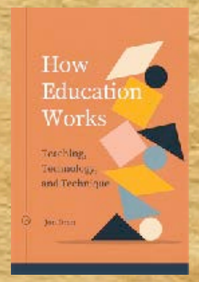
CC BY SA

jond@athabascau.ca
https://jondron.ca

It's a technology problem

How education doesn't work and why we shouldn't fix it

TRU Teaching Practices Colloquium



Jon Dron, February 2025

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

IFNTF
International Federation of National Teaching Fellows

“When you invent the ship, you also invent the shipwreck; when you invent the plane you also invent the plane crash; and when you invent electricity, you invent electrocution.”

Paul Virilio. *Politics of the Very Worst*, New York: Semiotext(e), 1999, p. 89

en Français - *Cybermonde, la politique du pire*

What do you get when you invent education?

Monkeys' Paws and Faustian Bargains

Make a wish!

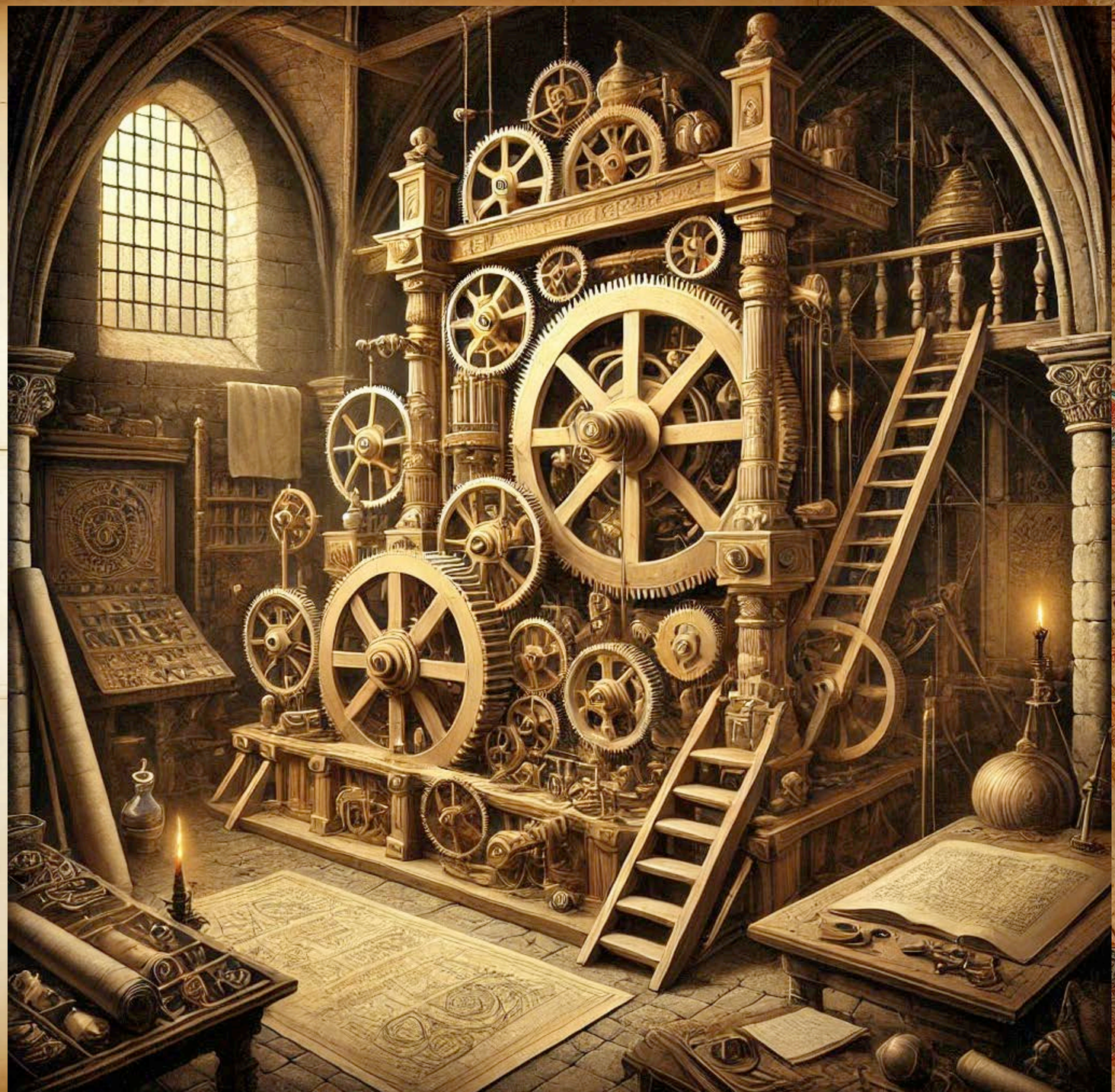
Technology

Me:

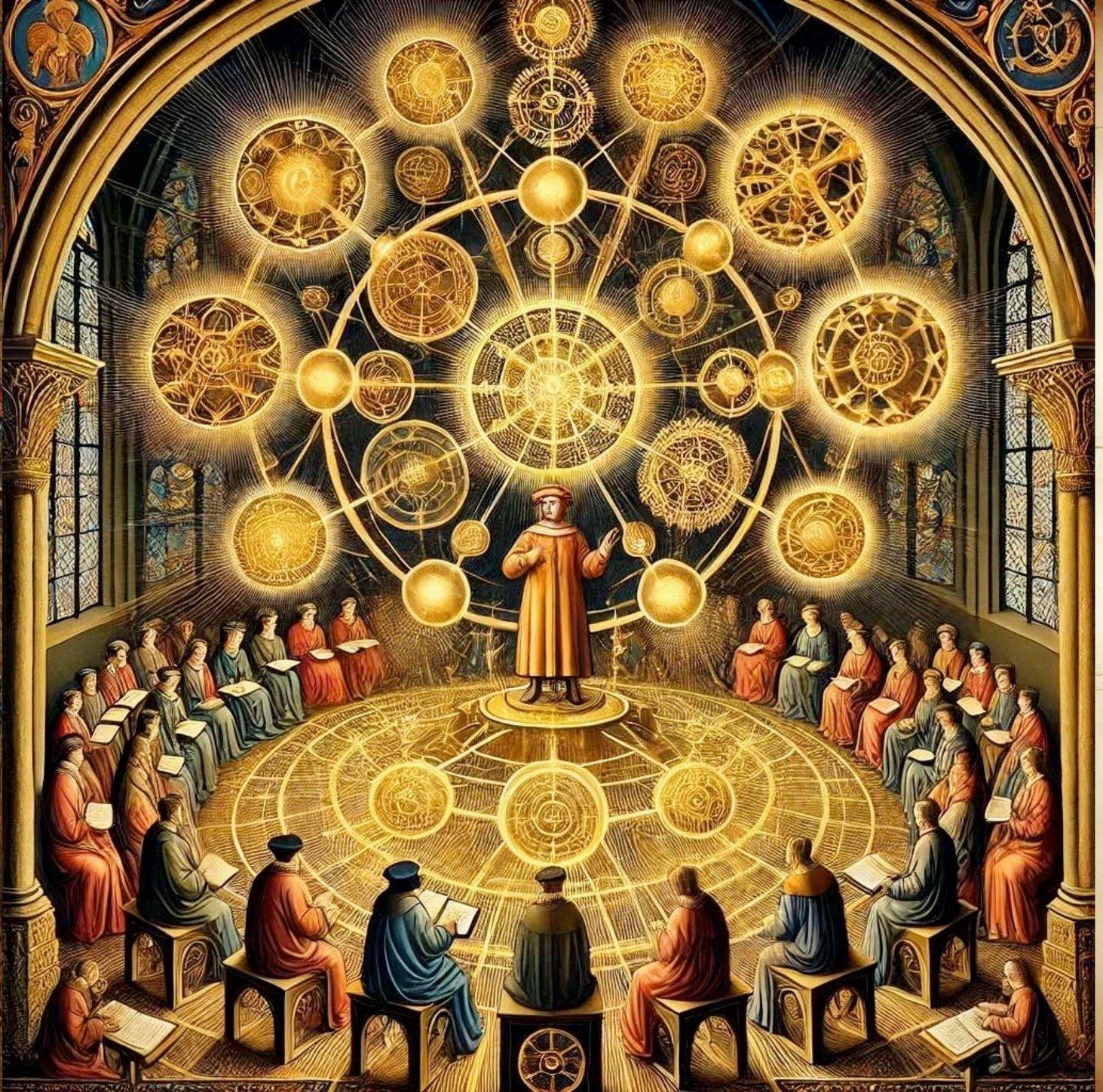
Organizing stuff to do stuff

W. Brian Arthur:

The orchestration of phenomena to our use



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

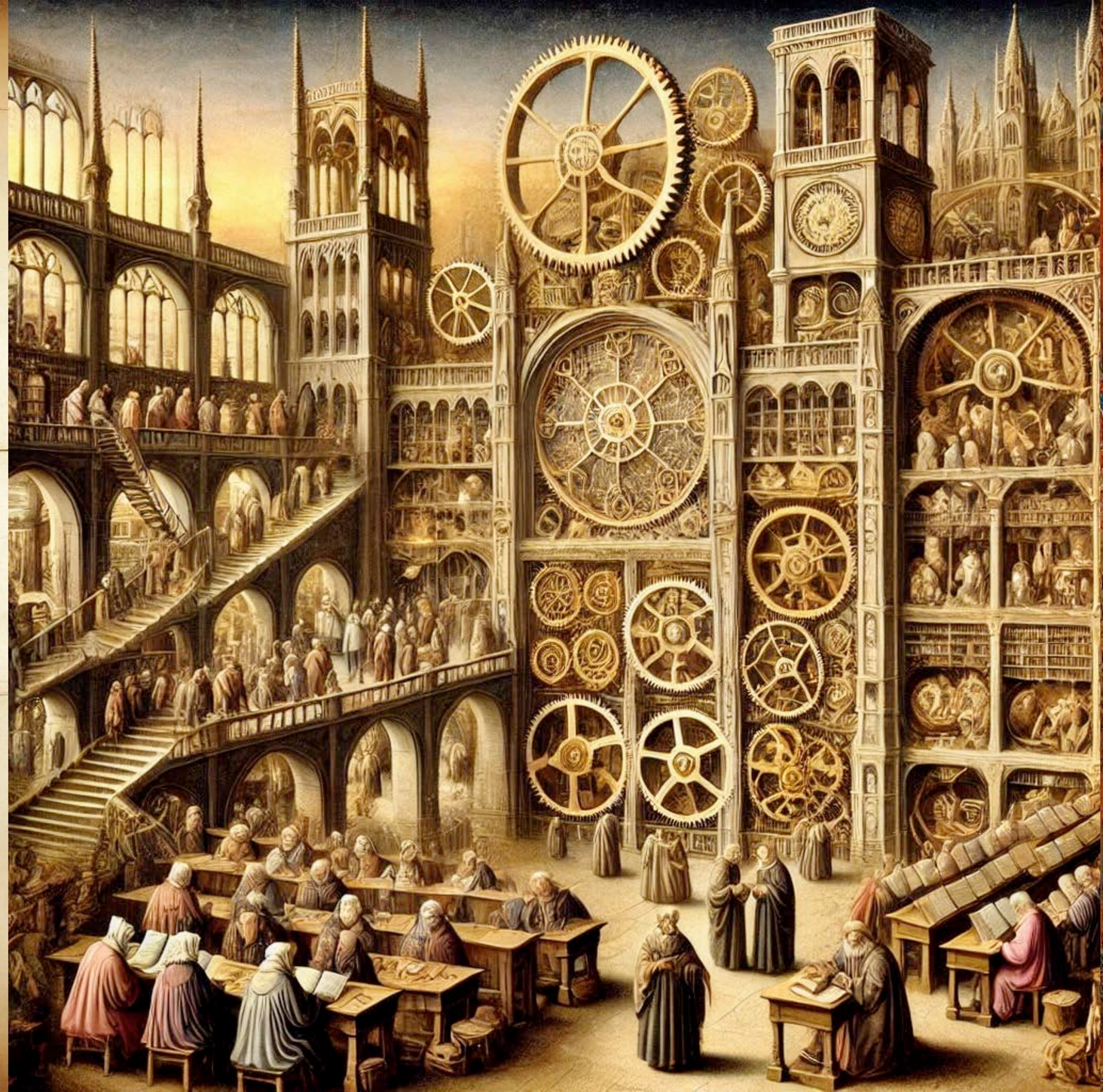


Any stuff.

Including stuff organized to do stuff

An institution **is** a vast technology.

It is **part of** a vaster web of technologies, and **consists of** vast numbers of technologies



Pedagogies (methods of teaching) are technologies, too

you are a learning technologist

Everything is intertwingled.

