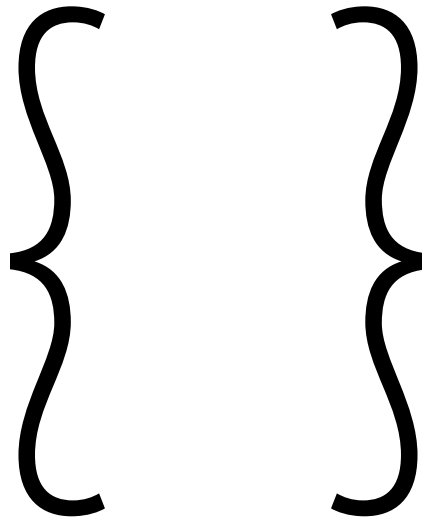


Birk Weiberg, «How to Prepare Art School Students for Tech-Driven Economies? Towards Small and Participatory Technologies», in: Nummer, no. 12, *Algorithms & Imagination*, eds. Orlando Budelacci and Jacqueline Holzer, Luzern 2024, pp. 20–22. doi: 10.5281/zenodo.10912176

Entire issue: doi:10.5281/zenodo.10911813
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How to Prepare Art School Students for Tech-Driven Economies

Towards Small and Participatory Technologies

Birk Weiberg

Since the Industrial Revolution, art and technology have had a complicated on-again, off-again relationship, not without some rivalry between them. Technologists have tended to turn to art in the hope of finding meanings for their creations beyond mere functionality, and artists have been fascinated by what technology can do and have endeavoured to share in its power. The current chapter of this story began in the 1960s with digital technologies, which promised all sorts of liberations – from total automation to scaling without material limits. These

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promises also attracted a third actor, economy, and turned the relationship into a *ménage à trois*, a more turbulent competition for each other's attention. In the twenty-first century, this constellation is dominated by accelerated technological developments and various external crises. Artists, designers and filmmakers face the challenge of finding their place in a digital creator economy shaped by technology and economics,¹ and in the following I explore how art schools should realign their relationship to technology in order to prepare their students for this situation.

Art schools are no longer expected to produce artists, designers and filmmakers, but value-creating members of post-digital markets. This raises the question as to how the schools relate to digital technologies. And this question cannot be answered by the mere replacement of traditional crafts with digital successors. In a situation where technologies are constantly being renewed and creatives are expected to adapt to new techniques, also after graduation, the question of how students experience technology during their studies becomes more relevant than the question of which technologies they learn. However, their learning environment is often characterised by two complementary mindsets. Like all other higher education institutions, when it comes to their own infrastructure, art schools often view digital technologies as complex and potentially troublesome, leading them to externalise them by licensing proprietary software or to offload them altogether to cloud services. This outsourcing is often accompanied by complaints about the quality of the tools supplied, which are simply expected to work. However, this attitude towards technology as a foreign discipline is not self-evident, as a comparison of digital systems with legal systems shows. While not part of an art school's own domain, there is a natural entitlement to be involved in the drafting of legal texts such as study regulations. But in a post-digital university nearly every decision regarding curricula etc. must be rooted in its technical feasibility. Legal and technical systems, both consisting of highly formalised

texts, go hand in hand here, but the latter is usually experienced as inaccessible. This disconnect from technical systems is echoed in subject debates. While a critical attitude towards current technologies is more than legitimate, it should not lead to the renunciation of opportunities to shape technologies.²

Software companies and platform providers have long understood that offering educational discounts is a good investment in creating lasting habits among graduates. It is surprising how much taxpayers' money is being used to educate the future customers of tech companies, especially when compared to current research practices. There is a broad consensus in the scientific community that published scientific output should be open access whenever possible, as it has been financed by the public sector. Regarding research infrastructure costs, there is currently limited interest in policies that promote the use of public funds for public code.³

Discussions regarding the flaws in the systems used, such as privacy issues, have been going on for a while. However, it is commonly suggested that these problems are new because they are being encountered in new technologies such as AI. Additionally, the companies responsible for these issues, whose business models rely on the use of customer data and other problematic practices, are expected to provide solutions. This situation is similar to that in academic publishing, where open access was originally intended to mitigate the power of large publishing companies, which end up making significant amounts of money from it and thus also perpetuate existing social problems, such as limited opportunities in the Global South.

