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Designing the Future: Youth innovation, informality and transformed VET

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Abstract

This article argues that Vocational Education and Training (VET) can be a valuable space to develop the innovation required to deal with the wicked problems of the world; however, radical and rapid transformation in approaches to VET is needed. While we use a case study from Gulu, Uganda, the findings can be applied more broadly. A new approach cannot be taken in isolation from other social circumstances, and desperately needs to include epistemic contributions both in relation to content and approach so that it bolsters and supports the initiatives, designs and dreams of the intended participants, especially women. We argue that epistemic injustice is a major limiting factor for environmental learning and innovation. We share potential opportunities from our research to shift towards a climate and socially conscious social skills ecosystem capable of designing a positive future.

Keywords: *Transformative Vocational Education and Training (VET), social skills ecosystem, epistemic justice, environmental sustainability, intersectionality and VET*

Introduction

The planetary climate emergency brought on by 400 years of unprecedented and increasingly ruthless human destruction of the planet demonstrates a clear need for a reorganisation and reorientation of human relationship with the planet. We agree with critical and environmental Vocational Education and Training (VET) scholars (i.e. Allais, 2022, 2023; Rosenberg et al., 2019; Vet Africa 4.0 Collective; Wedekind et al., 2021) that such a reorientation and realignment with planetary needs requires a deep reorientation of learning systems which are currently nested in and reflect the oppressive, hierarchical, and competitive organisation of human living which glorifies puissance (power over another) and rationalises violence. In this article, we further this discourse with particular attention to generative, expansive, and innovative networks of informal learning and innovation to deepen understanding of the agential boundaries that limit the potentiality of a vibrant social skills ecosystem capable of catalysing the climate-induced and urgently needed socio-economic transformation. We recognise that women face compounded challenges related to climate change especially in rural areas and we therefore base our observations on three years of research examining the viability of a new, more equitable approach to VET in

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South Africa and Uganda (Vet Africa 4.0 Collective, 2023). This article focuses on the data drawn from a case study in Gulu. Gulu is a new rural city in Northern Uganda which is in a period of transformation and growth following more than two decades of civil war. It is characterised by a majority youth population, largely informal economy, many NGOs, a high number of early school leavers, and government strategy for development driven by vocational education. Development is being driven largely by local and informal youth networks of (vocational) learning for small enterprises oriented towards solving regional problems (Metelerkamp & Monk, 2023).

We first describe what a transformed VET could look like, and why it is needed. We tie this to problematic ontological underpinnings of life and learning, and we draw attention to emergent networks of youth-led innovators and environmentalists that are learning together in spite of, and often outside of, the formal education system. These learning networks offer a fruitful approach for VET learning, community development and sustainable futures. We argue that environmental sustainability in Uganda could be catalysed through a transformed and inclusive VET, but it must rest in the rough and rhythmic chaos that is visible in informal learning, and offer a new story about living together on this planet. We interchange the use of Technical VET (TVET) and VET throughout the article.

TVET and environmental education

In Africa, TVET is a potentially transformative tool for sustainable development, especially in crucial sectors such as agriculture which are disproportionately affected by environmental and climate change. As potential hubs for advancing environmental education and innovation for sustainability, UNESCO is calling for the greening of TVET institutions. UNESCO stresses that credible and comprehensive skills systems can support individuals, communities, and organisations to generate and maintain enhanced and just livelihoods (McGrath et al., 2020; UNESCO, 2016). Referring to SDG 4, Roemhild and Gaudelli (2021) argue that climate change education – inclusive of climate justice – must be considered as a core component of quality education.

In their article revisiting the literature of TVET in Africa, McGrath et al. (2020) call attention to Sustainable Development Goal 4, which suggests the need for a transformation in learning and teaching in order to deliver quality education that can meet the learning needs of all. McGrath et al. (2020) suggest that, in the context of VET, in order for such a transformation to occur, there must be a corresponding and a priori transformation in the approach taken to learning and teaching and researching. Drawing on human rights education (Tomaševski, 2001), critical capability theory (DeJaeghere, 2018; Powell & McGrath, 2019), critical adult education (Freire, 1970; Zeelen et al., 2010), McGrath et al. (2020) propose a liberatory and empowering type of learning that situates the agentic needs of the learner within a broader context of learning and living, with particular attention required for vulnerable and marginalised people(s). They frame this in terms of addressing the complex challenges associated with obtaining decent work and sustainable livelihoods amongst the significant and growing threat of climate change. Likewise, Allais (2022) is