There are no naked pedagogies

Technologies are **assemblies**.

And we are parts of them and they are parts of us

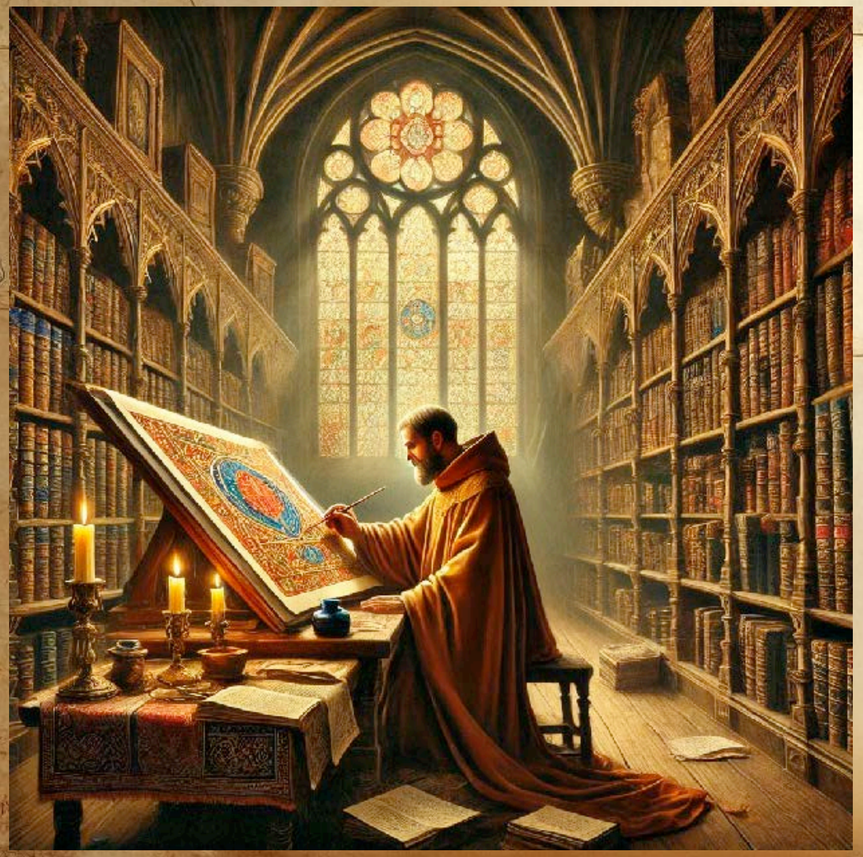
Adjacent possibles and path constraints

counter-technologies

Each use of a technology is also a technology

humans as parts of the organization of stuff

vs.

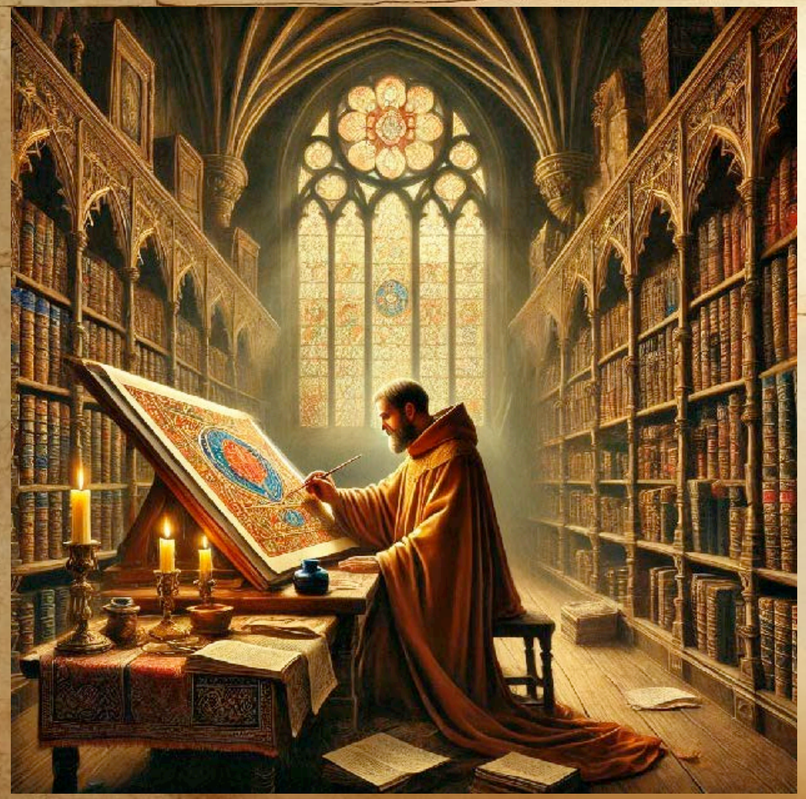


humans as organizers of stuff

(usually both)

hard technique

vs.