Minor and situated tech

One way to counter the inertia of large institutions such as universities is to counter the idea of scaling up with the idea of scaling down. This is one aspect of the concept of 'minor tech',⁴ which was recently adopted from Gilles Deleuze and Félix Guattari's reading of Kafka as 'minor literature'.⁵ Both minors use existing power structures (language, technology) and work with and against them, making their work inherently political and of collective value. «A minor technology is that which a minority constructs within the grammar of technology.»⁶

The emancipatory practice of striving for independence within existing power structures has been cultivated in various organisations rooted in

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feminism or cyberfeminism as their technology aware iteration. As members of these groups adopt digital technologies, they have articulated what a (trans*)feminist server could/should look like, identifying it as a «situated technology. She has a sense of context and considers herself to be part of an ecology of practices.»⁷ A later version of the text aimed to provide a broader contextualisation of such technologies in relation to broader concerns.⁸ These discussions have resulted in interesting hybrids of content and infrastructure, such as the publication *Networks of One's Own*. With its title alluding to Virginia Woolf's classic essay, this collection of texts also includes an easy-to-install local server. A bottom-up approach with individual modules on the topic is the most promising way to introduce such ideas in an art school. At the Lucerne School of Design, Film and Art, one example of this is the interdisciplinary module *Situated Infrastructures*. In this module, students from different programmes form groups to discuss the idea of local technical systems and find individual implementations. The resulting projects are not necessarily of a digital nature, but the students experience such technologies as something that can be imagined differently.⁹

- 1 The Swiss Federal Council of Culture in its strategy for 2025–28 foresees a substantial digital transformation of culture and calls for art schools to strengthen the economic and technological competences of their graduates. Bundesamt für Kultur, *Kulturbotschaft 2025–2028. Erläuternder Bericht für das Vernehmlassungsverfahren* (2023), p. 12, www.bak.admin.ch/dam/bak/de/dokumente/kulturbotschaft/kb-2025-2028/kb-2025-2028_bericht_vernehmlassung.pdf.download.pdf/Kulturbotschaft%202025ff_Vorlage%20und%20erläuternder%20Bericht_d.pdf (retrieved 17 Feb. 2024).
- 2 For a discussion of the concept of digital sovereignty as «a condition of the ability to critically partake in the digital transformation» see Bianca Herlo, Daniel Irrgang, Gesche Joost and Andreas Unteidig (eds), *Practicing Sovereignty: Digital Involvement in Times of Crises*, Bielefeld 2021, p. 13, doi:10.14361/9783839457603.
- 3 One noteworthy exception here is *COPIM* and its follow-up project *Open Book Futures* in the United Kingdom, <https://copim.pubpub.org> (retrieved 17 Feb. 2024).
- 4 Christian Ulrich Andersen and Geoff Cox, «Toward a Minor Tech», in: *A Peer-Reviewed Journal About 12* (2023), pp. 5–9, doi:10.7146/aprja.v12i1.140431.
- 5 Gilles Deleuze and Félix Guattari, *Kafka: Toward a Minor Literature*, trans. Dana Polan, Minneapolis 1986.
- 6 Andersen and Cox, «Toward a Minor Tech», p. 6.
- 7 «A Feminist Server Manifesto 0.01» (2014), https://areyoubeingserved.constantvzw.org/Summit_afterlife.xhtml (retrieved 17 Feb. 2024).
- 8 «Trans*feminist Servers...» (2022), <https://hub.vvvvvaria.org/rosa/pad/p/transfeministservers> (retrieved 17 Feb. 2024).
- 9 See <https://situated-infrastructures.kleio.com> (retrieved 17 Feb. 2024). For examples of the role of technology in interdisciplinary student projects see Alexandra Pfammat-ter, Thomas Knüsel and Beatrice Alves Capa-Schilliger, «Interweaving Disciplines: How Workshop Spaces Generate New Forms of Creating», in: *Nummer 11* (2023), pp. 46–51, doi:10.5281/zenodo.7418195.

