How AI Teaches its Children

Global AI Summit 2024

Bennett University, Greater Noida

Jon Dron, September 2024

Athabasca University
FACULTY OF SCIENCE & TECHNOLOGY
School of Computing & Information Systems

IFNTF
International Federation of National Teaching Fellows

HOW GERTRUDE TEACHES HER CHILDREN

An Attempt to Help Mothers to Teach their own Children

AND

AN ACCOUNT OF THE METHOD

A Report to the Society of the Friends of Education, Burgdorf

BY

JOHANN HEINRICH PESTALOZZI

(This is essential. I believe it is not possible for common popular instruction to advance a step, so long as formulas of instruction are not found which make the teacher, at least in the elementary stages of knowledge, merely the mechanical tool of a method, the result of which springs from the nature of the formulas and not from the skill of the man who uses it. I assert definitely, that a school-book is only good when an uninstructed schoolmaster can use it at need, [almost as well as an instructed and talented one.] It must essentially be

"merely the mechanical tool of a method"

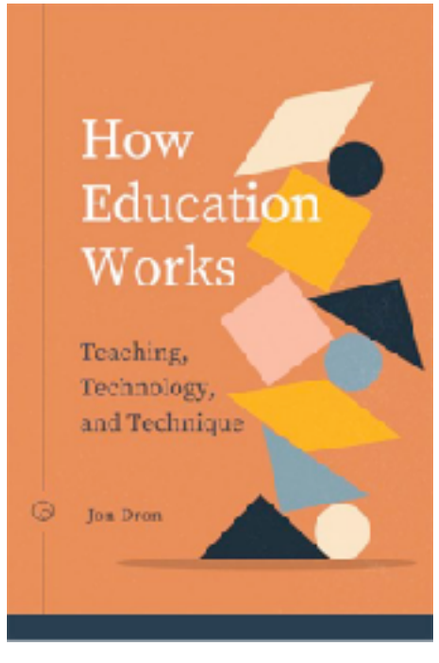
Defining “technology”

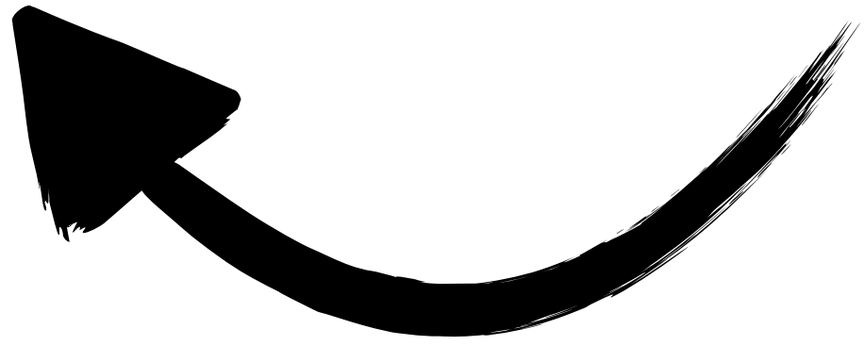
W. Brian Arthur:

The orchestration of phenomena to our use

me:

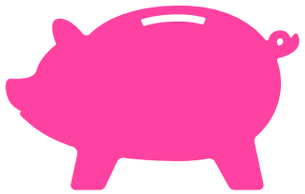
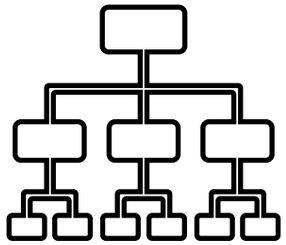
organizing stuff to do stuff

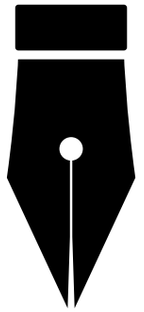




including (nearly always) other stuff organized to do stuff

Arthur, W. B. (2009). *The Nature of Technology: What it is and how it evolves* (Kindle). Free Press.

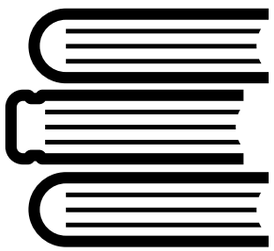





the organization

of any

stuff



Technique

What we do with what has been done

A technology enacted by a human

Hard technique

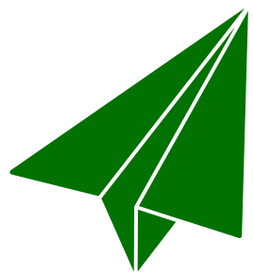
We are parts of the orchestration

(methods, processes, procedures that *must* be done correctly)

Soft technique

We are the orchestrators

(the *ways* we do stuff that can be done well but *never* correctly)



