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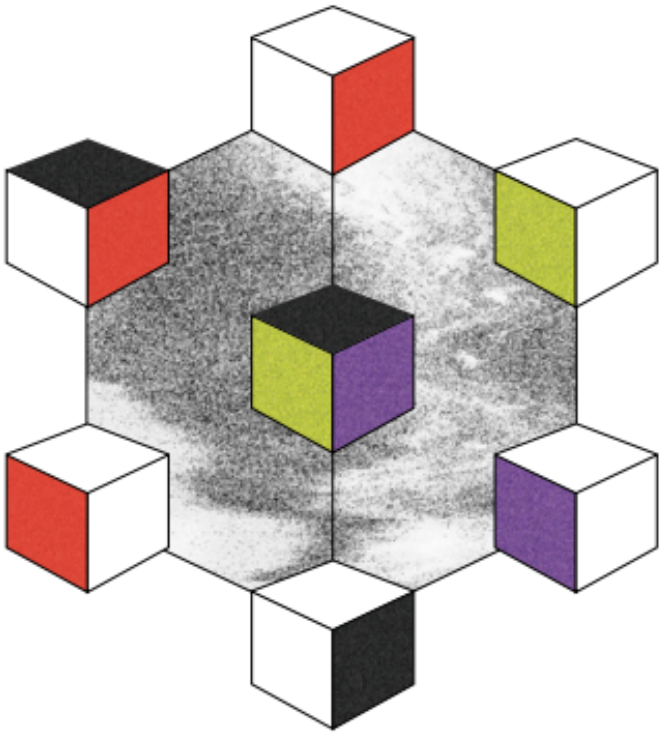
Arts Education in the Age of Machine Learning



Detail from Museum Technology: A Critical Primer, designed by Piquant

Introduction

How to stop a pirate ship from sinking? This is a question that can concern a six-year-old. And, one presumes, a pirate. My son is not a pirate, but he does like to build vessels in his mind, and often on paper, filling them with an array of unlikely gadgets and inventions. On this occasion though, he was troubled with the more practical question of buoyancy. The solution came to him excitedly: “With technology, my pirate ship will never sink!” I considered mentioning the tragedy of another ‘unsinkable ship’ constructed in Belfast over one hundred years ago, which shared a hubristic belief in technological solutions, but thought better of it. What was most striking was that in this comment from one so young was the seed of a belief that the solution to complex

problems is to be found in the application of technology—the ideology of 'techno-solutionism'.

A term coined by critic Evgeny Morozov, technological solutionism is a belief that eschews social and political solutions to complex societal challenges in favour of technological fixes.[1] Solutionism is presenting algorithms as the answer to Ireland's housing crisis,[2] or rejecting climate-change regulation in favour of technological fixes that are yet to be invented.[3]

Yet solutionism can be more mundane. In 2021, while working on a European digital research project,[4] I saw technologies touted as the silver bullet for longstanding problems of access and inclusion in galleries and museums. Data collection that aimed to gain insights about museum visitors even went as far as a museum in Bologna, Italy, installing facial recognition cameras alongside paintings to record visitors' emotional responses.[5] Without a background in technology, I found it difficult to articulate my concerns about the ethics of these practices. Most sectoral forums and websites tended to treat new technologies in a fawning and uncritical way, uncritically reproducing press releases, and neglecting the difficult questions that any publicly funded body should ask. It was out of a desire to interrogate the application of new technologies that the Muse-Tech Working Group was born.[6]

This group brought together a dozen colleagues who represented a cross section of museums and cultural institutions on the island, including the National Museum of Ireland, Crawford Art Gallery in Cork, The Hunt Museum in Limerick, Nerve Centre in Derry, and Donegal County Museum. By and large, members of the collective were not experts in technology but simply shared a curiosity to learn. Every month for nine

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[1] See Evgeny Morozov, *To Save Everything Click Here*, London 2014.

[2] 'Tech startup tackles Ireland's housing crisis by connecting buyers with vacant properties', *Tech.eu*, 5 April 2023.

[3] '"Magical" tech innovations a distraction from real solutions, climate experts warn', *The Guardian*, 10 December 2023.

