

Ruinous EdTech

Higher Education and the responsibility of computing's excesses.

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- 1. The Problem**
- 2. Power dynamics**
- 3. Oppositional knowledge**



1. The Problem

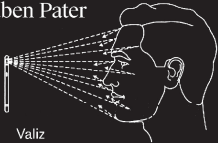
“We are living amid the mounting consequences of believing human actions to be independent of the world of which we are a part.” Crary (2022)

Edtech: no longer a study of technology used to enhance education, rather technology that is a condition of education.

CAPS LOCK

HOW
CAPITALISM
TOOK HOLD
OF GRAPHIC
DESIGN,
AND HOW
TO ESCAPE
FROM IT

Ruben Pater



ISBN 978-90-6369-422-7



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Valiz

Graphic design (CAPS LOCK – Ruben Pater)

*Capitalism could not exist without the coins,
banknotes, documents, information
graphics, interfaces, branding, and
advertising made by graphic designers.*
Pater (2021)

Computing's excesses:

- always on
- infinite storage
- streaming
- multiple devices
- trending upwards (LLMs, AI, VR, AR, ...)

(Selwyn 2022)

Problematism – Climate & Ecological Impact

- Only **20%** of computing's ecological footprint comes from electricity usage; **80%** stems from the **hardware manufacturing** (mining, manufacturing, transport).
→ *This was until AI came by*
- Data-centre power draws strain national grids – e.g., Dublin's 2022 installation of **105 diesel generators** for AWS backup.
- By 2027, **≈ 31 % of Ireland's grid consumption** is projected to be data-centre-driven.

Computing's commercialisation of its excesses:

Among the companies that have been recorded paying for lobbying (Green 2021) against the 'right-to-repair' are the usual suspects, Apple, Microsoft, Amazon, Google, Facebook, but also Tesla, Johnson & Johnson, AT&T, John Deere, Philips, eBay and Caterpillar.

400,000,000 computers

“400 million computers that [...] enter the waste stream, [due to Microsoft stopping the support for Windows 10] That’s a disaster, just in terms of the sheer volume.”

Koebler (2025)

This is despite “Microsoft calling Windows 10 ‘the last version of Windows’”.

Warren (2015)

RIP Moonshot

“RIP to Microsoft’s moonshot. 2020 – 2025.
Born in an era of ‘climate pledges’, months after
the 2019 global climate strikes. Found dead in
May 2025, crushed under big tech’s generative
‘AI’ stampede.”
Joshi (2025)

Computing's excesses

[...] the rapid pivot to AI has already blown several tech giants' sustainability pledges entirely apart

Pasek (2025) Rathi et al. (2024)

'I don't think there has been a reckoning, in the Climate Justice movement, about what it means to have been duped, so badly, by tech companies who made these promises, with zero intentions of actually taking business decisions to make them happen in reality.'

Joshi and Marx (2025)

Compute Maximalism

“The computational technique of brute-force testing in AI training runs, or systematically gathering more data and using more computational cycles until a better result is achieved.”

Crawford (2021)



FROM THE BOG TO THE CLOUD

DEPENDENCY AND ECO-MODERNITY IN IRELAND

While some commentators fret over the existential threat of sentient robots, the far more material and present threat of AI's resource requirements is poised to derail any slim hopes of decarbonisation and a liveable planet for the majority.

Bresnihan and Brodie (2025)

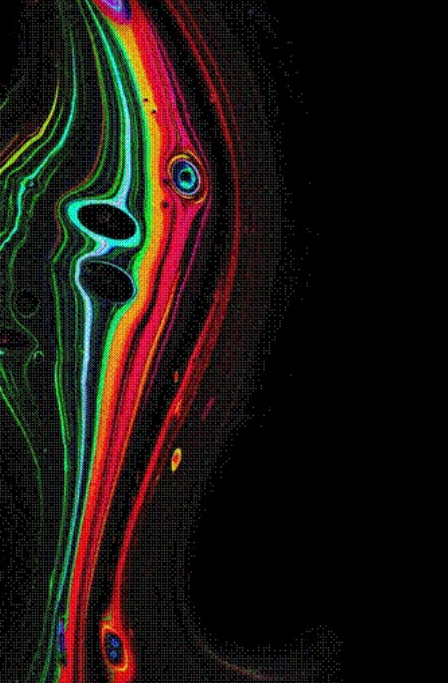
Entirely [out]matched energy growth

[In Ireland,] [g]rowth in data centre electricity demand has entirely matched growth in wind energy production since 2017

Daly (2024)

Gatekeepers and tollbooth operators

- Big Tech used to 'only interpose itself between the user and the digital experience, in order to make money from it.
(Pollak and Linehan, n.d.)
- In the advent of generative AI and large language models, these companies aim to not only be “mere gatekeepers of the world’s information, but its tollbooth operator as well”
(Linehan 2024).