It is not just *what* you do but *how* you do it

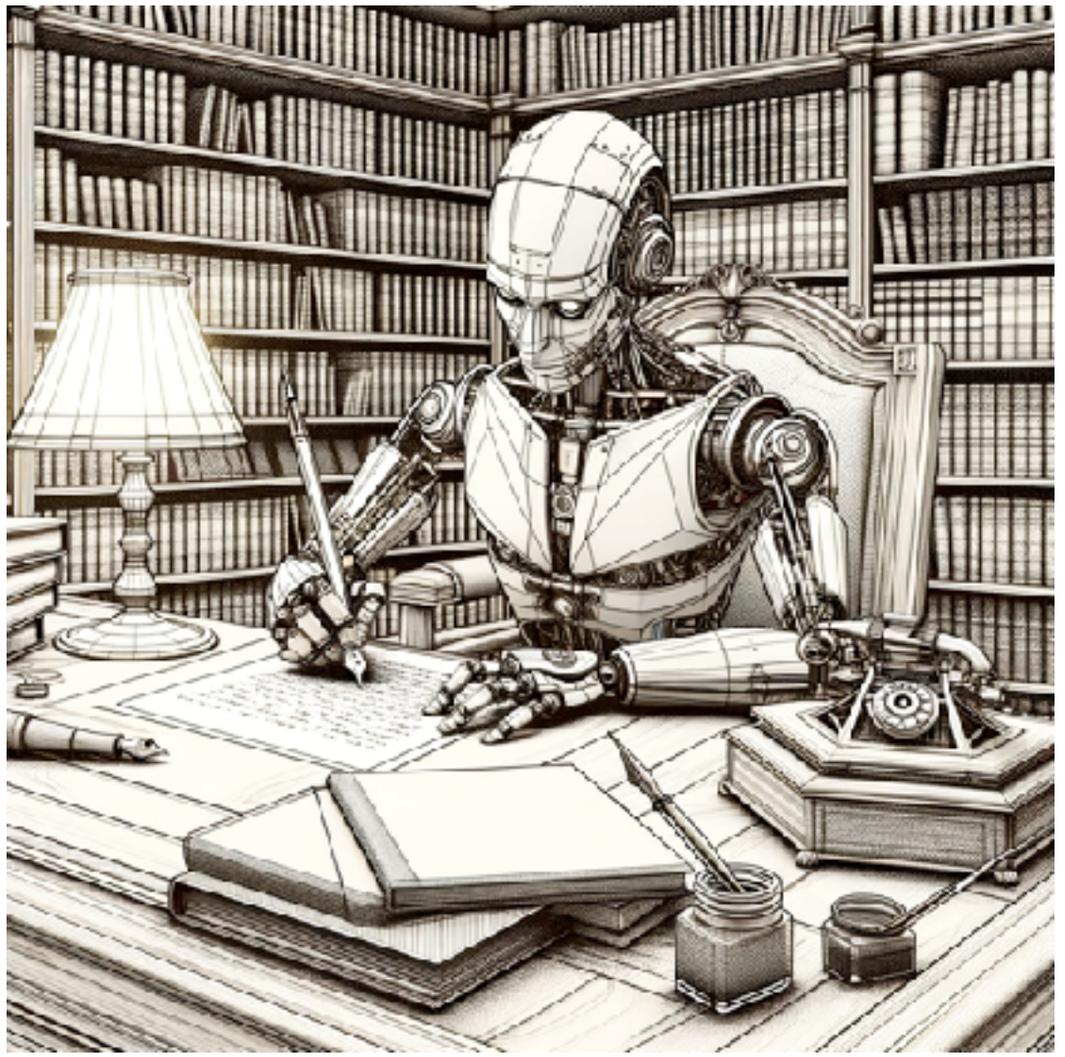
and how it fits with all the other stuff