a strong advocate for integrated VET systems that attend to unequal power relations in social and economic structures. Importantly, Allais reminds us that VET training could be part of societal solutions, but is not an independent solution to the existing complex and intersectional social and environmental problems. Like McGrath et al. (2021), she is critical of VET narratives that suggest that training people alone is sufficient to solve social problems, because they do not account for – and sometimes even excuse – unjust structures that cause the problems. Lale and Eliala (2019) have explained that women's ability to respond to climate change is highly constrained by some systematic, social and structural factors. This increases women's vulnerability to climate change because they depend on climate sensitive sectors to provide livelihoods and well-being for their families. UN Women (2018) added that women are faced with a myriad of challenges including unpaid work and lack of access to productive resources.

In their book, *Green Skills Research in South Africa* (2019), Rosenberg et al. (2019) emphasised that transforming VET systems requires a paradigm shift in societal relations. They argued that a radical and rapid transformation of VET is needed to address pending environmental disaster, and that it must both happen alongside and include a transformation of social and economic systems to make them more cooperative, nurturing, and supportive.

The VET Africa 4.0 Collective (2023), drawing on their research to expand on a social skills ecosystem model (Hodgson & Spours, 2016), proposed a pathway towards decent and inclusive living, learning and working that accounts for the intersections of power, policy, and a variety of stakeholder interventions by formal, informal, national, international and local stakeholders.

In relation to Gulu, Uganda, Metelerkamp and Monk (2023) have drawn attention to the informal networks of learning in VET that are driving innovation. They remind us that African populations are mostly youth, and that 80% of African economies are informal. They suggest that youth are driving change in Gulu through international networks of learning informally in spite of vocational systems that are not meeting their learning needs. They explain that the learning experiences of young people informally are characterised by relationships with high levels of accountability for teaching fellow youth, and for developing their communities, and that learning is driven by and directly integrated with improving livelihoods and community needs.

The paradox is that the decision-makers claim that youth need a 'mindset change', to appreciate TVET as a decent career option, while they structurally diminish the cognitive domain of these youth. Excluding and disregarding their capacity to contribute to society is an act of epistemic injustice. Gaile Pohlhaus Jr. (2017) explained that epistemic injustice considers "how epistemic practices and institutions may be deployed and structured in ways that are simultaneously infelicitous toward certain epistemic values (such as truth, aptness, and understanding) and unjust with regard to particular knowers" (p. 13). She explained that epistemic injustice is a function of silencing individuals and groups of people's ability to authentically contribute to social pools of knowledge. Collins (2017) explained that this happens through discrediting certain people's epistemic credibility either purposefully

or through what Dotson (2011, as cited in Collins, 2017, p. 120) refers to as 'pernicious ignorance': "any reliable ignorance that, in a given context harms another person or sets of persons". Medina (2017) explained that epistemic injustice is often structural and socially constructed to the extent that entire groups of epistemically oppressed people are taught – and often believe – that they do not know.

Returning to the context of TVET and avoiding environmental catastrophe, epistemic injustice is also dangerous because, as Ramsarup (2019) explained in the South African context, education and work systems are unprepared for the environmental crisis, and therefore are forced to rely on the "agentic action of individuals" (p. 93). We demonstrate in the data below more specifically how youth are excluded and yet still find solutions for environmental issues. We call for a model of formal VET that can integrate the informal innovations and capacity to adapt. We argue that this will only be possible if the youth are included in such decisions. First, however, we briefly describe the research we are drawing on.