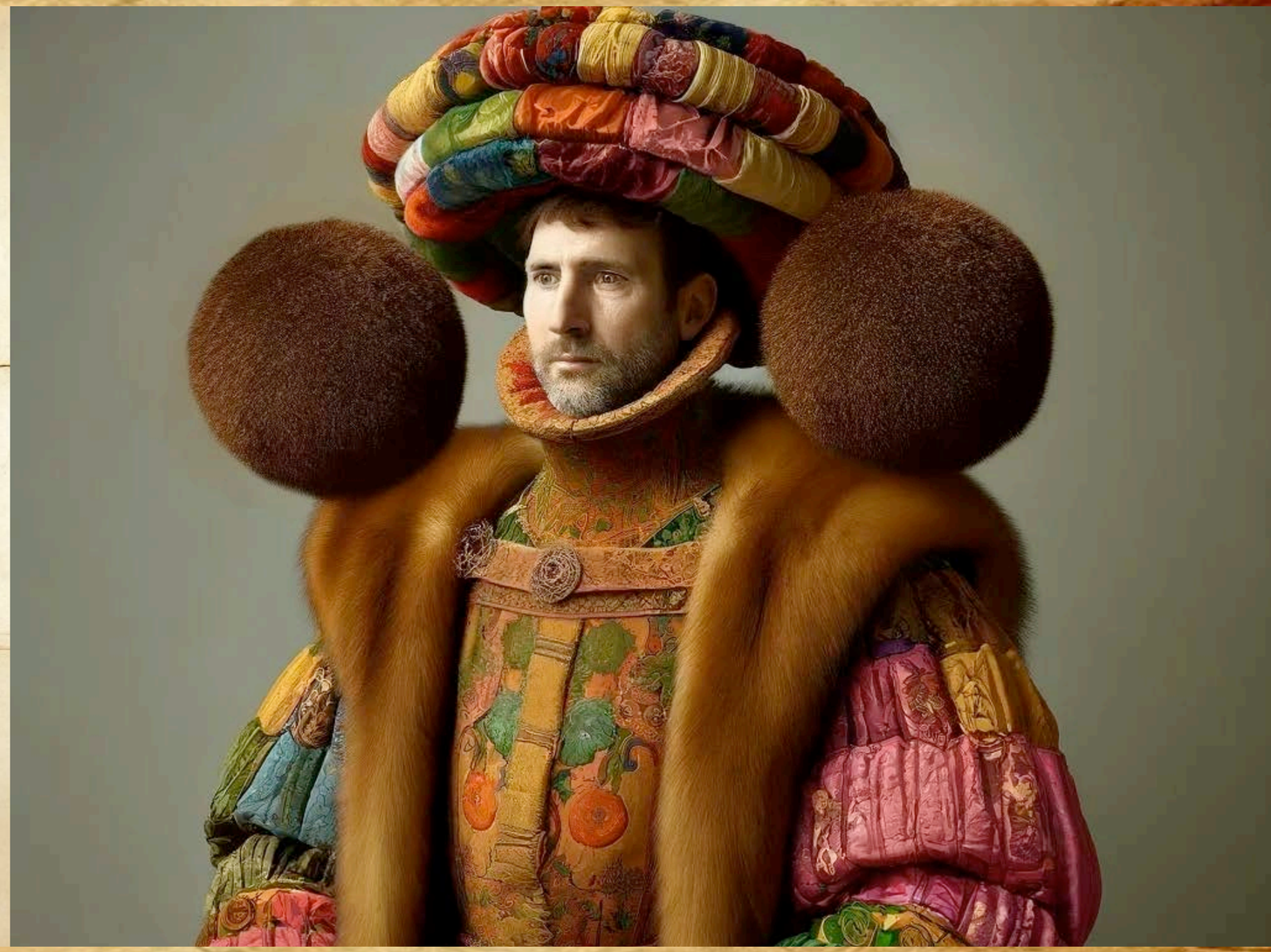
soft technique

T’ain’t what you do, it’s the way that you do it

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

how everyone else does it (especially learners),

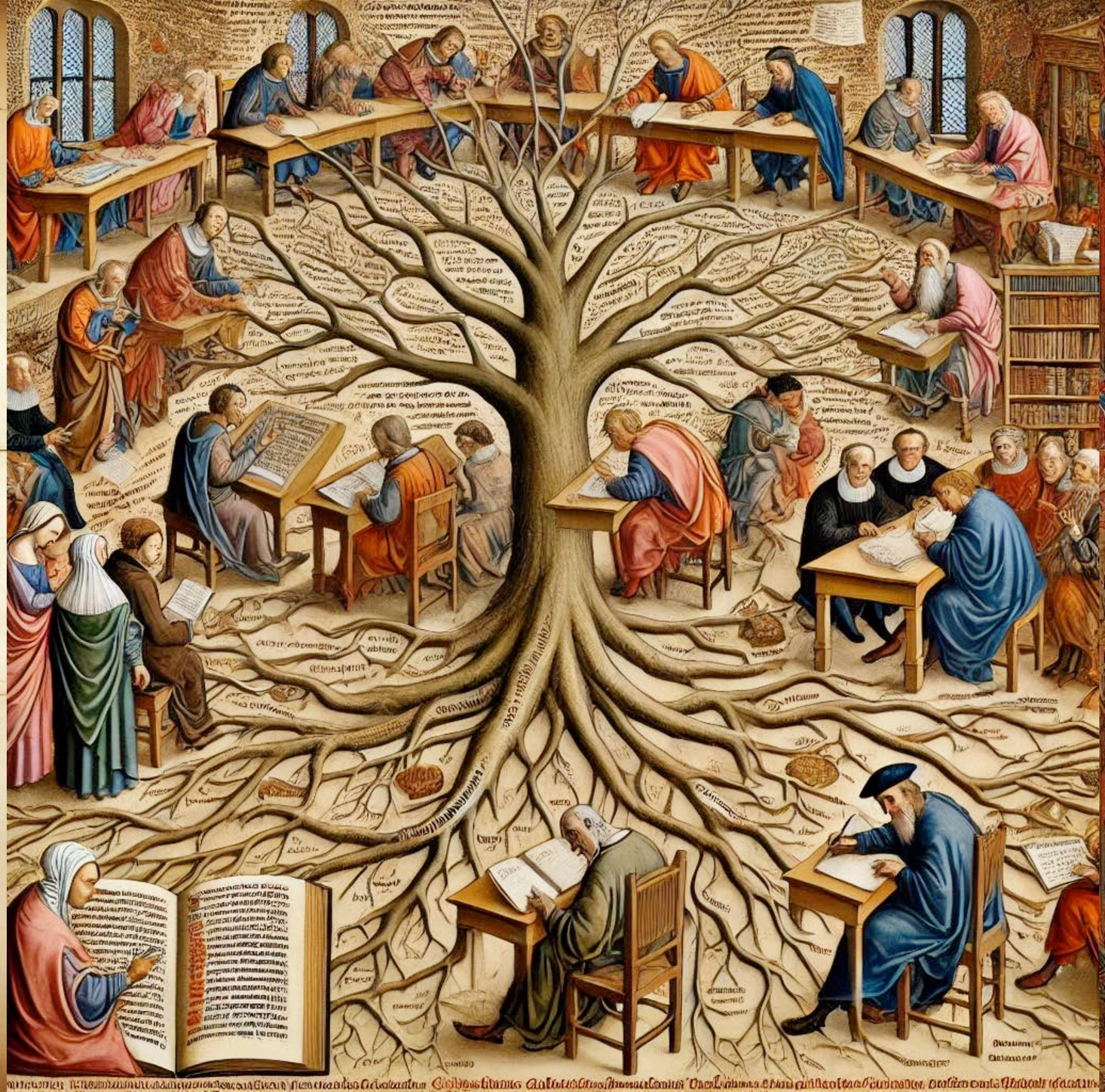
and how it fits with all the other stuff



That’s what gets results

Education is not not just a result of teachers teaching.