Only the whole matters

Until now, automation has replaced hard technique

Generative AIs replace soft technique

Generative AIs *use* other technologies



Education

Training for hard technique

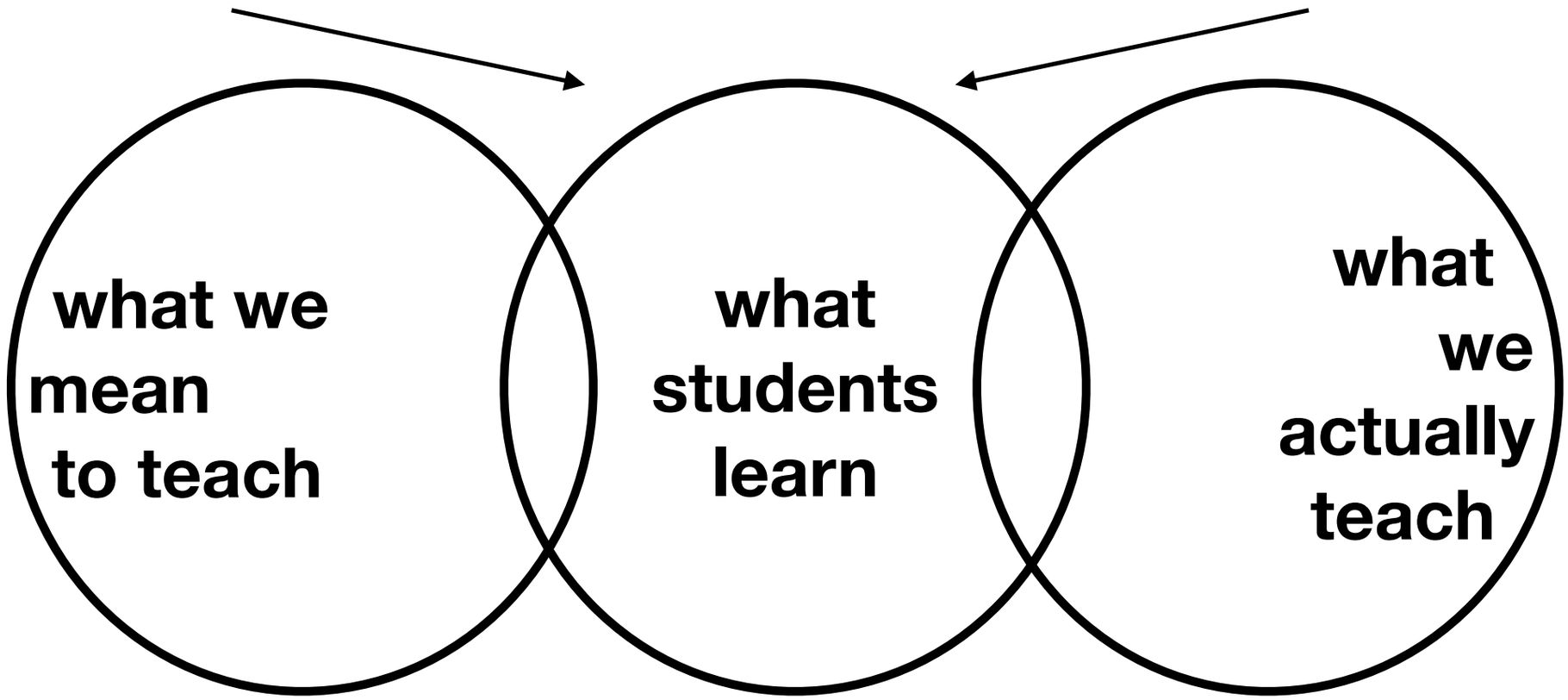
Teaching of soft technique

The hard enables the soft

We learn to do to learn to be

The grist

The mill



learning outcomes

love of learning
attitudes
values
relationships
ways of thinking
etc

Heyes, C. (2018). *Cognitive Gadgets: The Cultural Evolution of Thinking*. Harvard University Press.

