

# **Professional and Practice-based Learning**

Volume 16

## **Series editors**

Stephen Billett, Griffith University, Griffith, Australia

Christian Harteis, University of Paderborn, Paderborn, Germany

Hans Gruber, University of Regensburg, Regensburg, Germany

*Professional and practice-based learning* brings together international research on the individual development of professionals and the organisation of professional life and educational experiences. It complements the Springer journal *Vocations and Learning: Studies in vocational and professional education*.

Professional learning, and the practice-based processes that often support it, are the subject of increased interest and attention in the fields of educational, psychological, sociological, and business management research, and also by governments, employer organisations and unions. This professional learning goes beyond, what is often termed professional education, as it includes learning processes and experiences outside of educational institutions in both the initial and ongoing learning for the professional practice. Changes in these workplaces requirements usually manifest themselves in the everyday work tasks, professional development provisions in educational institution decrease in their salience, and learning and development during professional activities increase in their salience.

There are a range of scientific challenges and important focuses within the field of professional learning. These include:

- understanding and making explicit the complex and massive knowledge that is required for professional practice and identifying ways in which this knowledge can best be initially learnt and developed further throughout professional life.
- analytical explications of those processes that support learning at an individual and an organisational level.
- understanding how learning experiences and educational processes might best be aligned or integrated to support professional learning.

The series integrates research from different disciplines: education, sociology, psychology, amongst others. The series is comprehensive in scope as it not only focusses on professional learning of teachers and those in schools, colleges and universities, but all professional development within organisations.

More information about this series at <http://www.springer.com/series/8383>

Stephen Billett • Darryl Dymock • Sarojni Choy  
Editors

# Supporting Learning Across Working Life

Models, Processes and Practices

 Springer

*Editors*

Stephen Billett  
School of Education and Professional  
Studies  
Griffith University  
Mt Gravatt, QLD, Australia

Darryl Dymock  
School of Education and Professional  
Studies  
Griffith University  
Mt Gravatt, QLD, Australia

Sarojini Choy  
School of Education and Professional  
Studies  
Griffith University  
Mt Gravatt, QLD, Australia

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## Series Editors' Foreword

A central focus for the *Professional and Practice-Based Learning* book series is on understanding the processes supporting individuals learning the capacities required for effective professional practice, and on the way how experiences in workplace settings contribute to that development across the span of working life. Consequently, a volume that focuses on both the processes of ongoing development across working life, and the different means by which that learning is supported and sustained are central to the scope and ambitions of this series. Moreover, as much of the educational effort is directed towards initial occupational preparation, it is helpful to have a volume that offers models for how that learning might be supported, and elaboration of processes through which that learning arises, and also workplace and personal practices that promote that learning. As such, this volume makes a welcome contribution to this series. As the editors elaborate in their lengthy preface, a range of terms is used to refer to the ongoing development of occupational competitors, including but not restricted to continued education, training and professional development. However, common to all of them are kinds of learning that are directed towards sustaining employability, often associated with and for through engagement in work.

All this interest and emphasis lead to questions about what is often referred to as the lifelong learning agenda. Although, in governmental policy terms, this agenda is seen as being exercised largely through educational programmes, there also needs a greater consideration of how practice-based experiences can contribute to ongoing learning across working life. This is not to suggest that educational programmes have no role or should be reduced and disbanded. What it does suggest is that a greater consideration needs to be given to the focus on learning across working life, and how that learning can best be supported both through experiences in work settings and elsewhere.

Helpful here is the breadth of the occupational areas that are represented throughout this volume. Considerations of social workers, teachers, doctors and hospitals as well as those in general practice, as well as individuals working in the aviation sector sit alongside those who work in mining, aged care, commerce, and service related industries. There are similar imperatives across all of these sectors associated

with ongoing learning and development associated variously with securing employment, seeking advancement, improving and enhancing practice and engaging in new forms of work. Moreover, the studies are drawn from a range of countries all of which have modern industrialised economies of the kind that are experiencing significant challenges and demands for the restructuring of work and changing working requirements.

Hence, the contributions provided to this volume should be of interest to those working in the tertiary education sector, professional and industrial bodies associated with responding to change in work and the ongoing development of workforces, as well as with considerations how to support and sustain employees' learning across the working lives. Then, within all this there is the central role of the learners themselves and how they need to engage with the kinds of experiences they are afforded to achieve their work life goals. This is particularly important because in focusing on practice-based experiences, the need for workers to play a greater role in mediating that and other workers' learning arises. Outside of the domain of education institutions, there is the need for workers themselves to assist in the process of the road and others learning across working life.