Institutions teach



ONLY THE WHOLE MATTERS

Teaching is weird

Good methods often fail.

Bad methods often succeed.

It can work without a teacher.

So, it’s a technology.

But what is education *for*?

What is the stuff it does?

The weirdest thing about education

Why?

Demand

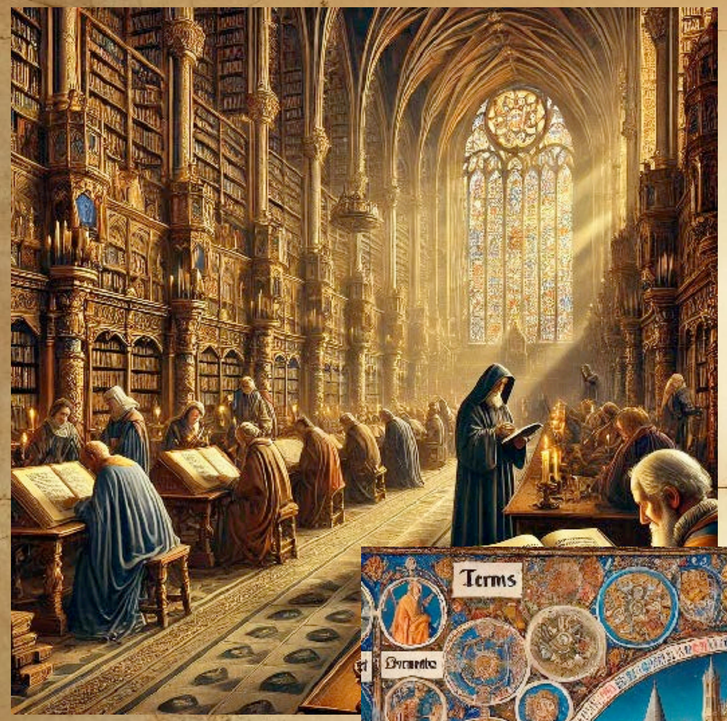
Scarcity

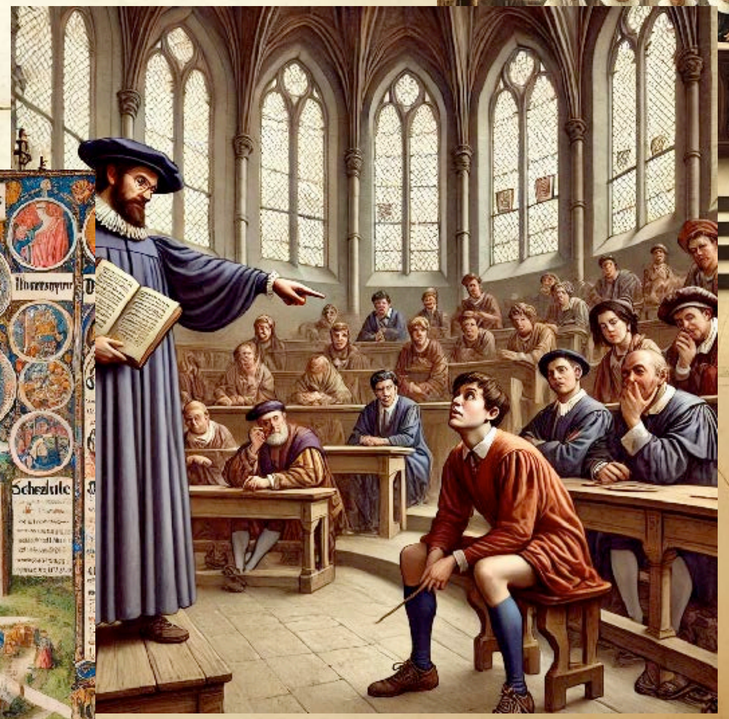
Physics

society and culture

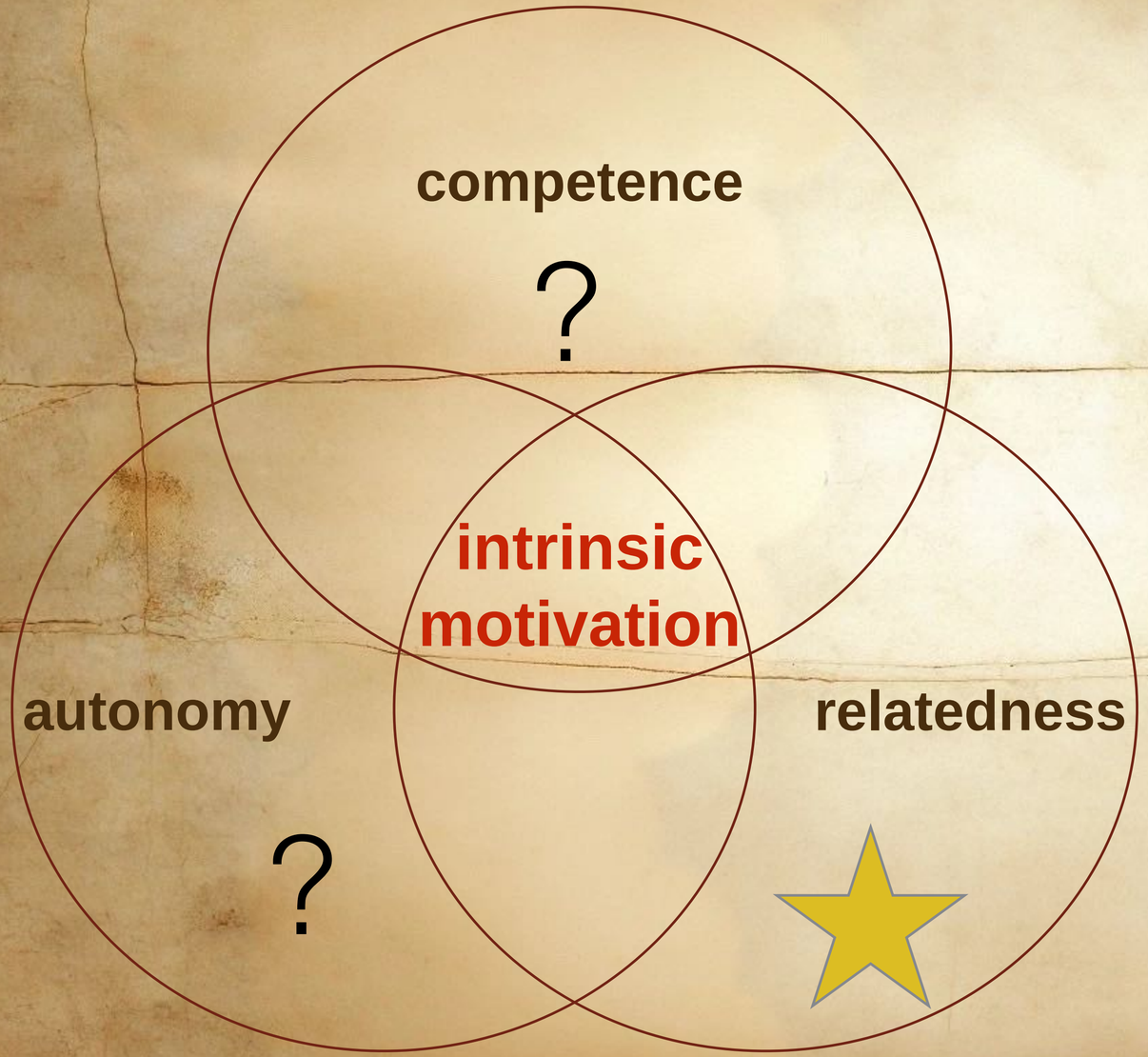
A practical solution (given the adjacent possibles)

