THEMATIC PAPER: APPRENTICESHIP

Using the theory of practice architectures to inform transformative apprenticeships: A case study of apiculture education and training in Aotearoa New Zealand

John P. Howse[*]

Quality and Academic Development, Toi Ohomai Institute of Technology, Tauranga 3112, Aotearoa New Zealand

ABSTRACT

Through a case study of the practices of beekeeping in Aotearoa New Zealand (NZ), this research used the Theory of Practice Architectures to explore the conditions of possibility inherent in beekeeping practice traditions to inform an efficacious and transformative vocational education and training system to meet broader social, economic and environmental sustainability goals. The findings illuminate why disparities and tensions between practice perspectives of beekeeping and the Apiculture qualifications and programs exist, to then suggest strategic and practical approaches to appease them. Ongoing and nuanced empirical accounts using this approach are advocated for as a means to improve an understanding of and the innovative design for a transformative apprenticeship for apiculture in Aotearoa NZ and other contexts going forward.

Key words: transformative education and training, just transitions, theory of practice architectures, transformative apprenticeships

INTRODUCTION

This paper reports on the outcomes of my doctorate (Howse, 2024) using the Theory of Practice Architectures (Kemmis, 2022) as a practice-theoretical research approach to consider future trajectories for vocational education and training (VET) in the policy context for "just transitions"—the notion that urgent transitions to low carbon futures should also be fair and just to the most vulnerable populations (McGrath & Ramsarup, 2024; UNESCO, 2022). This was achieved through a year-long ethnographic case study conducted on the vocational practices of beekeeping in a work- and study-based research project in Aotearoa New Zealand (NZ).

Beekeeping supports the livelihoods of many commercial enterprises of differing sizes in Aotearoa NZ and a flourishing network of hobbyists, contributing to the export of Aotearoa NZ's unique honey types and pollination to Aotearoa NZ's horticulture industries and exports. Traditionally, the learning of and pathways into beekeeping were informally supported through the transfer of intergenerational family practices and knowledge specific to different regions of the country (Matheson & Reid, 2018; Newton, 1999). More recently, apiculture education and training has been formalized into a suite of apiculture qualifications at level 3 and 4 on the New Zealand Qualification and Credentials Framework (NZQCF), the most recent initiative being the introduction of a 2-year Apprenticeship in Apiculture.

The genesis of this study was to explore the strategic aspirations of a transformation agenda for VET championed in international policy and recent VET reforms in Aotearoa NZ and how these aspirations are expected to unfold in the sites where transitions and transformations of practices are to take place. To achieve this, the Theory of Practice Architectures (Kemmis, 2022) was used conceptually and heuristically to guide an analysis of the sayings, doings and relatings of the practices of beekeeping to then identify the cultural-discursive, material-economic and social-political arrangements and "conditions of possibility" (Kemmis *et al.*, 2014) that hold beekeeping practices in their course that can inform notions of a relevant VET for apiculture. This presented a promising opportunity (Chan, 2020) to generate knowledge of the types of meaningful practice to inform transformative and meaningful education and training for beekeeping going forward, including what a transformative apprenticeship in apiculture might entail.

METHODS AND RESEARCH DESIGN

To manage the potentially large scope and scale of practices to observe, a shift on Nicolini's "tool-kit" analogy (Nicolini, 2013) towards a workshop logic of research tools was selected to survey, capture and analyse practice landscapes. This logic was rationalized as a form of philosophical-emperical inquiry (Kemmis, 2022) on the premise that empirical accounts of vocational practices may generate new philosophical accounts of those practices, to further develop new theoretical insights and research tools and approaches to deploy to understand learning as the "reproduction with variation" and "transformation" (Kemmis, 2021) of those practices.

The tools selected to "zoom in" to survey the practice landscape included a qualitative ethnographic case study while working in a commercial beekeeping operation over a four-month period of the beekeeping season and attending a one-year, part-time apiculture program at a local training institute. This was followed by a review of historical documentation to "zoom out" to trace genealogies and connections of these practices in and over time and space.