Methods

In this article we draw on case studies from two distinct but connected research projects in Gulu (Uganda) examining vocational education in Africa. The VET Africa 4.0 research was undertaken over a period of three years, with two case studies in Uganda and two in South Africa. The research aimed to understand the challenges and opportunities for VET in developing decent work and sustainable future livelihoods, with particular attention to vulnerable and marginalised people(s). In Gulu, we followed a Participatory Action Research approach to the research (Monk et al., 2021), working closely with core stakeholders in an iterative process that involved network mapping, youth-led community learning cafes and radio talk shows, art-based inquiry, interviews and focus group discussions. Participants included government officials, students, teachers, principals, market and street vendors, farmers of all kinds, university lecturers, NGO and CBO and private sector workers. From the start, the research approach included an aspect of bringing stakeholders together, and developing networks of learning through strategic engagement in the research process. We began with formal institutions, and worked across sectors but in the end spent most of our time working with youth – which make up more than 70% of the population with some counts as high as 80% in the Northern region, with the pre-Covid median age of 15 years. We also worked very closely with a UNESCO Chair in Lifelong Learning Youth and Work youth group, and an environment-oriented community based organisation with short programmes in youth empowerment, and a group of herbal medical practitioners. All these involved an ethnographical element, with deep participation by the researchers in these spaces over the course of the research. Environmental issues were peripherally targeted throughout the research.

The second case study, Reimagining Agriculture Extension through a Learning Lens (RAELL), lasted eight months and followed directly from the VET Africa 4.0 Research. It involved case studies in South Africa, Zimbabwe and Gulu. In Gulu the research built on

the VET Africa 4.0 programme, with a focus on agriculture extension in the formal spaces. We conducted interviews and focus groups with farmers, students, government agriculture extension agents, Gulu university lecturers, and vocational schools. We also analysed job descriptions, curriculum and policy.

In both cases, research ethics was sought through the University of Nottingham in the UK and through Gulu Regional Ethics Council in Uganda. In the following sections we share some of the findings related to environment innovation and VET.

Informal environmental initiatives (and learning)

The VET Africa 4.0 Collective (2023) documented the informality of the social skills ecosystem in Gulu as well as the rich learning networks that are driving it. Within this ecosystem frame, we can see a growing number of (mostly) youth looking for better futures. As Gulu is in a state of transformation, these youth are going out and finding learning through networks to develop new business ideas and they often see future markets and opportunities in environmental clean-up such as waste management and repurposing activities.

One respondent at the centre of the environmental movement in Gulu, who has a growing business printing building materials using recycled plastic bottles, explained:

> I've seen people developing apps for waste collection and there are people who are venturing into making compost from waste and earning a living from it – like selling it. And besides making the compost, some people are using the same process of breeding… They are called black flies. There is some category of flies that can be used as chicken feed, so people are realising how to transform waste into different resources. Yeah, even in the tailoring world, fashion and design world I have seen people transforming different categories of waste into pretty cool designs that they can sell and make money.

These initiatives are emerging out of informal spaces, and out of necessity because there is no formal employment. One participant making mats, earrings, key holders, and sponges out of recycled garbage elaborated:

> OK I started doing that because I was also jobless, it is really hard to get a job. So I thought … I can actually create something, be a job creator than a job seeker. So I had to figure out how to earn a living through making crafts, my hands, using my hands, figuring out things. I would always post the pictures on WhatsApp groups and all that.

At a youth-led community learning cafe investigating decent work (as a participatory component of the VET Africa 4.0 Research), a number of initiatives emerged that demonstrate the collaboration, cooperation, learning from each other, and community development that are central to the perceived success of the individual. One young woman has an eco-cultural tourist company. One of her key goals is to share the value of shea butter trees, which were traditionally considered the spirits of our ancestors and were not allowed to be cut without strict rituals. She explained that "Shea butter is like gold for Acholi people

– the tree is an important source of medicine". She is trying to revive care for the forests through demonstrating the value of this product made from its fruit.

Another small group of young agriculturalists are promoting a new approach to organic farming through the model of a community farm. People in the city invest in the farm, and receive weekly baskets of produce. Through this model, the youth are raising awareness about soil degradation and the need to conserve the environment.

An emerging group of young artists is using its talents to amplify environmental causes, hosting city clean-ups and producing dance and music videos together with art and fashion shows to bring attention to environmental problems in the city. They have also been repurposing materials in the products they are making, for example bags and laptop sleeves made out of recycled plastic. Another woman was using old shirts to make bath mats, and cleaning sponges.

In many instances, informally networked configurations of collaborative learning are important sites of adaptation, future thinking, and innovation. However, as Metelerkamp and Monk (2023) have documented, the formal learning systems are not able to accommodate them, or support their potential growth. In the next section we present some findings related to youth exclusions.