The tacit curriculum

How to do stuff, getting credentials

How to be human in a human society

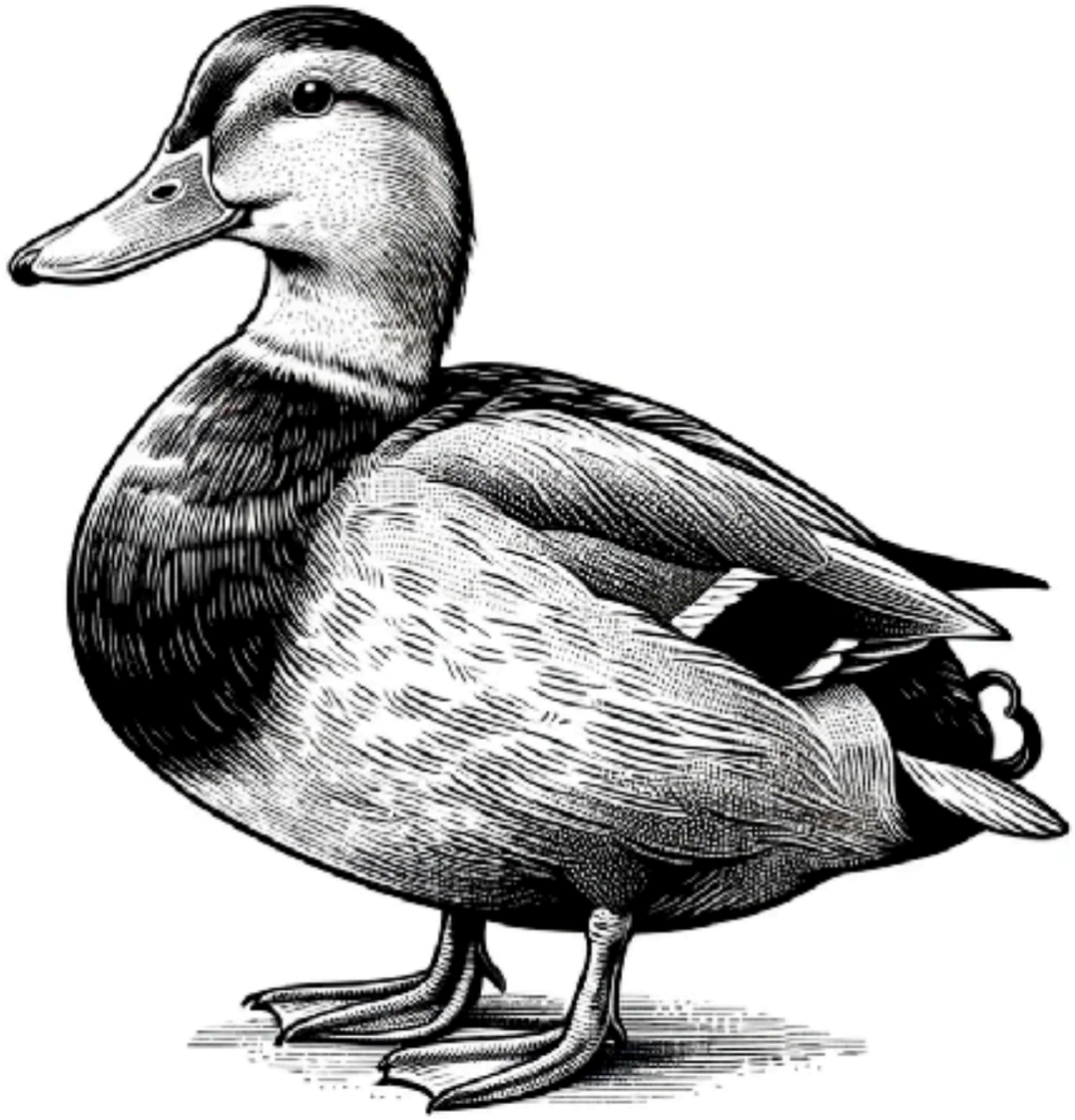
hard

