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Carving space for sustainable futures through vocational education and training: Why and how organisational choices and teaching practices matter

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Abstract

In this keynote from the 2025 NordYrk conference, I seek to reframe vocational education and training (VET) from employability towards liveability and offer a non-metric repertoire for legitimising civic and ecological purposes in practice. I do this by showing how VET is still largely organised around productivist logics, which leaves little room for non-economic purposes such as community well-being or care for the living world. Because of this, I suggest we reconsider what we value in VET. To widen what counts, I introduce three conventions of worth that could inform post-growth VET – civic (community and care), ecocentric (ecological embeddedness and sufficiency), and dialectical (critique, plurality, reflective judgement). Rather than metricisation, conventions of worth such as these rely on critical reflection and public justification to assess quality. In the next part I turn to teaching and propose carving space as pedagogy. I argue that three dimensions – time, place, and relationships – are particularly vital when teaching for sustainability and discuss some of the advantages that VET has over other education contexts. Lastly, I turn to the practical implications for academic work, arguing that the choices we make in research and teaching also play a role in shaping sustainable futures.

Keywords: education for sustainability, conventions of worth, place-anchored pedagogy, embodied learning, radical imagination, liveable futures

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Introduction

In this keynote[1], I explore *what vocational education and training (VET) for sustainable futures might look like* – what are some critical foundations, what changes are needed, and which potentialities already exist within the contexts of Nordic VET? Drawing on current sustainability research from the field of VET and beyond, I will address how the interplay between educational design, organisational choices, and value regimes, as well as pedagogical choices, can *shape the potential of education*.

The argument proceeds in three parts. First, I examine the *values and implicit assumptions* embedded in today's VET and why they may need reorienting (Part I). Next, I consider how *pedagogy and place* matter for sustainability (Part II). Finally, I outline what academics can contribute to this work (Part III).

Part I: Why do we have to reorient our values and transform our systems?

First, let us establish *the bigger picture*. Our planet is changing, moving towards greater instability and a hotter climate (Thomas, 2022). These are changes caused by human activity and how we proceed will matter greatly for exactly how instable and hot the planet will get and how quickly. Though it might be hard to face, there is no way to reverse these effects and go back or even entirely stop the changes that have become to take shape. We will be facing more extreme unpredictable weather conditions, forest fires, loss of inhabitable land and fertile soil. These changes are inevitably accompanied by mass migration and political tensions. While many impacts of the climate and biodiversity crises are now locked in, their magnitude and distribution can still be affected. How big these changes will be is contingent on collective choices, so *what we do moving forward matters*.

Most sustainability scholars today agree that *change is needed on a fundamental level*. While the great acceleration and the advent of the Anthropocene – the current geological era we are experiencing and that I have briefly just described – gained momentum after the second World War, critical scholars trace the roots of the issues back to the Enlightenment when the ideals of *progress and the assumption of human exceptionalism* gained traction.

Modernity's lock-ins

German sociologist Hartmut Rosa (2013) identifies *social acceleration* – in technological innovation, social change, and the pace of everyday life – as a defining feature of modernity. While acceleration may yield temporary gains, particularly through technological advances, Rosa argues that it ultimately leads

to alienation, undermining our capacity for resonance and meaningful relationships.

David Graeber and David Wengrow (2021) approach the question of modernity from a different angle. Drawing on archaeological and anthropological evidence, they show how *the myth of progress* naturalises increased complexity, inequality and technology, portraying them as inevitable and desirable.

For the contexts of vocational, adult and higher education, Alam et al. (2023) argue that the *scientification* and *fragmentation* of education have aligned it with the techno-industrial logics of modernity. These processes support a division of labour and reinforce social hierarchies. Vocational, adult, and higher education, they argue, often serve to discipline individuals into the *techno-capitalist order*, rather than challenging it.