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Paderborn, Germany  
Brisbane, Australia  
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Hans Gruber  
Christian Harteis  
Stephen Billett

# Preface

Worldwide, in countries with advanced industrial economies, there is a growing interest in sustaining all kinds of workers' employability and advancing their careers across their now lengthening working lives. This interest is articulated by the policies of governments, exercised in the mandates of professional bodies, requirements of employers and actions of workers (Field, 2000). Much of this interest is driven by key social and economic imperatives associated with sustaining individuals' employability (Edwards, 2002), advancement in the context of changing requirements of work and working life (Billett, 2010; Department of Education Science and Training, 2002; Organisation for Economic Co-operation and Development, 2010) and responding to changes or more fully meeting societal expectations (National Health Service, 2010). Significant transformations are occurring within most, if not all occupations, and will continue in frequency and amplitude across people's lengthening working lives (Coffield, 2000; OECD, 2006).

These changes include the kinds of work which are available, changes in the requirements for that work, how it is enacted and who is undertaking that work (Billett, 2006). For instance, in many countries, there is a growing polarisation in labour markets. On the one hand, there is a shift towards service-related occupations that are often contingent in their employment conditions and precarious in their duration, with limited prospects for continuity and advancement. On the other hand, there is a growing demand for technical, paraprofessional and professional occupations requiring high levels of educational achievement, and is in constant need of ongoing development, such as that required in the field of healthcare (National Health Service, 2010; O'Keefe, McAllister, & Stupans, 2011).

Yet, these different kinds of occupations often experience distinct demands for continued learning. Those employed in contingent work, which includes short-term contracts and work conditions and continuity that are precarious, are likely to be involved in job or task-specific training provisions to support their employability, including their advancement, across working lives (Cervero, 2006). Increasingly, these kinds of occupations are subject to achievements of certificates, through mandated short-term courses, which are often related to regulatory arrangements associated with occupational health and safety, hygiene or aspects of work that include

risks to workers or clients. So, these workers need to engage in training programmes often with assessments required to demonstrate occupational competence. The same goes for technical, paraprofessional and professional workers such as those in healthcare who are required to sustain the currency of their skills and, potentially, demonstrate that competence to retain occupational licensing. So, workers in these highly dynamic occupations are often required to demonstrate currency of skills and work competence (National Health Service, 2010). Therefore, for both kinds of workers, the changing requirements for work will mean needing to update, transform or extend the capacities they developed during initial training for their occupations.

Much here also suggests that, to achieve these outcomes, the kinds and processes of learning and learning support need to be different from and go beyond that comprising initial occupational preparation as provided by training organisations, tertiary education institutions, including universities. That is, much of this ongoing learning and development of occupational capacities cannot be realised through the models, processes and practices of initial occupational preparation, which are typically education institution-based, long-duration programmes divided into subjects that are taught in circumstances remote from where the requirements for employability are manifested (Billett et al., 2012, 2014). The possible exception here is for those workers whose occupational skills are no longer in demand or afford them employment. For these individuals, provisions of continuing education are those which will help them secure employment in areas of growth and occupations with greater stability, which can extend through to learning a new occupation, as in initial occupational training.

So, there is a need to identify models, processes and practices that can effectively support ongoing learning for these different kinds of workers. That is, consider, and potentially rethink and reorganise how support for learning across working life can be best conceptualised, organised and enacted. These are the key focuses for individual and collective contributions to this edited monograph. Such considerations seem important currently and for the foreseeable future.

There seems a little indication that the nature of these changes to work and working life will dissipate, and even less that they will disappear. Instead, there will continue to be shifts in the demands for particular occupations and changes in the requirements for work performance within a growing range of occupations. These changes extend beyond the technical competences of the occupation and include the ways work is undertaken. For some, these changes involve workers engaging in teams where performance is based on collective action rather than individual prowess, and collaborative discretion and decision-making. It can also include having a range of capacities to service the needs of clients or agencies more directly and in a targeted way than might have occurred in the past (Billett et al., 2012).

Furthermore, workplaces are becoming increasingly heterogenic in terms of the gender, age and ethnicity of workers across many sectors. Consequently, the growing demand to sustain employability extends to working productively with others whose precepts, needs and capacities may well be more diverse. It is perhaps not surprising that demands to sustain employability are placing a premium on ongoing



learning through and for work, and emphasising the importance of the continuation of learning and educational provisions across working life (Field, 2000), sometimes variously referred to as continuing education and training, professional development or recurrent training.