The tools selected to empirically capture the sayings, doings and relatings of beekeeping practices as they unfolded included a hybrid observant-participatory role and unstructured informal interviews supported with the use of field notes, photographs and document analysis. The tools selected for analysis included a comprehensive memoing activity of practices followed by the ongoing recursive process of reflexive thematic analysis. The cumulation of the research activities generated a complex array of beekeeping practices consisting of the sedimented sayings, doings and relatings observed and experienced in the fieldwork activities and identified in the thematic review. Finally, an analysis of the practices of hive work and seasonal colony management, as two "niches" (Kemmis, 2022) of practice particular to beekeeping, was selected to generate a "table of inventions" (Kemmis, 2022) which was used to synthesize notions of relevant beekeeping practices against the suite of apiculture qualifications and programs.

RESULTS

The findings identified that an affective dimension of care is inherent in the traditions of beekeeping practices evident in the methodical yet careful and considered corporeal movements beekeepers make in the hive and subsequent talk of and relating to care for honeybee welfare during hive work and in seasonal and multiple-season decision making. The practice arrangement that describes this affective dimension is the moveable frame type hive (*e.g.*, Langstroth hive), innovated over 170 years ago, that enables beekeepers to manipulate colonies to obtain some productive capacity from them (*e.g.*, honey or to pollinate) while being careful to not unnecessarily disturb the colony or kill the queen. In addition, developing deep local knowledge of the unique flora and climatic conditions found in the local ecologies where apiaries are kept and that vary from year-to-year is necessary to ensure colony well-being over the season. These situated material-economic arrangements are subsequently generative of the cultural-discursive and social-political arrangements that reproduce the types of situated knowledge and expertise shared through the solidarity between beekeepers in the ongoing care of their colonies in these locations, while benefitting from the productive output from this unique human-bee relationship.

This affective dimension however is ignored in qualification and programming language and rather manifests implicitly through these practices of care in the field. On the contrary, an explicit industry focus on practices of honeybee pollination efficiency and honey yield maximization contained in qualification and program language is seen to create tension between these practice traditions. This helps to illuminate why disparate experiences between training and work manifest as well as how VET can be complicit in shifting trajectories of beekeeping practices towards the homogenization and adoption of industry prerogatives over the practice traditions that have otherwise sustained the reproduction of a meaningful praxis in these sites.

Hence, while the time-bound commitment of the two-

year Apprenticeship in Apiculture qualification offers an appropriate pathway for newcomers to enter into and develop situated expertise and knowledge, this needs to be rationalized against the informal, intergenerational ways beekeeping practice traditions have traditionally been sustained and reproduced. In addition, the promotion of the formal apprenticeship must consider the influence industry prerogatives contained in qualification and programming language may have in changing the beekeeping practice landscape in ways that may erode the foundations of solidarity and care, and subsequent effect this may have on the efficacy, attractiveness and sustainability of the apprenticeship in the long run.

By contrast, making the affective dimension explicit in the curricular and pedagogical approaches to apiculture education and training may inform and empower newcomers as guardians and stewards of honeybees and the ecologies that support them. This more closely aligns to the dispositions and attitudes beekeeping operators need from newcomers to commit to the long-term, multi-season, "life-world" of their operations, while providing newcomers with more accurate expectations of what is entailed in the life-long commitment to being a guardian of honeybees.

Incorporating these insights would require an innovative shift in thinking about the design of the beekeeping apprenticeship and how this might "fit" into the qualification framework and existing VET settings. It also requires understanding how these practice perspectives of beekeeping may be entertained at the tables of stakeholders tasked with qualification development and standard-setting, raising additional, possibly uncomfortable questions about the practices and practice arrangements of these practices as well.

CONCLUSION

The outcomes of the research suggest that ongoing and nuanced empirical accounts of the conditions of possibility of vocational practices are necessary to improve knowledge of the efficacy, value and attractiveness of apprenticeships to learners and employers in different occupational, professional and vocational fields and in the context of just transitions. While other studies may use different approaches and yield different results, this can be supported through a workshop logic to research design to raise difficult, maybe even uncomfortable or dangerous (Hopwood, 2021) questions about the role of VET in the shaping of just or unjust practices while exploring opportunities to innovate transformative apprenticeships going forward.

DECLARATIONS

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Author contributions

Howse JP: Writing—Original draft, Writing—Review and Editing. The author has read and approved the final version of the manuscript.

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Ethical approval

The study protocol was approved by Te Kura Toi Tangata Faculty of Education Ethics Committee, The University of Waikato, approval code FEDU050/21.

Informed consent

Written informed consent was obtained from the participants for publication.

Conflict of interest

The author has no conflicts of interest to declare.

Data availability statement

Data used to support the findings of this study are available from the corresponding author upon request.

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