Exclusion and gaps

Over and over, youth have demonstrated that they were being left out of decisions regarding their own lives, and that power structures – including the formal education system – have precluded them and limited their opportunities to participate. For example, we hear strong statements from youth such as "Schools are a violation of human rights, we need to be involved in the decisions", or "As long as it [TVET] is for the poor people, mindsets won't change". One participant in a community learning cafe explained that accessing TVETs was also difficult. He explained that he was an agriculturalist, growing a number of different crops and raising animals, but he was not admitted into a local agriculture college because he did not have the required academic credentials. Another explained a mismatch between programmes and needs. He cited a local innovation programme that was bringing people from another region to participate in leather training, when the local community (including his grandfather) traditionally were leather makers. He was adamant that if the programme had been developed locally, drawing on local traditions and expertise, it would have worked. Likewise, many farmers have described the harmful effects of designing new ideas for crops that looked good on paper, but often failed and left the farmer in a worse position. One farmer pointed out that modern farming practices degraded the soil and led to cutting of trees.

A researcher at Gulu University has identified the structural challenges preventing women in particular from engaging in climate smart businesses. Her research with women in climate related businesses in Uganda clearly highlighted that in addition to limited access to skills, lack of financing is another key challenge constraining women's involvement in climate change adaptation and mitigation. She explained that women often identify several

climate businesses that are never implemented due to lack of financing. Women's lack of ownership of productive resources like land poses a threat to them accessing financing. Most financial institutions require collateral like land to act as security for funds being disbursed and this favours men who have control over resources. One woman reported having been denied a loan because she had not brought her husband to give his consent.

Some private programmes recognise the need to integrate people's lives into their programmes. The director of a small non-formal ecologically oriented Fashion Design programme working with vulnerable women (also a business that emerged from the informal sector) commented on the need to include care at the centre of curriculum:

> I think my way of thinking about it is different.... I am trying to do something a little better with vocational education. I like to teach and the impact it has on people. There are a lot of people with potential but they have not had the opportunity for someone to give them the guidance to tap into that potential.

Another director of a similar institute that teaches hairdressing and building for vulnerable women observed:

> Most of them when you talk to them, they say they want to make money and earn a living, but there is more than that... the person has not yet discovered what it is they can be, and that is where the counselling sessions come in and they gradually come to know who they can be.

It is worthwhile noting here that the nurturing and holistic approach to living and learning is taken up primarily by women – another reason to include more women in decision-making related to TVET.

While the informal spaces represent possibilities for growth and high levels of adaptation, these informal spaces still require support, and could benefit from formal TVET programmes. A respondent from Gulu University acknowledged that:

> ... many youth in Uganda irrespective of their education backgrounds or socioeconomic status have a lot of ideas but what they lack is how to push that idea into reality. And in order to do that, it is good for them to team up with mentors, to people who have tried similar things and it is working out, and then they also need connection to the market.

Drawing from the data above, we extract three core points to discuss below in relation to greening TVET. First, youth are innovating and learning informally to develop livelihoods, but they require more support; second, exclusion of youth (particularly women) is an act of epistemic injustice; third, programmes in community development, and TVET in particular, can and must learn from the cooperative, adaptive, model of learning found in the informal spaces which integrate life, learning, and community futures, and rely on sharing the diverse and different knowledges and skills of their networks.

Discussion

We see from this data that environmental initiations and innovations are emerging rhizomatically from spaces of marginalisation. The environmental discourse itself has been marginalised and silenced. The environmental movement in Gulu is emerging out of a direct livelihood need, in those who are most impacted. Environmental learning and innovation is deeply entangled with attempts to craft decent livelihoods. There is a strong sense of interconnectedness – grounded perhaps in the African ontological context of Ubuntu, and perhaps as well in the need to pool together resources. The wisdom of lived experiences as theory and practice is integrated and valued. This assertion of collective epistemological agency can go a long way to inform and shift paradigms of learning and teaching – which is very different from the dominant deflating, zero sum, epistemological power game. It aligns with the transformative call to action of scholars interested in promoting justice and human flourishing in TVET (i.e. Allais, 2022, Rosenberg et al., 2019, VET Africa 4.0 Collective, 2023). Discussions about climate change always either emerged out of discussions related to future needs of the community or led to discussions of community development. There was a clear connection between climate change innovation and future opportunities and needs in TVET, and youth did not draw distinctions between climate change, decent work opportunities (entrepreneurship opportunities mostly because of the economic informality), and fair social arrangement.