Clearly, there is growing concerns by and action now being undertaken by global agencies, national governments, professional bodies, industry associations, workplaces, educational institutions and learners themselves about continuing to learn for occupational purposes across working lives. Much of that learning is likely to be associated with sustaining employability, including occupational or workplace advancement. Global agencies and national governments are making arrangements to organise and sustain continuing education and training, or professional development to meet important economic and social goals (Yacob, 2009) through supporting individuals' learning (OECD, 2006).

Professional bodies and industry associations are concerned about having workers identifying with their sectors and occupations as being effective and current, and sustaining the standing of those occupations. These bodies are increasingly coming to share concerns about the need for CET or PD for their sector, and members having access to arrangements that support their learning and having that learning certified as a requirement for individuals to maintain their occupational license. Many workplaces are also addressing concerns about skill shortages and ageing workforces (Tikkanen, Lahn, Ward, & Lyng, 2002) through workplace-based continuing education provisions and engaging with providers of such programs. Moreover, for individuals now faced with maintaining employability across lengthening working lives, the ability to secure and sustain their occupational competence arises as a key personal and professional consideration (McNair, Flynn, Owen, Humphreys, & Woodfield, 2004). Increasingly, and likely in the future, many individual workers will need to make greater material and personal investments in sustaining that employability through arrangements supporting and certifying learning across their working lives, as governments in advanced industrial economies tend to now enable rather than support it directly (Field, 2000). In particular, in small- and medium-sized companies, where human resource development provisions may well be absent, there is increasing need for models for continuing education that are viable for such enterprises and which are adaptable enough to meet dynamic workplace requirements. There is also a need for processes for sustaining employability which are able to meet workplace requirements including regulatory measures advanced by government agencies, yet in ways that are accessible for workers.

However, it might be mistaken to conclude that while there are a common set of concerns and perspectives across these interested parties, the preferred means of addressing those concerns are commonly agreed upon. Indeed, in their study of workers, managers and training organisations, Billett et al. (2014) found that there were quite distinct preferences across these parties. For instance, workers' concerns were about sustaining their employability and securing advancement in their current employment, and their preference was towards models of continuing education and training focused on and based in their workplaces. That is, they preferred to learn in their workplace, being supported by more experienced co-workers, supervisors and

external trainers. It was usually only when their motives were to secure new occupations or advancement in occupational hierarchies that they preferred to engage in programmes within educational institutions. However, and in contrast, many managers reported a preference for employees to participate in training programs so that they might develop the kinds of capacities which they could target and pre-specify as being the object of these programmes. Whereas workers, not surprisingly, were interested in developing the capacities associated with their interests and goals, managers were more focused on outcomes associated with meeting enterprise-specific outcomes.

In turn, the preferences of those from the training sector (i.e. vocational educators) were for provisions of continuing education and training to be largely undertaken within educational institutions through educational programs they offered, thereby rehearsing current practices and preferences. Moreover, the interests of national agencies associated with continuing education and training very much reflected their particular mandates and purposes. So, across these parties there were divisions in the goals for continuing education and also the means by which that education might be enacted (Billett et al., 2012).

All of this suggests that models and processes for continuing education and professional development are likely to require kinds of support and guidance from learning that go beyond those offered through orthodox classroom-based provisions and aligned with standard educational practices. Instead, procedures aligned with workplaces' goals, available resources and embedded in practice situations may well be required. Put simply, the kinds of education and development models that are often used in initial occupational preparation, and that usually focus on young people, will not necessarily be those which will become orthodox in the future. Practice-based provisions of learner support and guidance may well become far more common and integrated with everyday work life of employees, their supervisors and those who manage enterprises.

So, in considering how provisions of continuing education and training, professional development and recurrent training need to progress, it is necessary to not be constrained by models which fit comfortably within practices of tertiary education institutions. Instead, such models, processes and procedures might take quite diverse forms; engage with workers and others in ways quite distinct from orthodox educational provisions; and demand engagement and agency of workers that are different from when they are positioned as subordinates or students.

Hence, a consideration of different approaches, precepts and practices is now necessary because simply expecting educational provisions to be able to meet these goals or relying on the practices of educational institutions is probably not only fanciful because of the financial and institutional resources for such provisions, but also because identifying effective means of securing this ongoing learning is now a governmental priority in many countries. That is, work-related lifelong learning (i.e. for working life) is now becoming a common area of focus for: (i) policy action by governments and global agencies, (ii) securing currency by professional bodies, (iii) initiatives by employers to maintain the skill levels of their workforces and (iv) workers to sustain their employability and locate opportunities for advancement and

specialisation. Consequently, there is a need to consider what kind of models for organising these learning experiences are to be used in continuing education and training, professional development and recurrent education. An additional question is in what ways these models are likely to be effective for different kinds of work, learning and learners. Therefore, considerations for educational and learning support processes will likely need to include approaches that fit well within working lives and workplaces, and support work and learning as a co-occurrence.