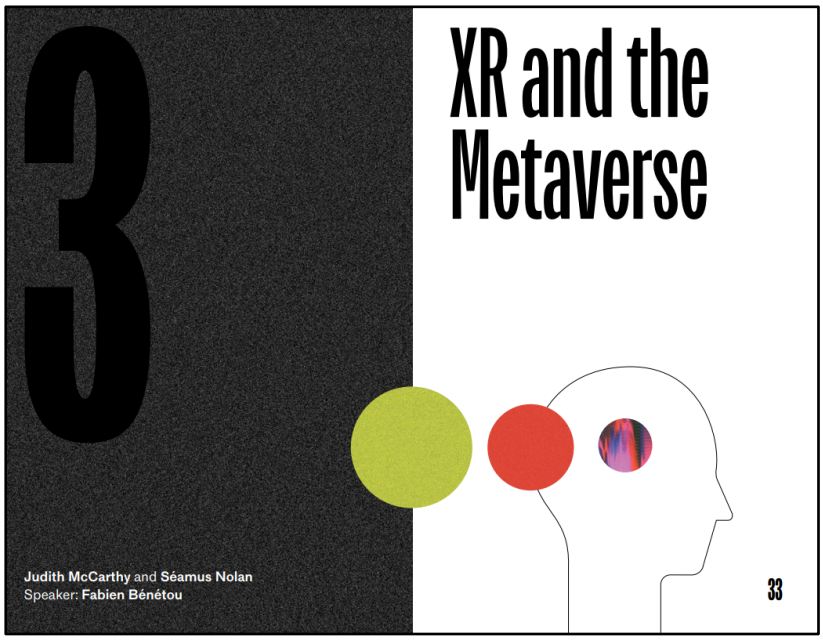
[4] The SPICE Project was an EU Horizon 2020 funded project to develop forms of 'citizen curation' through the application of technology.

[5] 'Italian museum's AI will judge artists' popularity by visitors' expressions', *The Telegraph*, 11 June 2021

[6] The Muse-Tech Working Group was supported by The Irish Museums Association (IMA), The Irish Museum of Modern Art (IMMA), and the Irish Museums Trust (IMT).

months, we met online to discuss a different technology area—from AI, biometrics and blockchain, to gamification, and digitisation of objects and archives. To supplement this schema of topics, we selected critical readings and examined case studies. Guest speakers from civil rights organisations, academia, and the tech industry brought expert knowledge, and useful provocations to our discussions. Over the course of our sessions, the same themes emerged again and again: concerns about bias, privacy and surveillance; the exclusion of those without digital literacy or access to technology; the importance of environmental sustainability; and the problem of short-term thinking when it comes to the funding of digital projects.

At the end of these sessions, we collectively produced a text, *Museum Technology: A Critical Primer*, which reflected on our learnings, introducing key technologies alongside critiques and current debates, situating them in a cultural context.[7]



Museum Technology: A Critical Primer

What of this collaborative peer-learning exercise can be useful for arts educators, artists and teachers? While there have been encouraging developments recently—with the Teachers' Union of Ireland calling for Departmental directions and regulatory safeguards to "embrace the positive benefits of AI and ensure that any risks are

[7] *Museum Technology: A Critical Primer*, Dublin 2022.

adequately mitigated and policed", and the Arts Council's publication of a Digital Arts Policy—few guidelines exist for how digital technology should be integrated or handled inside or outside the classroom.[8] It can feel overwhelming, as if there is pressure to adopt new technologies in our practices, without proper discussion or agreement. Families, educators, and students are rarely involved in the decisions about technology planning and procurement.

The experience of the working group demonstrated the value in critically engaging with technology, and challenging narratives—convenient for corporate interests—that digital transformation is inherently good, progressive, and inevitable. The cultural sector can and should be more assertive, recognising the value humanities can bring to debates about technology, and safeguarding the arts as a vital space in which to interrogate these questions.

Technology is not neutral

In his farsighted book *Technopoly*, cultural critical Neil Postman writes that "Embedded in every tool is an ideological bias, a predisposition to construct the world as one thing rather than another, to value one thing over another, to amplify one sense or skill or attitude more loudly than another."[9] Whereas technology is often conceived as a neutral tool that can be put to better or worse uses, it can be more helpful to think of it as an object or process inscribed with particular qualities or sets of assumptions.

While a potter's wheel and a virtual reality (VR) headset are both forms of technology that you might find in an art room, their differences are illustrative; a potter's wheel emphasises dexterity and haptic perceptions; a VR headset relies on dramatic immersion in our visual and auditory senses; a potter's wheel does not envelop the senses in the same way as VR can, but neither does it harvest data from its users, selling it to other companies to better refine their marketing and products; pottery

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[8] 'AI in education: engagement required to maximise opportunities', TUI.ie, 2 March 2024. 'Digital Arts Policy 2023-2025', The *Arts Council*, 3 November 2023.

[9] Neil Postman, *Technopoly: The Surrender of Culture to Technology*, New York 1992.

wheels do not have powerful corporations promoting their adoption in classrooms, and so on.