Although these scholars approach the issue from different vantage points, they all show how *modern systems, values, and assumptions cause us to lose relational depth and mutuality*. Rosa argues that acceleration causes us to lose our capacity for resonant, meaningful relationships with people, nature and time, while Graeber and Wengrow pose that hierarchical systems disrupt more reciprocal forms of being-in-the-world, and Alam et al. argue that the pursuit of technologisation fragments education and enforces social inequality.

The current VET paradigm(s)

These inherent features of modernity are also prevalent in VET. Critical research concludes that, in the current paradigm, VET's purpose is construed as producing skill-for-work. Conveyed through both policy and pedagogical ambitions, this focus is rooted in *a productivist mindset* (Ramsarup et al., 2024). This central belief in industrial growth encourages *narrow institutional priorities*, even when stakeholders are aware of the challenges we are facing (Asaduzzaman et al., 2025). For the Finnish context, Suhonen et al. (2024) found that VET *teachers* ***wanted*** *to engage students in critical global issues, but the system hampered them*. The VET structure's focus on efficiency and individual skills acquisition left little room for deep classroom engagement. In short, the system valued labour-market responsiveness over broader civic or ecological aims.

Status-quo and (weak) reformist responses to sustainability in VET

A recent systematic review of climate and VET literature found that most studies on this topic remain quite *theoretical and reformist* (Poza-Vilches et al., 2025)**.** While studies often emphasise 'green knowledge and skills' or use sustainability jargon, they rarely rethink the whole system. Holistic and/or transformative approaches to the climate emergency are absent in most studies (Poza-Vilches et al., 2025). In practice, this means that many VET institutions simply sprinkle green topics into

existing courses (e.g., adding a module on recycling to a building trades programme) without changing deeper assumptions about growth or livelihoods. Ramsarup et al. (2024) warn that this piecemeal approach risks hindering true integration of sustainability. On a policy level, sustainability agendas in VET have proven contradictory. Despite claiming to promote sustainability, current policies continue to depend on *extractivist, productivist, and consumerist* logics (Alam et al., 2023). These logics rely on the exploitation of both natural resources and people. In the Global North, much of the resulting environmental and social harm is obscured because costs are displaced to the Global South. However, the *devaluation of care and repair work* is also felt in our own communities.

In short, sustainability research indicates that VET's default mode remains - produce workers for the economy, with only superficial nods to sustainability. This framing *leaves little space for learners' broader development or for questioning growth itself* (Schmelzer et al., 2022; Suhonen et al., 2024). Which begs the question: If VET were redesigned with a focus on people and planet, what would change?

Alternative pathways in VET

Despite the prevalence of a productivist mindset in VET, there is some research on alternative priorities and responses.

Studying agricultural vocational schools in Zimbabwe, Muwaniki et al. (2024) found that, in the face of both climate and economic collapse, VET should focus on how best to *serve learners and the community* rather than on supplying labour (here) to big farms or industries. Based on an empirical study of Australian gasfitters as example, Sandri et al. (2024) argue that upskilling strategies require *an explicit re-problematisation* of ends as well as means; otherwise, 'green' content is absorbed into business-as-usual trajectories. Drawing on multi-country research, Lotz-Sisitka et al. (2024) show that system change in VET depends on re-valuing purposes, not only re-tooling curricula. The authors argue that VET transformation *cannot ignore deep power and environmental questions*; a curriculum overhaul might need to address who controls resources or whose knowledge counts. A VET programme on oil refining in South Africa cannot ignore local environmental justice issues or the global oil economy. A VET programme in Swedish municipal adult education that trains workers for the electrical car battery industry, cannot ignore local social justice issues such as Sápmi land rights or global environmental justice issues pertaining to the extraction of precious metals both locally and abroad.