soft

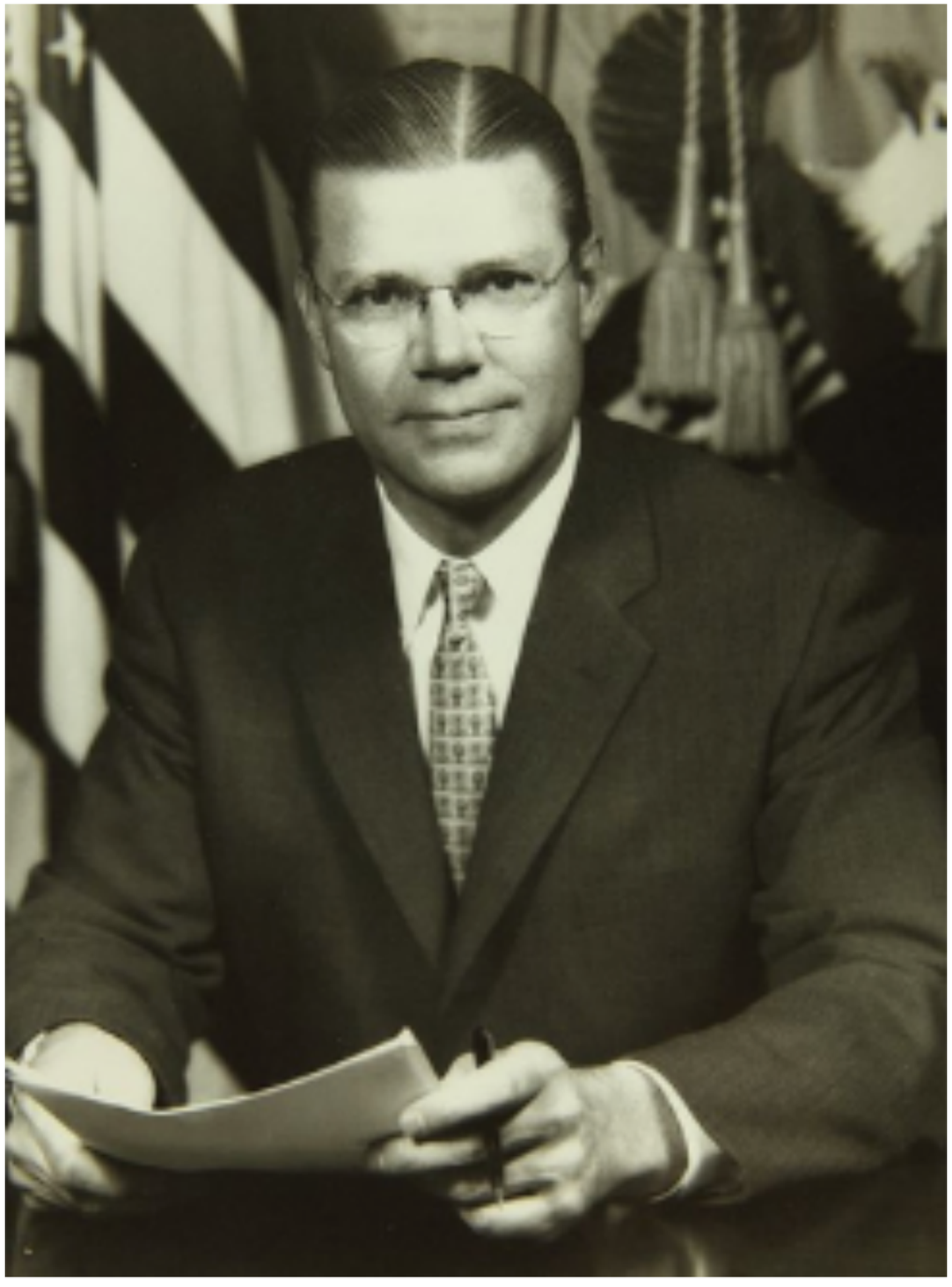
Generative AIs can be an excellent means to improve learning outcomes and educational attainment