This is not to say that potter's wheels should necessarily be favoured over VR headsets (though some potters may argue this), but rather that there are not only practical but also ethical considerations with every technology we bring into the learning environment, and this is especially true for novel technologies.

A paradigm not a tool

Rather than a tool, it may be more useful to think of technology as a paradigm, a reification of a set of assumptions about the world, or a structure of thinking.[10] When digital tablets are introduced in schools and colleges (presented as a solution to issues such as the cost and weight of school books), it is usually described as 'swapping textbooks for technology', as if a tablet does not introduce a fundamentally different learning paradigm as well as experiences that reshape our relationship with the world.

Detail from Museum Technology

[10] This concept of 'technology as paradigm' owes much to conversations with Jürgen Simpson, Director of Digital Media and Art Research Centre, University of Limerick, and guest speaker for the Muse-Tech Working Group.

Without considering the learning paradigms they represent, digitisation can end in failure. A college in Meath that replaced textbooks with tablets for students, was forced to reverse its policy in 2020 following an independent review; parents claimed the policy was "detrimental to our children's education, health and wellbeing".[11] Although distraction was a key theme in the review's findings, it was treated as an incidental aspect of the student's use of the tablets, rather than something deliberately encoded through pop-ups and nudges designed to hold our attention; a feature, in other words, not a bug.[12]

Affordances of the digital

Of course, a critical engagement with the social implications of technologies should be balanced with an openness to experimentation, a willingness to try new methods and practices, and follow creative impulses wherever they lead. In the learning environment, what specific affordances can digital technologies bring?

XR consultant and 'prototypist' Fabien Bénétou told the working group about his use of VR to spatially organise his thoughts, like a memory palace that "can be shared and experienced with others".[13] Here, Bénétou is not exploiting VR for its novelty value or as window dressing but for its inherent qualities—for the paradigm it represents.

Inventive uses of digital technology arose out of necessity during the Covid-19 pandemic. A project led by artist Jo-Ann Hine with three museums in Limerick, 'ABC of the Three Muses', created opportunities for students to engage with objects visually with 2D reproductions, physically with object handling, and digitally, by manipulating 3D scans.[14] This approach emphasised the differences in experiencing a museum object through physical and digital reproductions.

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[11] 'Meath school set to drop controversial iPad-only policy', *The Irish Times*, 17 January 2020.

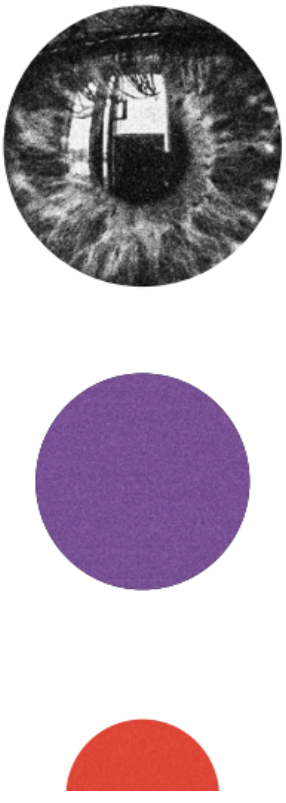
[12] Cora Dunne et al., 'Report of the Independent Review Group on the use of tablet devices in Ratoath College', 15 January 2020.

[13] Fabien Bénétou, presentation to Muse-Tech Group, February 2022.

[14] See the project case study: https://artsineducation.ie/en/project/abc-of-the-three-muses/

Artist and member of the Muse-Tech Working Group, Séamus Nolan utilises the openness of a digitised database and the networked and decentralised features of the internet to form Traveller Collection, part of an ongoing collaborative project with Create, Pavee Point and The Hugh Lane Gallery.[15] The website compiles cultural material relating to Traveller communities from both national archives and personal collections and is open to public contribution. Here a readily assembled, easily accessible 'online collection' shines a light on the archival (in)visibility of Traveller culture within national collections.

In these examples, technologies are used tactically and thoughtfully, their particular qualities inseparable from the end goal, rather than simply a mechanism for efficiency—or as Henry David Thoreau once wrote about technology, as "an improved means to an unimproved end."[16]



Detail from Museum Technology

[15] https://travellercollection.ie/

[16] Henry David Thoreau, *Walden: Or Life in the Woods*, Boston 1854, p. 39.