Alam et al. (2023) argue that education should foster *modesty, humility, and care* – not progress, control, or competition – and promote *simpler, locally embedded ways of life*. It should move away from preparing people to serve industrial systems and instead help cultivate *ecologically embedded and politically conscious*

citizens. When industrial values and metrics are naturalised or assumed to be neutral, instrumental rationality overshadows ethical and ecological considerations. This is of course not new. Thinkers like Arendt (1958) and Horkheimer and Adorno (1947/2002) have highlighted how technology not only transforms environments but also undermines political action, alienates humans, and can reproduce authoritarian tendencies.

In my own research I show that the *organisational tools* that we use do more than manage or facilitate practice. They also enact implicit values, distribute power and responsibility, thus *shaping reality* (Holmqvist, 2022, 2024).

In summary, research clearly shows that *alternative futures require change on a systemic level*: Our visions of what constitutes success, and a 'good life' must change. For this to be possible, we must re-learn some important truths about the physical world. Truths that our progress through modern times has made us forget. One such important lessons is that *resources are finite*. Another is that *progress as growth* is not the only way to conceptualise success.

Alternative conventions of worth[2]

So, if a growth paradigm is no longer viable and industrial-market values must be replaced, what values and priorities might replace them? I want to suggest three alternative grounding conventions of worth or value regimes for a post-growth VET.[3]

Civic worth (Community and care). What if we were to value *repair, reciprocity, and democratic engagement?* A vocational system guided by civic worth would prioritise community benefit and social solidarity over economic growth. It might teach repair of communal goods and mutual aid; cooperative learning or involve students in local governance projects. It might honour labour that cares for others (from social work to neighbourhood farming); and value that trainees volunteer in a community clinic or that an apprenticeship includes mentoring by retirees to pass on cultural skills. In other words, VET would teach that making life better for people and communities is just as 'valuable' as making widgets.

Eco-centric worth (Ecological embeddedness). What if we were to value *the Earth system's integrity*, including the biosphere and the health of the ecological systems that it encompasses? A vocational system guided by eco-centric values would prioritise sufficiency over efficiency, support and protect Life; and promote earth-care labour as the most crucial mission for all. It might ask: how does this education respect the Earth system's boundaries and the finite nature of resources (both material and temporal)? It might teach trainees to see themselves as part of ecosystems, not apart from them; how to maintain and repair tools and artefacts for longevity, how to reuse parts, and design closed loop systems.

Dialectical worth (Complexity and reflection). What if we were to value *critique, diversity* and *plurality?* A VET system based in dialectical worth would allow and encourage ambivalence, ethical reasoning, and critical thinking. It might teach in ways that invite openness and humility, allowing learners to voice and pursue hard questions that lack simple or clear answers, empowering them to navigate trade-offs and reflect on impact. It might teach the importance of re-imaging work and society and how to do that in generative, critically different ways. It might include reflective discussion on power and justice, even when this is not economically 'efficient'.

What might this look like in practice? Structurally, funding and governance could be re-specified so that schools publicly justify civic and ecological ends – not by adding new metrics, but by making reasons and practices visible. Partnerships might expand beyond industry to include non-profits, cooperatives, and local governments, spreading influence beyond the corporate sphere. Curricula could include *repair and reuse skills*, *collaborative problem-solving* with real stakeholders, *resilience training, and civic deliberation*. Some examples and seeds of change already exist. Weijzen et al. (2024) describe collaborative learning arrangements where students and community actors jointly tackle real sustainability challenges, helping to bridge the theory-practice gap. This sort of approach opens up space for transformative learning, letting trainees ask existential questions like: *What am I really here to do?*

Part II: How can teachers support such transformations?

Having rethought *what* VET might value, let's talk about *how* it might be taught – and *where*. If we recognise that modernity and the pursuit of economic growth cause alienation and prevent us from engaging meaningfully with ourselves, others and the world around us, I would argue that education has to focus on carving space for learners to *connect* in deep and meaningful ways with themselves, others, and the world around them. It's not enough to add a sustainability module here or there; we must embed these values in pedagogy and learning environments so that sustainability is *lived* and *felt*.