The issue of self-owned technologies and infrastructures gained urgency with the pandemic in 2020, when universities suddenly realised that they were dependent on third-party systems, which often came with conditions that they did not approve of. The online workshops titled «Reclaiming Digital Infrastructures» at KASK Ghent assessed the use of Free Libre Open Source Software (F/LOSS) for digital learning environments as an infrastructure «being simultaneously technical and ethical, legal and speculative, economical and political».¹⁰ While these workshops focused on the affordances of different tools and the practices they enable or bring forth, the Berlin University of the Arts took concrete measures to establish its own digital ecosystem: «For a sustainable and independent digitization strategy of educational institutions, adequate digital tools of this kind should by necessity be privacy compliant, free-to-use, intuitively understandable, scalable, comprehensible, verifiably secure, contemporary, and future-oriented.»¹¹ The resulting collection of services is modular and federated.¹²

Participatory (digital) design

The use of F/LOSS is not (or should not be) an end in itself, but rather a means to specific objectives. Roel Roscam Abbing has demonstrated how a diverse set of open source tools can be used to prototype individual, situated infrastructures according to the communities they are meant to serve.¹³ This approach of exploring computational alternatives ties in with an ongoing debate within participatory design, a method of involving stakeholders in design processes that has its roots in Scandinavia in the 1970s, and as some scholars argue has lost its

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technological grounding. When looking back at the development of participatory design over the last few decades, scholars from Aarhus University have called for «Putting the T back in Socio-Technical Research».¹⁴ They argue that the ever-increasing focus on methods for co-design processes has resulted in a loss of knowledge about relevant foundations and impacts due to a lack of concrete results. Here Susanne Bødker and Morten Kyng have noted «a lack of technological ambition on behalf of both users

and researchers, a choice of researchers to work with communities of users that are immediately sympathetic and generally shying away from a political stance, especially when it entails conflict with powerful adversaries.»¹⁵

Being able to understand and work with digital technology, and to communicate effectively with people who understand it even better, is an essential component of an interdisciplinary skillset. And viewing technology as a malleable resource, not a given, is a prerequisite for transforming one's profession. This, together with a critical mindset, will distinguish professionals from amateurs in the future creator economy, where content is produced more easily than ever before. It should be a principal objective for art schools.

10 Peter Westenberg and Femke Snelting (eds), *Reclaiming Digital Infrastructures*, Brussels 2021, p. 4, www.constantvzw.org/documents/RDI/Reclaiming%20Digital%20Infrastructures.pdf (retrieved 25 Feb. 2024).

11 UdK Berlin, *Medienhaus Concept Paper* (2020), www.medienhaus.dev/20210122-statement-en.html (retrieved 17 Feb. 2024).

12 See <https://spaces.udk-berlin.de/> (retrieved 17 Feb. 2024).

13 Roel Roscam Abbing, «On Cultivating the Installable Base», in: *PDC '22: Proceedings of the Participatory Design Conference 2022 vol. 2*, eds Shana Agid, Yoko Akama, Andrea Botero et al., New York 2022, pp. 203–207, doi:10.1145/3537797.3537875.

14 Henrik Korsgaard, Clemens Nylandsted Klokmose and Susanne Bødker, «Computational Alternatives in Participatory Design: Putting the T back in Socio-technical Research», in: *PDC '16: Proceedings of the 14th Participatory Design Conference: Full Papers – Volume 1*, eds Claus Bossen, Keld Bødker, Anne Marie Kanstrup et al., New York 2016, pp. 71–79, doi:10.1145/2940299.2940314.

15 Susanne Bødker and Morton Kyng, «Participatory Design that Matters – Facing the Big Issues», in: *ACM Transactions on Computer-Human Interaction* 25 (2018), pp. 1–31, esp. 4–10, doi:10.1145/3152421.