2. The power dynamics

Who benefits, who is harmed, what are the mechanisms of the power impositions?

Higher Education institutions are enablers

- Who enables these benefits and harms?
- Who are the procurement actors who give this access?
- When will the Higher Education sector come to realise that achieving decolonised curriculum goals will have to involve reviewing its digital way- of- doing?

Computing's Colonial Impulse

Ubicomp (Ubiquitous Computing, aka Pervasive Computing, where computing is made to appear seamlessly anytime and everywhere) is considered to have a 'Colonial Impulse'. (Dourish and Mainwaring 2012)

Decolonial Computing

‘a critical project, which is about interrogating *who* is doing computing, *where* they are doing it, and, thereby, *what* computing means both epistemologically (i.e. in relationship to knowing) and ontologically (i.e. in relationship to being).’
(Ali 2016)

Digital Colonialism

- **Micheal Kwet:** a handful of US multinationals now **colonise digital technology**
- pillars of digital power: software, hardware, networks
- Mirrors historic land-based colonisation – extraction, control, and exploitation

Empire of AI

- **Karen Hao** (2025) warns of an emerging **AI empire** built on opaque models, data hoarding, and geopolitical leverage
- AI systems become instruments of **soft power**, reinforcing existing hierarchies

Permacomputing as a Decolonial Computing project

- Decolonial computing provides the **critical lens**; permacomputing supplies **practical workings**



3. Oppositional knowledge

Oppositional knowledge is knowledge that is “instrumental in the formation of critical attitudes towards dominant power and [lead to] actual participation in oppositional action” (Lee (2015))

Permacomputing

Artist programmer Ville-Matias Heikkilä, aka Viznut, coined the term in a text he published on his website in 2020.

Permacomputing is both a concept and a community of practice oriented around issues of resilience and regenerativity in computer and network technology inspired by permaculture.

☪️☀️★ -★:✱

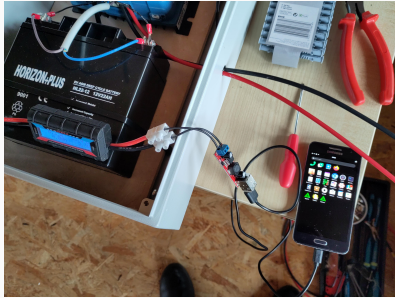
(permacomputing.net, 2025)

Permacomputing

“Permacomputing is accountable, it **only does heavy computation if this saves resources elsewhere.**” De Valk (2021)

“To reduce the resource use and waste generated by technology, embracing ‘not doing’ aka ‘refusal’ is essential for achieving degrowth.”
https://permacomputing.net/not_doing/

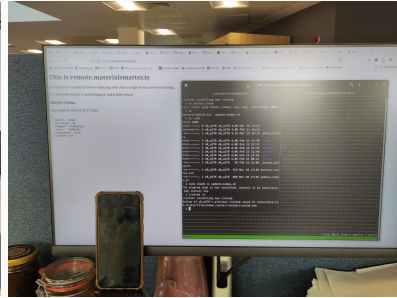
Permacomputing workshops as data collection



1st workshop on small scale power generation



2nd workshop on repurposing smartphones



3rd workshop on (very) small websites



“We view the uncritical embrace of displacement AI within higher education as an accelerant to its toxic trajectory towards commercialisation, commodification, and co-option by extractive and exploitative companies.”

<https://climatejusticeuniversitiesunion.org/statements/statement-on-AI/>

Concluding

- Update Digital Citizenship Education for the **post-digital era** Webster (2024)
- Beware of **Smart Universities** Ovetz and Weinberg (2026)
- Reclaim **Digital Sovereignty** Rikap et al. (2024)

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Thank you

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