Carving space as pedagogy

In our research, we have developed the idea that teachers can 'carve space' for learning (Holmqvist & Millenberg, 2024). It is about planning for and teaching in ways that give participants the opportunity to explore, reflect, be challenged and change. Such a space is not a physical place, but an educational and existential space where new thoughts and perspectives can take root. Three dimensions are particularly important when carving such spaces: time, place, and relationships. We believe that teaching for sustainability needs to relate consciously to all three.

Time and pace

Learning for sustainability requires time to think, to converse, to feel and to reconsider. Teaching needs to provide room for reflection and to act consciously – both during planning and in the classroom. Therefore, it is important to deliberately slow down. Slowing down doesn't mean working inefficiently, but rather consciously creating space for deeper learning processes – allowing students to really think, discuss and digest their impressions, instead of rushing on (Berg & Seeber, 2016). The aim is not to always be slow, but to adapt the pace to the content and goals – it is conscious presence in time that is key. In practice, it can be about letting silence have space, working on longer projects, or letting the participants work on issues that evoke emotions and require time to process. Such a rhythm can also help to highlight and challenge the time perspectives that characterise our time – where quick rewards are often prioritised over long-term responsibility.

Places as inherently pedagogical

Places today, in our digital and highly mobile world, can easily be seen as backdrops for our lives and actions. Canadian outdoor education researcher David Gruenewald believes that places are educational in nature, rather than neutral backdrops for learning. He and other researchers with him describe it as us shaping places and that places in turn shape us. Crucially, places 'teach us about how the world works and how our lives fit into the spaces we occupy' (Gruenewald, 2003, p. 621). As illustrated by figure 1 below, what is learned in such cases depends on *the types of places* people experience and *the quality of attention* they give them (Butler et al., 2018; Gruenewald, 2003; Lange, 2023). From this perspective, the role of teaching is to carve spaces where learners can become aware of and listen to what places teach us about being in the world, as well as to want to intervene in and reshape unsustainable places based on notions of radically different futures (Gruenewald, 2003).

Anchoring teaching in places can mean starting from the participants' own experiences and everyday environments, working with the history, ecology and future of places, or letting the teaching take place outdoors or in the local community. By letting the learning take its starting point in one's own surroundings, the content becomes more alive. Central here is to develop a critical sense of place – to be able to read and question the power relations and values that are embedded in our surroundings. For example, one can discuss what a modern farming complex looks like today, why it was designed that way and how it could be designed differently to be greener or fairer. Through such exercises, learning is linked both to place and to a larger context, which makes the concept of sustainability more tangible and meaningful.

Figure 1. What type of places people experience matters. Compare, for example, what students might learn from visiting a monoculture forest where industrial agents use large machines for clearcutting, with a biodiverse forest, where foresters use nature-based forestry techniques to harvest materials.

Relationships and relationality

Learning is both relational and embodied. We engage with the world around us and others through our bodies. For biologist and philosopher Andreas Weber (2016), morality begins in 'the feeling body' – it is through our bodies that we sense, value and respond to the world. Similarly, John Dewey (1934/1980) argues that emotions play an important role in rational thinking. This means that education needs to engage more than just learners' cognition.

Here, VET has a potential advantage over other educational contexts. Research on 'embodied learning' in VET suggests that *the psychomotor, manual aspects of vocational training are pedagogically rich*: they integrate mind and body, and they ground abstract concepts in real experience (Hyland, 2018; Mulcahy, 2000). When students *do* things – repair a machine, harvest a crop, care for an elderly person – they can experience the limitations and possibilities of those systems. In short, the *materiality and embodiment* of VET – which are already strengths of this system – can be repurposed as *powerful points of entry* to learning for sustainability. They can be leveraged also towards teaching civic deliberation and carving space for students to experience ways of being-in-the-world that are not yet available outside the educational context. By situating learning in bodies, tools and places, such pedagogies can convey the material interdependence and biophysical limits that frame our existence and foreground the generative potential of alternative values (e.g., civic, eco-centric, and dialectical).