(in terms of the explicit curriculum)

If it walks like a duck…



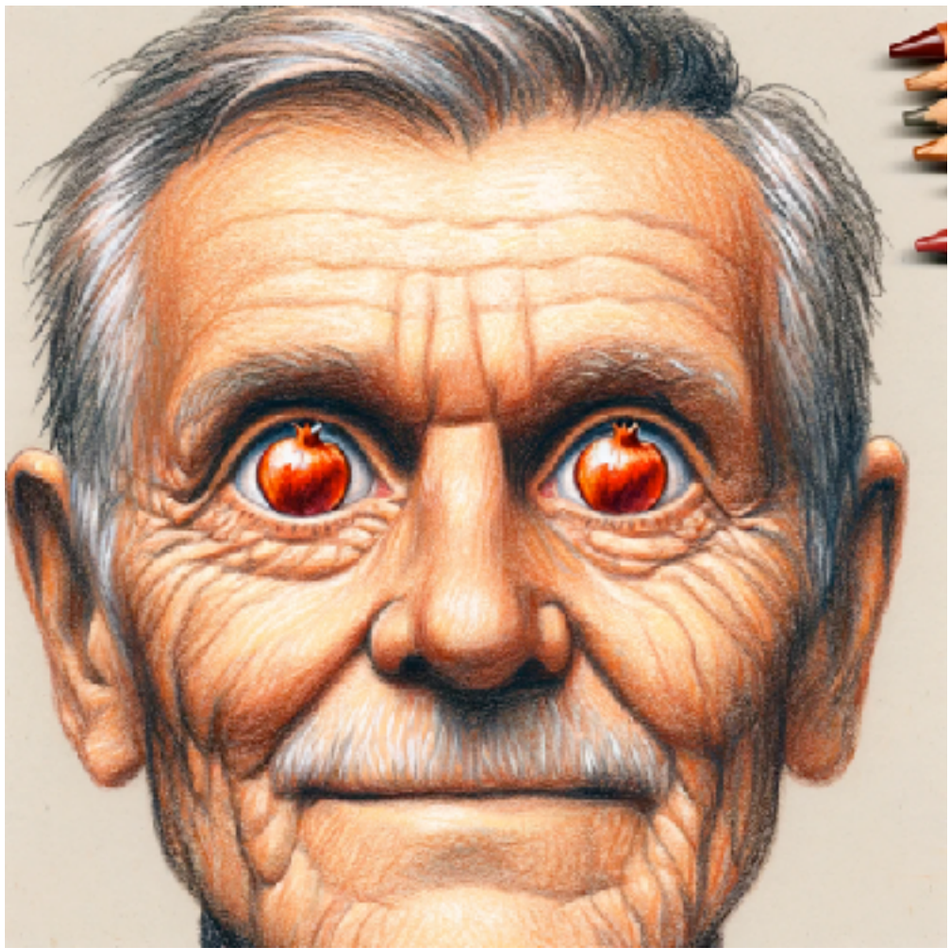
But…



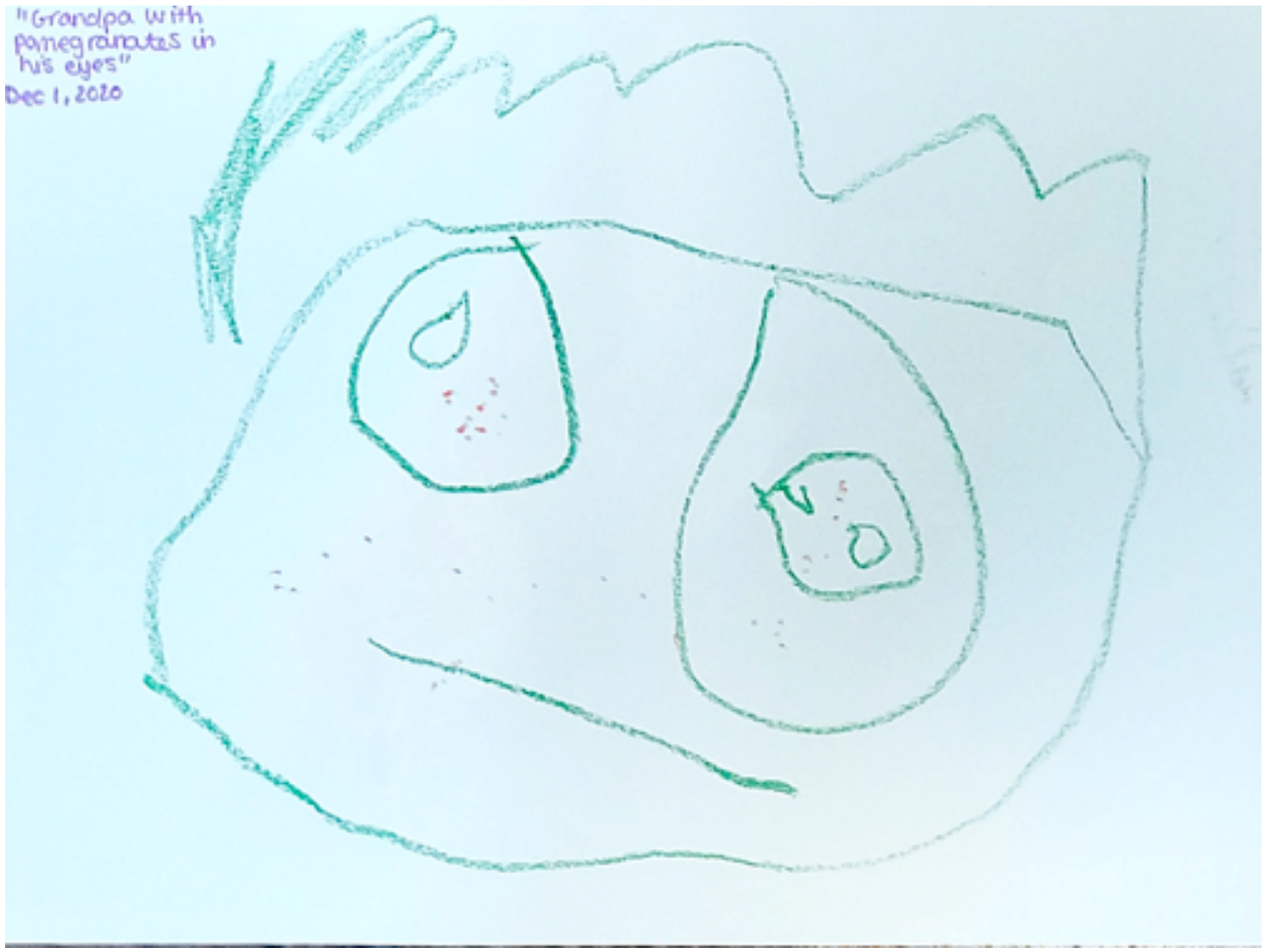
What happens when we learn to be human from things that are not (quite) human?

What do children learn from stories?

Guess which image I prefer?

