Part II
Research Paradigms

The diverse theoretical and conceptual accounts for understanding both professions and professional learning are this part's key focus. Its contributions indicate something of the scope of methodological approaches identified and adopted to investigate both the professions and professional learning. These approaches are represented by accounts of methods and paradigms which are used to engage in scientific enquiry associated with what constitutes professional work and its learning. For instance, in their chapter – *Understanding learning for the professions: How theories of learning explain coping with rapid change* (Chap. 8) – Erno Lehtinen, Kai Hakkarainen and Tuire Palonen review theories of learning to ascertain their accounting for the ways that the dynamic requirements for professional working life can be initially learnt and then addressed across lengthening professional lives. What they hold is that given the uncertainty about particular kinds of knowledge is necessary to identify which accounts of knowledge and learning furnish helpful advice about proceeding with supporting such development. Throughout, all of these accounts the mediation of knowledge for new generations of professionals was emphasized although how they account for, can tolerate and support the dynamic requirements of evolving professional practice is less clear. A helpful example of how to understand interactions and learning through practice and for professional learning is provided in the chapter by Laurent Filliettaz. Entitled *Understanding learning for work: Contributions from discourse and interaction analysis* (Chap. 9), this contribution highlights the importance of accounting for the discursive and interactional aspects of professional work and its learning. Necessarily interdisciplinary, this chapter illustrates how two distinct fields (i.e. linguistic method and educational research) offer complementarity and augmentation in addressing the specific and complex phenomenon of learning through work. Moreover, methodologically, this contribution illustrates the consonances between social theories of learning and approaches and procedures that are adopted within the fields of discourse and interactional analysis.

The centrality of method is foremost in the contribution from Paul Gibbs – *Research paradigms of practice, work and learning* (Chap. 10). From the field and

perspective of philosophy, this contribution argues for a multiplicity of methods and an emphasis on judgement rather than neutral objective premises of certainty in researching practice work and learning. It proposes that the messy research problems found within professional fields of practice warrant consideration within that context and needing to be grounded within explanations that can accommodate such indeterminacy and multiplicity. In making this case, he adopts critical realism as his foundation and premises this choice on its applicability to addressing issues that are relevant to practitioners, including its transdisciplinary reach. In their chapter – *A phenomenological perspective on researching work and learning* (Chap. 11) – Gloria Dall'Alba and Jörgen Sandberg similarly seek to account for the complexity of relations between work and learning. They hold that conventional approaches tend to separate individuals who are learning and the work to be learnt. Rather than accepting this separateness, they hold that the subject and the object are richly intertwined and, as a consequence, methods and procedures are required that can accommodate both perspectives and their interactions. In doing so, they elaborate a life world perspective on researching work and learning, which emphasises interdependence and relational perspectives as informing both work and learning.

From a distinct perspective, in his chapter – *The neuronal base of perceptual learning and skill acquisition* (Chap. 12) – Mark Greenlee examines the relationship between the organism and the environment. This chapter proposes that as interactions between persons and their environments progress across life histories, that a greater understanding of how the neural system mediates what is experienced and how responses arise is now warranted. Adopting views and conceptions from neuroscience, these are utilised to elaborate both perceptual learning and the process of skill acquisition. A review of concepts and contributions from this science provides a platform through which a case is made about understanding the immediate and longer term consequences of interactions with the environment as mediated through neural processes. These consequences include changes that arise in nervous system as a result of encountering particular kinds and configurations of stimulus. In conclusion, considerations are given, to the qualities of particular learning environments.

In another specific approach, Eva Kyndt and Patrick Onghena in their chapter – *Hierarchical linear models for research on professional learning: Relevance and implications* (Chap. 13) – propose that it is important for quantitative analysis to be applied to the field of professional learning because much of the conceptions, theorisations and literature emphasises qualitative method. In essence, the chapter provides an overview of these models, their applicability to the field and key premises through which they utility can be understood. They seek to make explicit the ways that hierarchical linear modelling can lead to significant contributions to the field of professional learning. The authors then exercise and exemplified this claim through engaging with the body of literature about employees' intentionality as directed towards their learning. In doing so, they rehearse and extend many of the key premises associated with quantitative method and its broad applicability to this field. Catherine Hasse, conversely, in her chapter – *The anthropological paradigm of practice-based learning* (Chap. 14) –makes the case for anthropological research to

be used more fully and comprehensively in enquiries associated with work and learning. Again, this chapter sets out much of the method adopted within this paradigm and introduces foundational studies and more recent contributions in elaborating its utility. In doing so, she offers the reader an account of the origins of anthropological method and its development over time. She includes examples from broadly related fields of the development of culturally important knowledge and practices and then makes the links to the application of these foundations to understanding professionals' learning and work. In doing so, she also engages with current debates within and contributions from anthropology that have direct relevance to professional learning.

Although by no means exhaustive, these contributions represent some of the methods and paradigms that can be used in the field of professional work and its learning. As such, key and contrasting methods are included, illustrated and discussed in this part.