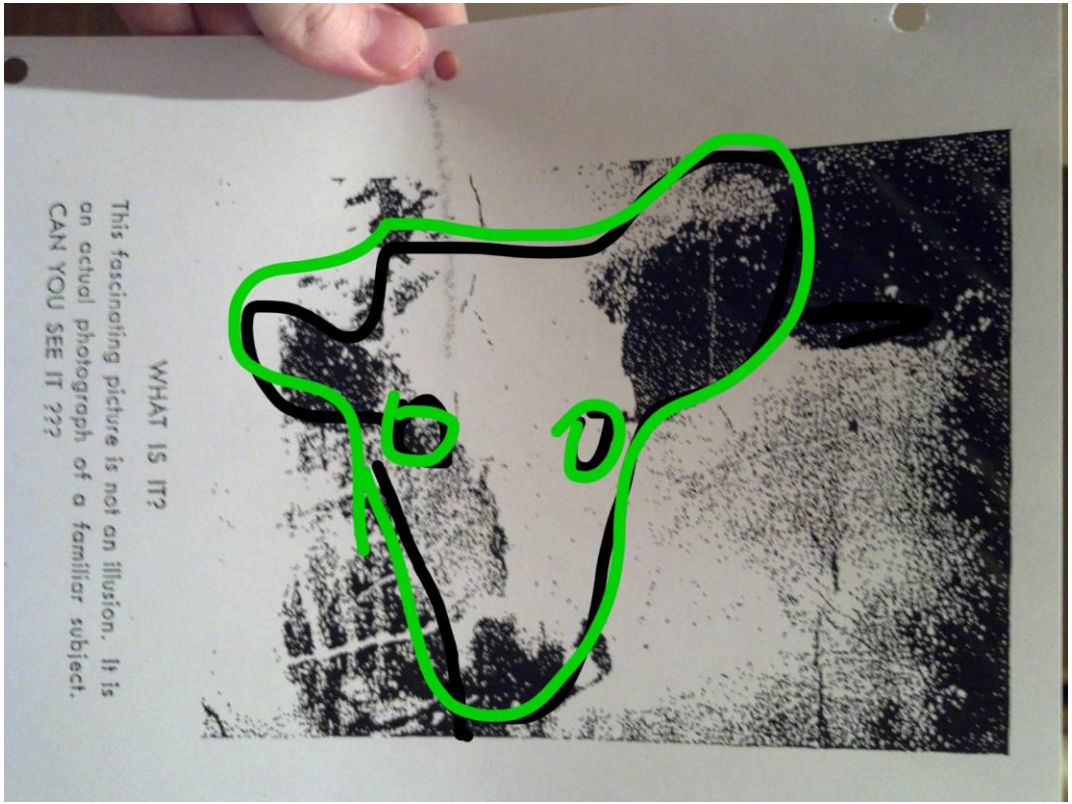
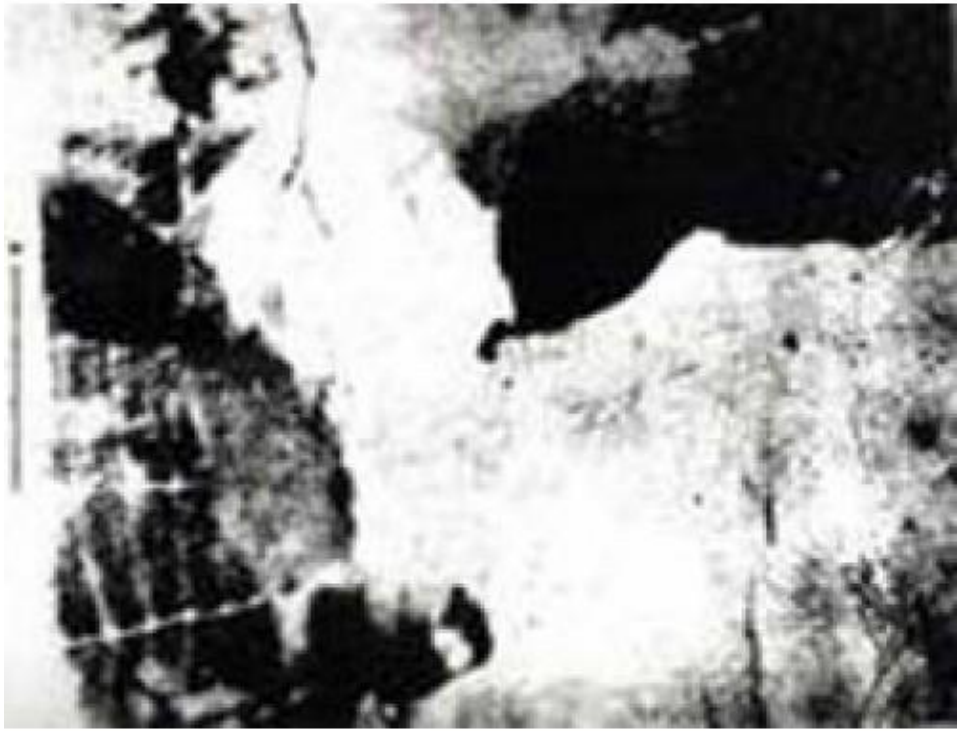


What do you see?



Renshaw’s Cow

We see what we pay attention to.

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