and so…



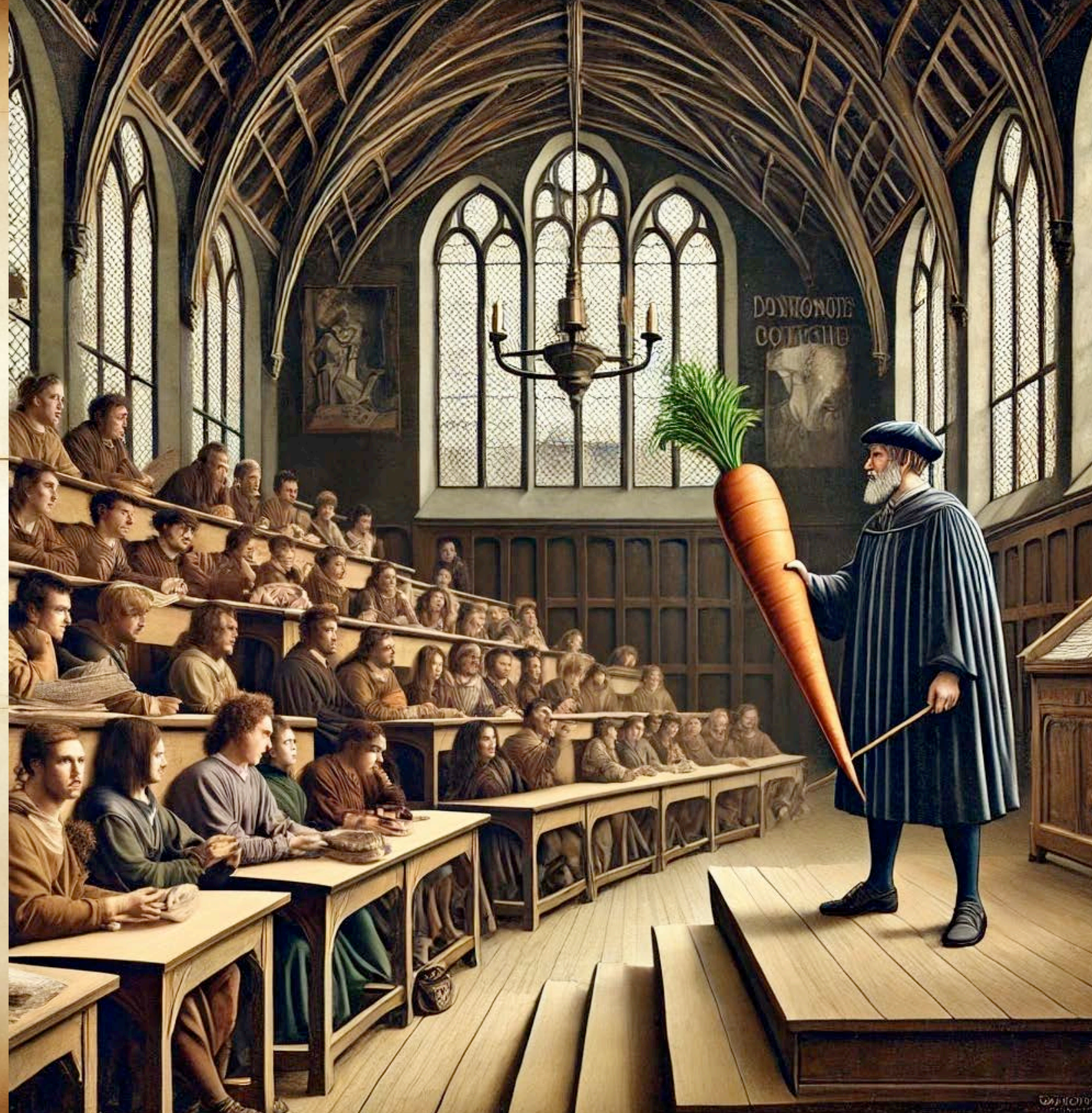


Classroom motivation



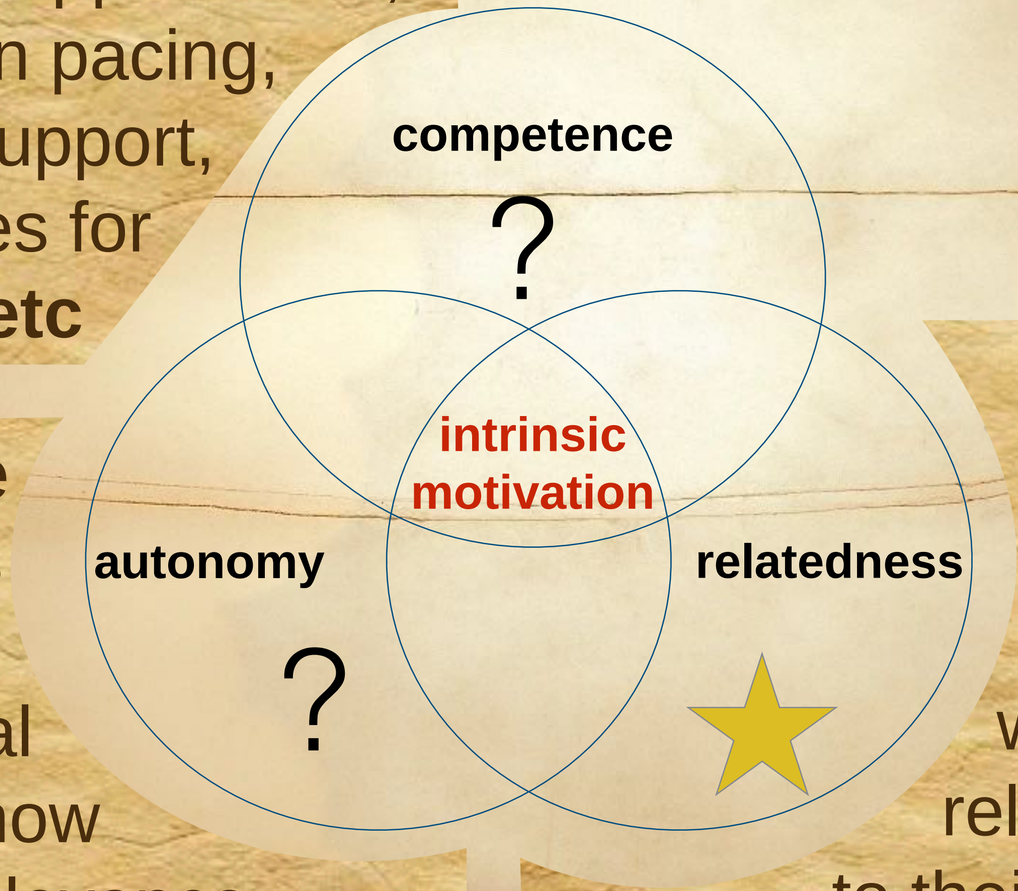
http://selfdeterminationtheory.org

Grades, punitive schedules, fixed pace, boredom, confusion, disempowerment



Counter technologies and adjacent possibles to restore classroom motivation

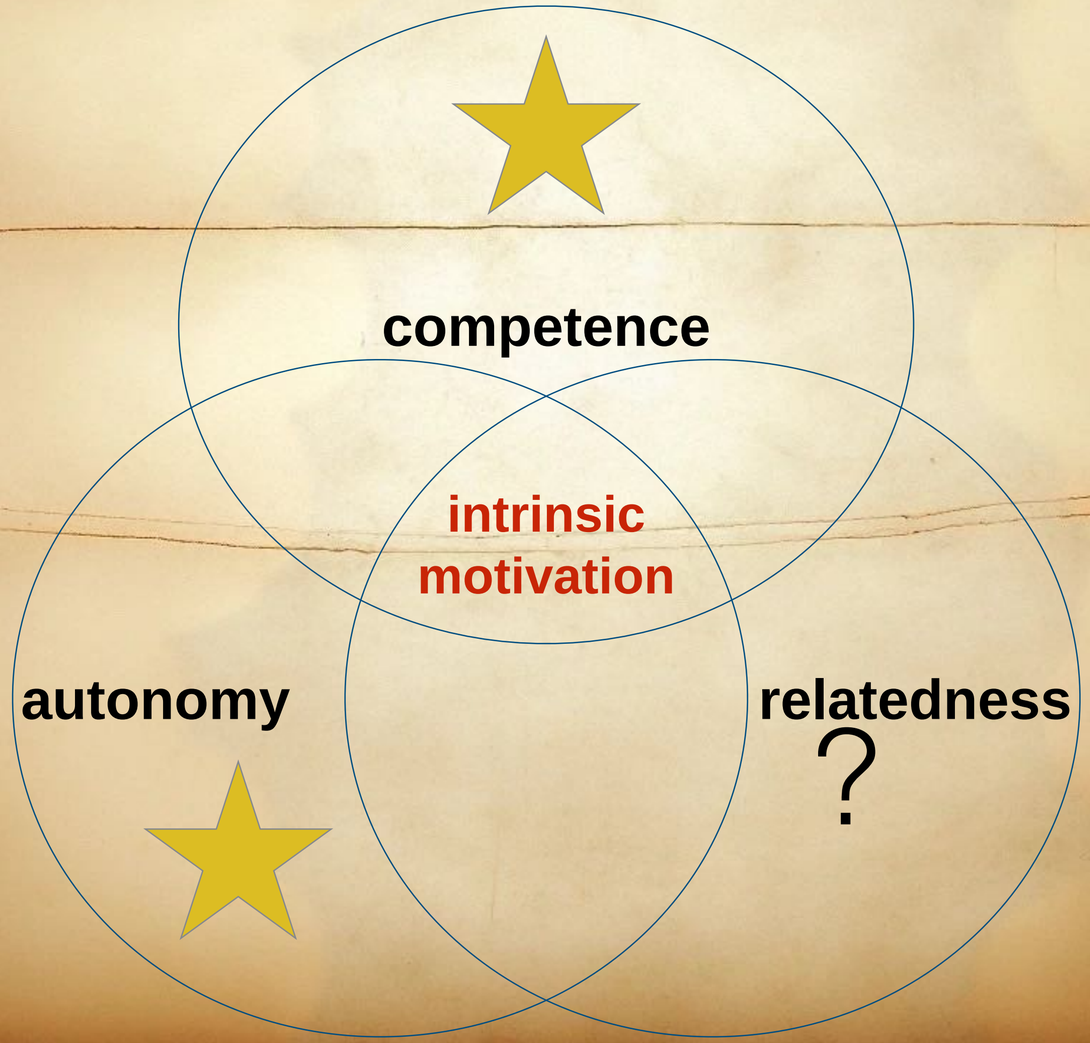
allow for different capabilities, interests, approaches, differences in pacing, foster peer support, make opportunities for feedback, **etc**



give learners autonomy, support personal goals, show personal relevance, incorporate existing skills, **etc**

let teachers show they care, help students to support one another, work together, see relevance to their communities, **etc**