Lastly, relationality also refers to *the dialectical relationship between the individual's lifeworld and broader social patterns.* Critical theorist Oskar Negt argues that individual experience cannot be properly understood unless it is seen in

relation to broader social issues. According to Negt, emancipatory education should start from people's personal everyday experiences and help them understand structural issues. Negt (1971) developed his own pedagogy of *exemplary learning*, producing and organising multiple instructional materials that addressed workers' interests and class consciousness to support workers in taking emancipatory action. Contemporary discussions of sustainability and 'transformative learning' often neglect this dialectical relation between experience and the social imagination, leading to conclusions, strategies and proposals built on shallow foundations.

Hope and radical imagination

Waking up to the implications of our unsustainable present and learning for change is demanding. As scholars have argued for decades now, cultivating collective action and radical hope – that is, hope that recognises agency without discounting limits or power – requires community and shared, safe-enough spaces (cf. Gruenewald, 2003; hooks, 2003, Singer-Brodowski et al., 2022). The act of sharing and being vulnerable together can open space to 'sit with the trouble' and practice *conviviality* or an ethic of care (Martinsson & Mulinari, 2023), as well as the type of *dialogue* which is central to critical adult education. From a psychological perspective, *compassion* and *self-compassion* help us feel connected to ourselves and others (Neff, 2011), while *empathy*, pedagogically and politically, invites us to stand with others and make the dismantling of oppression a common cause (Nicholls, 2011).

Scholars of adult learning show that the ability to *imagine futures* is crucial for both sustainability (Lange, 2023) and democracy (Rasmussen, 2021). However, radical imagination *requires practice* (Jickling & Blenkinsop, 2021). *Artistic expression* is a particularly powerful way to invite and practise creativity, not least when developing social consciousness and imagining social change (cf. Ammentorp, 2007; von Kotze, 2019).

In our own research, we asked learners to 'dream on top of place' (see figure 2), acknowledging places' socially constructed nature and inherent malleability, without denying their biophysical properties. In this we found that '*intervening in places and reimagining them […] invites hope and a willingness to change* that can expand our capacity to think radically about different futures' (Holmqvist & Millenberg, 2024, p. 309, my emphasis).

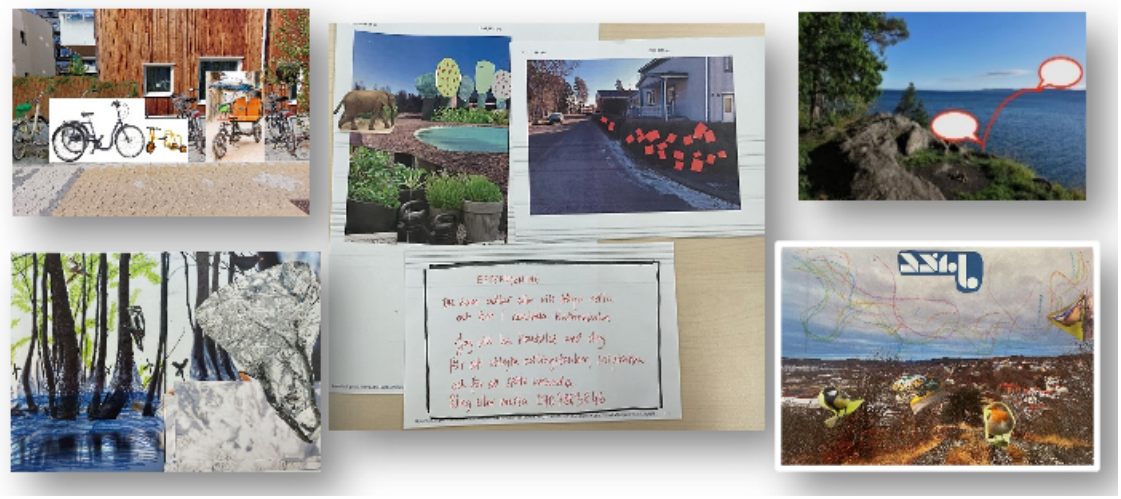

Figure 2. Examples of place-anchored future imaginings of five project participants.