In this article we have not travelled far from the discourse of agency, (relational) capability and living in TVET. By infusing into the discourse the concept of epistemic injustice, we seek to problematise systems that deny agency through epistemic silencing. Collins (2017) explained that this happens through discrediting certain people's epistemic credibility either purposefully or through what Dotson (2011, as cited in Collins, 2017, p. 120) referred to as 'pernicious ignorance': "any reliable ignorance that, in a given context harms another person or sets of persons". Collins (2017) framed the silencing as violence that functions to maintain and reproduce privilege, through 'epistemic gatekeepers' who carefully construct narratives and contexts that decide what knowledge counts. The stigma narratives and related structures developed around the VET space related to lower levels of knowing and TVET being for dropouts described elsewhere (i.e. Metelerkamp & Monk, 2023; Zeelen et al., 2010), are obvious points of epistemic injustice. Exclusions related to not including informal spaces (based in the same narratives) are less obvious. The concept of pernicious ignorance helps to clarify that by not purposefully creating spaces to learn from people or communities of knowers, an epistemic injustice is taking place. In other words, ignorance does not mean it is not happening. We feel that this is an important point for the field of TVET to take up in programme design. Programmes must include and understand the knowledge and experience of the youth (and other stakeholders – especially those who are absent or who are not understood well) in their design in order to become relevant and helpful. Arbitrary consultations are not adequate. The field must actively look for the gaps (in this case informality) and try to learn and adapt in order to understand them. This also extends to the field of research. Hawley (2017) claimed that

epistemically marginalised and excluded people(s), even when consulted, are often othered through research and consultation processes where they are treated as mere sources of information, rather than as equal epistemic agents. In the case of Uganda, the economy is mostly informally driven. This means that education (including TVET) needs to work in relation to and with the informal spaces if it is going to have an impact. This aligns with Wedekind et al.'s (2021) engagements in the intersections of informality and formality in TVET social skills ecosystems, claiming that a more democratic and adaptable TVET system needs to be put in place, which supports pathways, transitions and community needs.

Conclusion

A popular mystic from India, Sadhguru (nd), explained that in Hindu there are 16 different senses. He suggested that the game of suppressing the knowledge of these senses is akin to driving a 16-wheel truck on only one wheel – this puts a lot of pressure on the one wheel. Knowledge has been used fallaciously by a few humans as a tool of power and colonisation to dominate and suppress the other. If we are to survive the climate crisis we will need new and different approaches to thinking about living together. From our perspective, a good place to start listening is the pockets of activity that are flourishing in the boundaries.

The climate crisis represents a unique opportunity for marginalised people(s) to jump to the foreground of positive intervention and equal global participation in transforming the world. However, to do so requires a healthy epistemic ecosystem. We feel that the TVET sector (in Uganda) is particularly well placed to catalyse environmental innovation; however, it needs to move beyond the haphazard agential action of a few (epistemically marginalised) people. Rather, it needs to shatter the epistemic silencing of the lived experiences of those who are most closely connected to the climate crisis. The case of women and girls who face intersectional injustices (Monk & Davidson, 2021) requires additional and particular attention. More than ever before we need to recognise our vulnerability and interdependence, and develop more harmonious relations that are respectful and value the glorious and beautiful diversity of the world in which we live. We suggest that a rhizomatic vocational pedagogy for environmental sustainability is useful to conceptualise and orient our learning and living systems.

Notes on Contributors and their Contributions

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Percentage contribution

Areas of contribution	Author	% Contribution per area, per author (each area = 100%)
Conception or design of the paper, theory or key argument	Monk	40%
	Muhangi	20%
	Akite	20%
	Adrupio	20%
Data collection	Monk	45%
	Muhangi	10%
	Akite	0%
	Adrupio	45%
Analysis and interpretation	Monk	25%
	Muhangi	25%
	Akite	25%
	Adrupio	25%
Drafting the paper	Monk	55%
	Muhangi	15%
	Akite	15%
	Adrupio	15%
Critical review of paper	Monk	40%
	Muhangi	20%
	Akite	20%
	Adrupio	20%

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