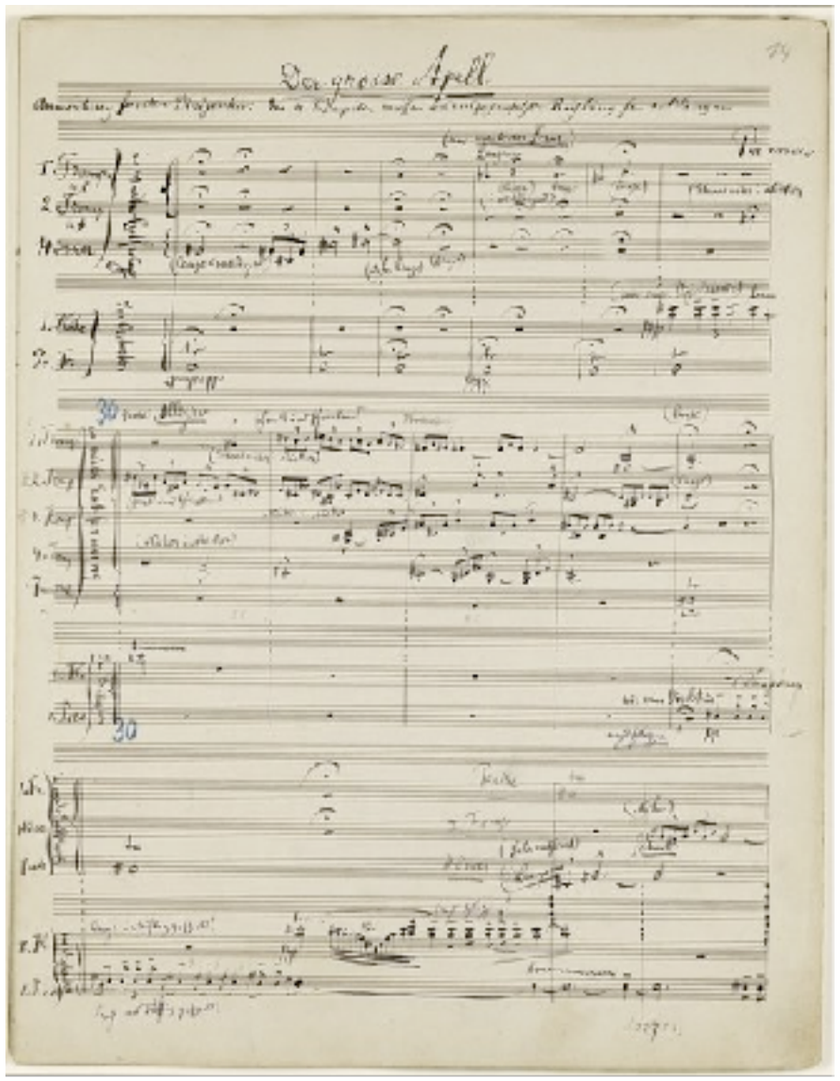


Grandpa with pomegranates in his eyes, by ChatGPT+



Grandpa with pomegranates in his eyes, by Jasper, age 3

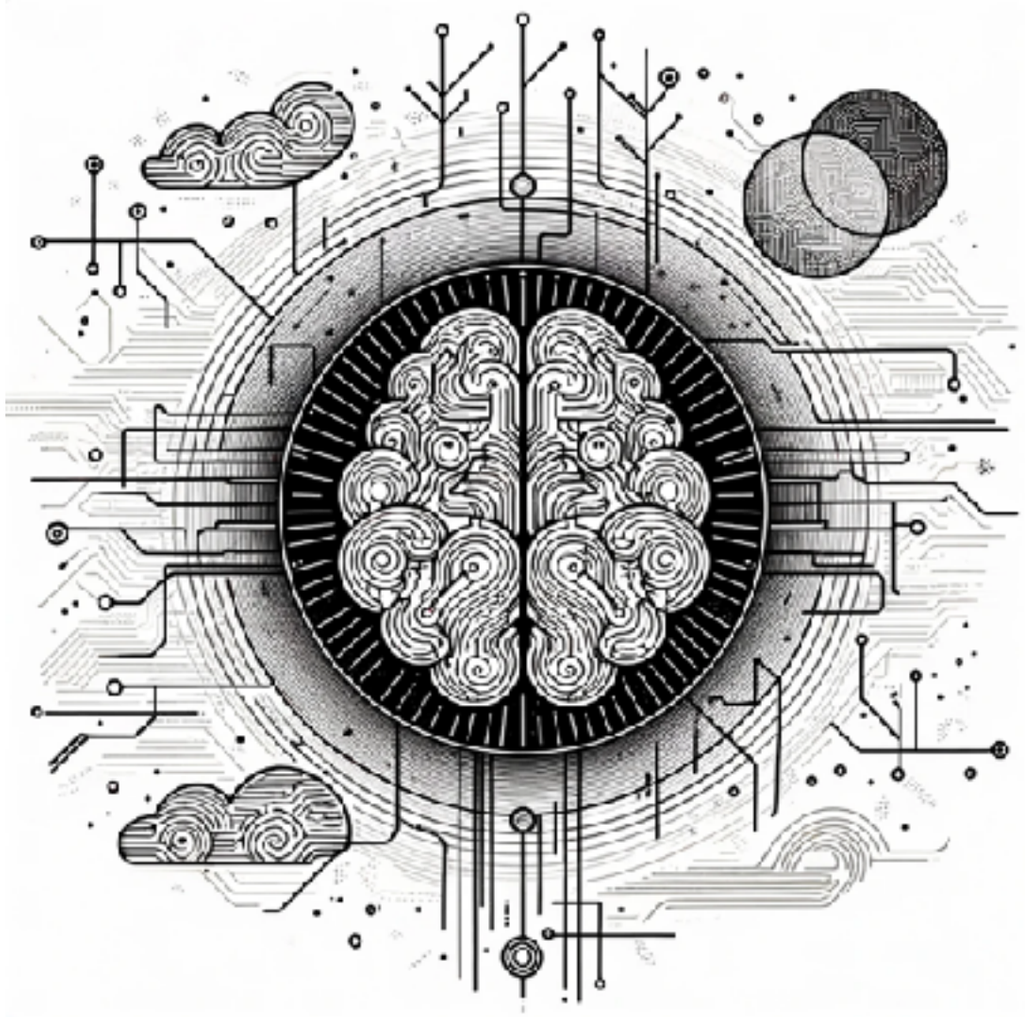
No one will ever pay $5m for an original ChatGPT manuscript



Part of the manuscript of Mahler’s 2nd symphony

Or $2.4m for a mass-produced guitar once played by an AI….

John Lennon’s Gibson J-160E



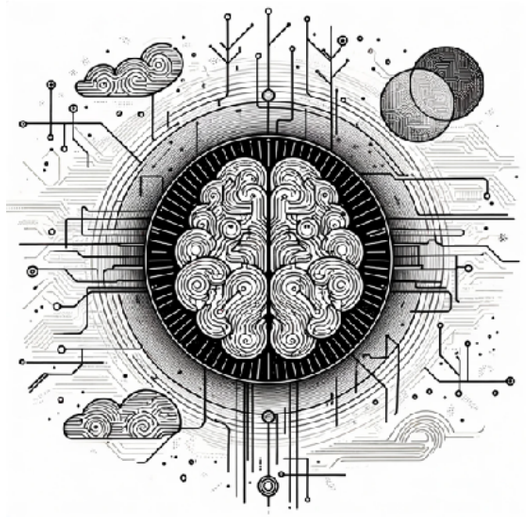
“ChatGPT” by ChatGPT

No skin in the game

No identity

No relationships

No values



No passion

No beliefs

No life history

No intention

(or *all* of them)

Signals without signification

Embodied collective intelligence

“We shape our dwellings and afterwards our dwellings shape our lives”
(Churchill, as interpreted by ChatGPT+)

This doesn’t scale well

A dystopian future?