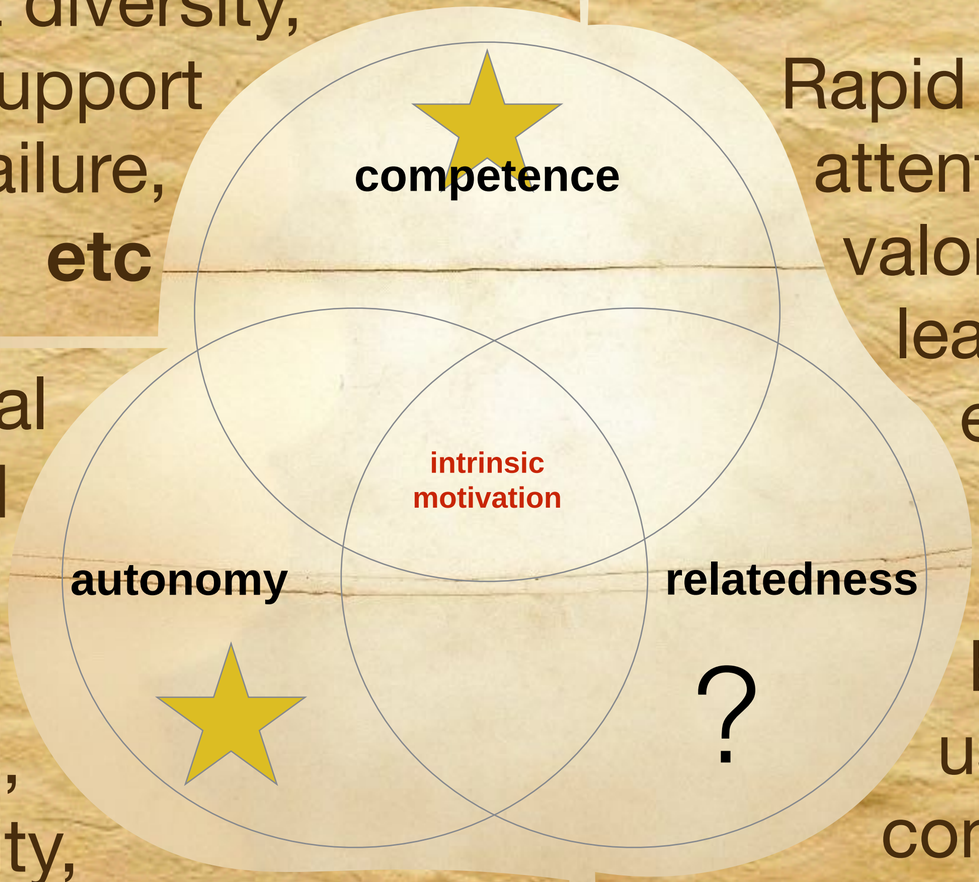
Online motivation



So, why?

Online motivation: adjacent possibles and counter technologies

Give choices, support diversity, curate-don't-dictate, support self-pacing, valorize failure, **etc**



Rapid responses, giving (time, attention, praise, responsibility), valorize sharing, visible learning, modelling engagement, shared activities, online discussions, trust building, personal profiles, use the place and communities students already belong to, **etc**

integrate personal interests and environments, student-defined outcomes and goals, respect diversity, multiple paths to success, open timelines, **etc**

Should we just start again?

there is no science of teaching

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

(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

merely the mechanical

as an

tool of a method

tially be

The McNamara Fallacy

https://en.wikipedia.org/wiki/Robert_McNamara

Generative AI

the tacit curriculum

What kinds of technologies do we want to be?

Harvest, don’t measure outcomes

Make learning **visible**

Valorize **diversity**

Personal, not personalized

Make **caring** visible

Feedback and support, not grades

Make learning **safe**

Build **connection**

Passion

for learning, for teaching, for the subject

Compassion

for learners

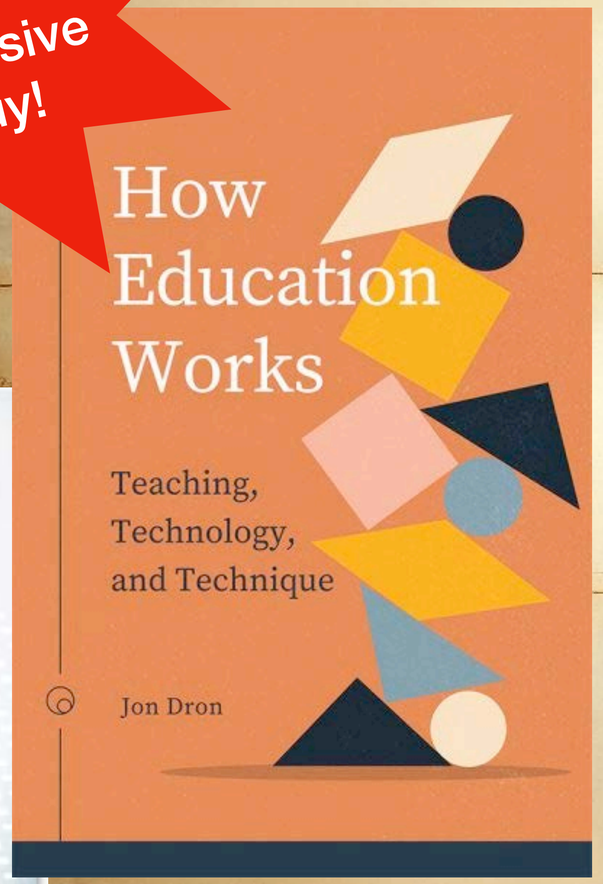
Skill and talent

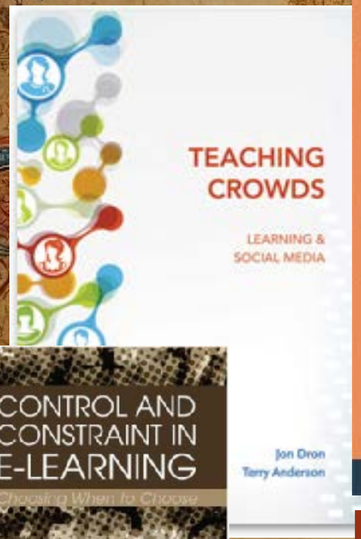
in all the technologies that matter (pedagogy, tech, content, organization, performance, etc)

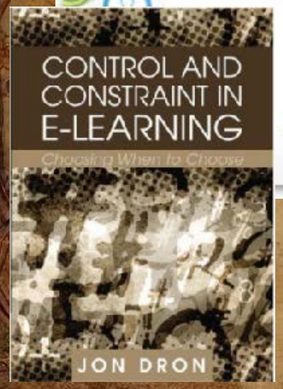
Understanding

of the whole (especially how learners are learning)

Free to read, inexpensive to buy!







https://howeducationworks.ca

Thank you

✉ jond@athabascau.ca

https://jondron.ca/

@jondron@mastodon.social

@jondron.bsky.social