Part III: So what?

So far, I have focused on the system level and on teaching. But what can *we* as researchers and academics do to carve space for sustainable futures?

Academic responsibility and opportunity structures

We should *revisit curricula and outcomes* to embed learning for sustainability throughout VET. As researchers, this could mean looking at education for sustainability through a holistic, values-based lens, rather than focusing on single teaching practices or course modules. In other words, approaching sustainability as a stance or a commitment woven throughout the fabric of the VET rather than as occasional specific measures. Alternatively, when making policy and curriculum recommendations based on our research, we should take such aspects into consideration, as well as point policymakers in the right direction when it comes to what counts as successful outcomes and how these could be measured.

We should *support experiential, embodied, and critical place-anchored pedagogies*. As researchers and VET teacher educators, we can help VET teachers see how they can leverage the potentialities inherent in VET to support students learning for sustainability in powerful ways. Engaging in collaborative research together with VET teachers can be part of such work.

We should *broaden stakeholder involvement* and include non-traditional partners in VET. As researchers we can consider carefully which stakeholders we collaborate with, partnering for example with NGOs and other non-traditional partners to bolster their role in curriculum development, work placements etc.

We should *address labour market structures* by recognising that if 'qualified labour' is oversupplied in some fields but direly needed in green sectors, VET has a role in balancing that. As researchers, we could focus on liminal spaces and marginal practices that seek to be truly innovative to interrogate and learn from them and help scale up their potential.

We should *embrace and support informal learning*, since much vocational education happens outside schools or formal institutions. As researchers, we could consider which VET contexts and practices we chose to focus and contribute knowledge on.

In closing…

I recognise this is a lot, and change is hard. But change is happening whether we like it or not. By being intentional, by carving spaces of possibility, we can be agents in that change. As critical scholars tend to argue, *true freedom* involves not just choice within a system but the capacity to *reconfigure the system itself. While modernity suppresses such freedom, we still have the responsibility to seek ways to move beyond our current systems.* Looking at a substantial body of examples from beyond modernity, Graeber and Wengrow demonstrate that people have always experimented with different social orders, which challenges the idea of progress as linear and invites *political imagination* that transgresses the paradigm of modernity.

Transforming VET requires ***systemic*** *change*, but sustainable futures won't be achieved through one grand plan. They require that many people *redefine what they care about and how they act*.

This is not a call for a one-size-fits-all solution. It is an invitation to us all, collectively and individually, to *reflect and act*. *How might our work, right here and now, carve space for the futures we value?* And what might happen, if VET were to shift its compass from growth to life – from *employability* to *liveability?*

Endnotes

[1] This manuscript is based on a keynote presented at the NordYrk (Nordic research network on vocational education and training) conference held in Aarhus, Denmark, 10–12 June 2025. Some parts have been revised or expanded for clarity.

[2] Following Boltanski and Thévenot (2006), I use 'conventions of worth' to mean publicly recognisable regimes of coordination or shared logics of ascribing value to people, objects, and practices according to differing conceptions of justice and the common good. These are sometimes also referred to as 'value regimes' or 'moral regimes'.

[3] Following Hopkins (2019), I adopt a 'what if' framing when discussing potential futures. This approach invites pathways thinking rather than prediction. Unlike declarative statements, open-ended inquiry resists prematurely collapsing possibility into linear conceptions such as 'one roadmap', 'one best possible future' or 'there is no

alternative'. This further aligns with my conventions of worth approach, in which value is established through coordination, contestation and public deliberation rather than fixed or predetermined.

Note on contributor

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