At *scale*…

Soft skills that atrophy

Soft skills that are never learned

A loss of meaning

A dystopian future?

Learned ways of being that are not quite human

Machines trained on the output of machines

Machines trained on the output of people who are taught by machines

This *will* happen.

generative AI is only the beginning.

So let’s start by fixing education.

re-
valorizing
the human
SCHOOLS

Generative AIs as creative partners, part of a team that can be more creative as a result.

Generative AIs to support human connection

Education as community vs education as product

Refocusing education

With whom

Where

Why

In what way

better relationships, not better methods

Growth

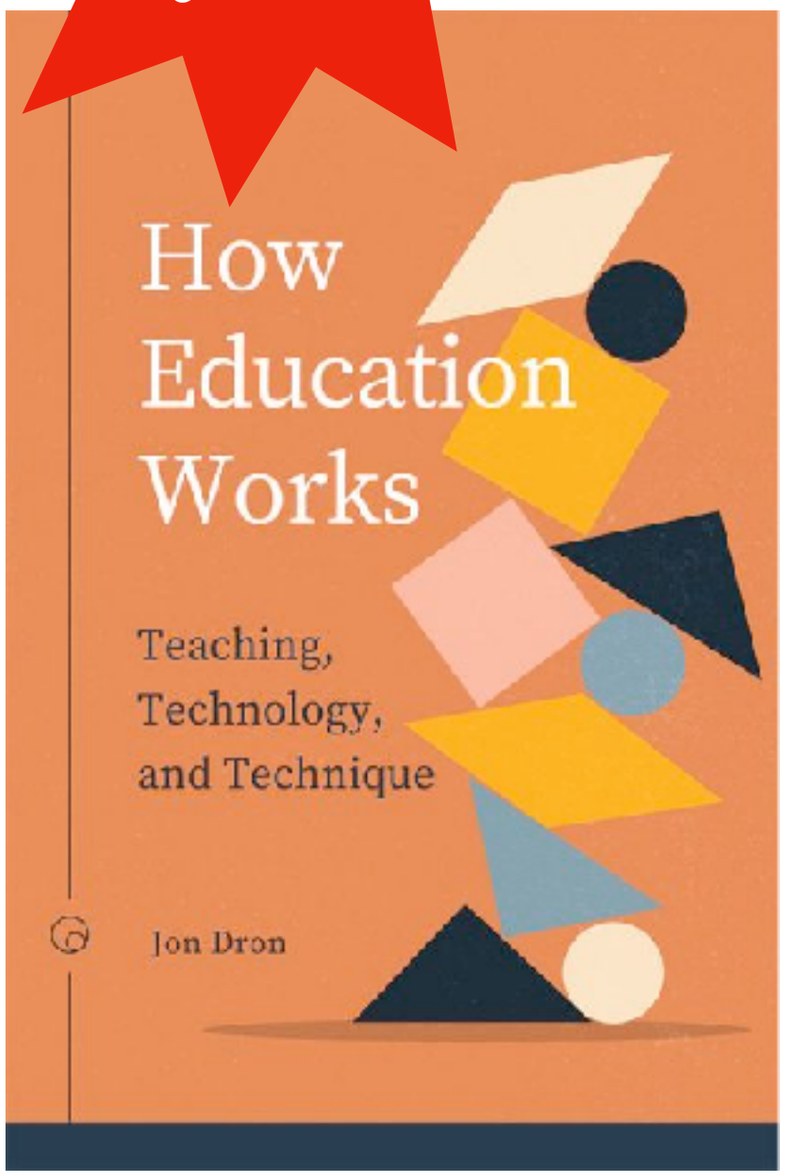
Connection

Meaning

Value

harvest, don’t measure outcomes

Free to read and download



For the theory behind all this, read the book…

https://howeducationworks.ca

Thank you

Here's a paper…

Dron, J. (2023). The Human Nature of Generative AIs and the Technological Nature of Humanity: Implications for Education. *Digital*, *3*(4), 319–335. https://doi.org/10.3390/digital3040020

https://www.mdpi.com/2673-6470/3/4/20

And another…

Bozkurt, A., Xiao, J., Lambert, S., Pazurek, A., Crompton, H., Koseoglu, S., Farrow, R., Bond, M., Nerantzi, C., Honeychurch, S., Bali, M., **Dron, J.**, Mir, K., Stewart, B., Costello, E., Mason, J., Stracke, C. M., Romero-Hall, E., Koutropoulos, A., … Jandrić, P. (2023). Speculative Futures on ChatGPT and Generative Artificial Intelligence (AI): A Collective Reflection from the Educational Landscape. *Asian Journal of Distance Education*. https://www.asianjde.com/ojs/index.php/AsianJDE/article/view/709

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