Affordances of art

Even the more technophobic among us must reckon with the digital paradigms that are reconfiguring how we understand the world and relate to each other. Rebecca Solnit has written about the "social pandemic of loneliness and isolation":

> "The US surgeon general, Vivek Murthy, has declared it a crisis. His reports identify causes including the internet, smartphones and social media. None of these was created with this agenda, but all of them have advanced it. Some of the 'examples of harm' listed by Murthy include 'technology that displaces in-person engagement, monopolises our attention, reduces the quality of our interactions and even diminishes our self-esteem'."[17]

In this context, the physical, experiential encounter with art and art making—the unique haptic and tacit experiences that arts education can provide—are even more vital. So too is the social dimension of experiencing art and culture collectively. Individualised virtual experiences should not replace communal and discursive forms of culture, enjoying and discussing work together.[18]

Educators and education institutions have a responsibility to instill in students an understanding of their digital rights and citizenship, the knowledge, literacy, and skills required to navigate digital environments safely and responsibly. Before using a potter's wheel with a student, one would ensure the student understood how to use it safely, that it is accessible; that the materials are not environmentally destructive etc. Likewise with new technologies, it is vital that students understand what data is being collected, and what can they do if they do not consent.

Fortunately, there are a growing number of resources to help navigate these waters; Defend Digital Me is an organisation that campaigns for a safe, fair, and transparent collection of children's data in education and elsewhere. Founder and Director Jen

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[17] Rebecca Solnit, 'In the Shadow of Silicon Valley', *London Review of Books*, 8 February 2024. For an excoriating and uncompromising critique of technology's negative impacts, see Jonathan Crary, *Scorched Earth: Beyond the Digital Age to a Post-Capitalist World*, London 2022.

[18] See Adam Stoneman, 'What will the "Metaverse" do to art and culture?', *Jacobin*, 24 January 2022. https://jacobin.com/2022/01/immersive-art-entertainment-virtual-reality-vr-metaverse/

Persson writes that it is vital to "understand how children's data is collected—and what schools, the State, and any contracted third parties do with it."[19] Digital civil rights organisation Access Now campaigns on the dangers of biometric surveillance among other issues.[20] Last year saw the launch of Beta Festival in Dublin, an art and technology festival that provides opportunities for the public to critically engage with technology's impact on society through a programme of exhibitions, talks, and performances.[21]

Sinking ships

The Muse-Tech Working Group created a valuable opportunity for peer learning; a space for colleagues to come together and think more deeply about technology in their workplaces; it allowed us to challenge dominant narratives—and each other—reasserting our agency to shape how technology is used in our everyday lives.

Arts education can provide a vital space to encounter the immeasurable and ineffable—the infinitely complex forms of human experience which cannot be captured on a spreadsheet. Unlike techno-solutionism, the arts allow us to explore individual, societal and existential challenges in ways that do not reduce their complexities or contradictions. Next to the noise and toxicity of social media, arts education can, as artist Bernie Masterson put it, "clear a space for shared speech for those whom society has rendered voiceless."[22] A space to dream and imagine other possible futures. In the end, it was art, not technology, that stopped a six-year old's pirate ship from sinking.

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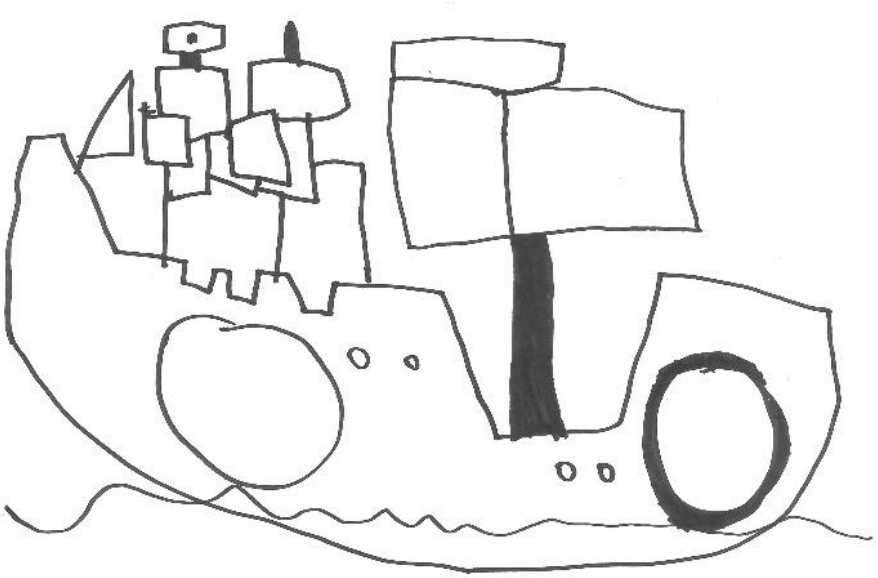
[19] https://defenddigitalme.org/about/

[20] https://www.accessnow.org/

[21] https://betafestival.ie/

[22] Bernie Masterson, in *Incarceration Altars*, Dublin 2017.



Pirate Ship

Further Reading

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