## Structure of Book

The structure of this monograph reflects the sets of concerns set out above. As such, it comprises four parts: (i) *Supporting learning across working life*; (ii) *Models, processes and practices for supporting lengthening working lives internationally*; (iii) *Towards a national model of continuing education and training: an Australian case study*; and (iv) *Learning across working life*. The Preface introduces each of the chapters, highlighting their particular contributions to the edited volume. An overview and the contents of each of the four parts that follow the Preface are provided here in preview.

## Part I: Supporting Learning Across Working Life

In the opening chapter, *Conceptualizing Lifelong Learning Across Working Life, Provisions of Support and Purposes*, Stephen Billett and Steven Hodge propose there are growing national and global policy focuses as well as local concerns about lifelong learning, particularly as it pertains to working life. At the commencement of this book, it is important to capture some key precepts through what comprises these concerns and how they can be understood and addressed. These include being clear about what this concept of learning for working life comprises, and the kinds of purposes to which that learning is held to be directed. This necessitates securing greater clarity about what are variously referred to as lifelong learning, lifelong education or learning across working life so they can be distinguished from each other, and their specific qualities and characteristics understood.

Currently, the overall concern is about individuals' learning across working life and how this can be effectively promoted and supported when addressing needs associated with sustaining their employability. Beyond resisting unemployment, employability includes workers developing and sustaining the kinds of capacities needed by their workplaces to remain viable as requirements of goods and services change, the industry sectors in which they work seeking to remain responsive to transforming demands and for the nations in which their citizens are to be competitive in the production of goods and services. In essence, these sets of personal, workplace, local and national lifelong learning imperatives arise from the realisation

that individuals' initial occupational preparation will be insufficient to meet their needs for employability across lengthening working lives. The dynamic requirements for work mean that focused and sustained learning across working life is now required by all kinds of workers, occupations and industry sectors. Having defined some of the key concepts, discussed precepts and concerns, the purposes of intentional learning through and across working life are set out through considering both personal and institutional imperatives. Following this, consideration of approaches for organising, ordering, supporting and guiding this intentional learning are advanced.

## **Part II: Models, Processes and Practices for Supporting Lengthening Working Lives Internationally**

This part comprises nine chapters, each of which makes a particular contribution to the discussion about approaches for sustaining and developing further workers' employability across working lives. These contributions include reviews of literature about learning through work and working life, and learning through experience more broadly, including how effective work capacities are created and extended within professional fields. Also discussed within this part is a consideration of a systemic approach to promoting learning across working life through institutional arrangements.

In the first chapter in this part, *Employee Strategies in Organizing Professional Development*, Rob F. Poell and Ferd J. Van Der Krogt propose that many employees in the twenty-first century are given great responsibility in organising professional development. Increasingly their own input is called upon in pursuing lifelong learning, preserving their employability, creating a career development plan and using learning opportunities available in the workplace. This tendency has considerable implications for organising human resource development (HRD) in organisations. HRD comprises a complex constellation of actors, structures, facilities and processes for learning and development. Each employee needs to create his or her own path through this learning landscape. Thus they need to operate strategically when it comes to organising their own professional development, with a view to acquiring the qualities that will enable them to conduct their present job, to obtain new/better positions in the labour market and to realise the necessary personal development. Of course, it could be suggested that there is nothing new here; self-directed learning by employees has surely been on the agenda for decades already. Nonetheless, HRD practices and the roles of employees are changing so dramatically in the twenty-first century that individual self-direction is no longer sufficient for employees to organise their professional development. A major change in the existing HRD theory will be necessary to be able to better analyze the developments in organising professional development and to support organisational practices around HRD. This chapter aims to contribute to such a change, by showing that employees can operate

strategically in several ways when it comes to organising their own professional development.

The chapter first describes two major changes that are to be expected in organising professional development, which have far-reaching implications for the roles of employees. First, it proposes a shift from a didactical to a strategic role and, second, a shift from directing their professional development individually to doing so in a network of actors. The chapter then presents an employee perspective on organising professional development, to suggest several ways that employees can engage strategically. Furthermore, the chapter discusses existing empirical research about employees' professional development strategies and confronts the results with theory. The chapter concludes with a number of suggestions for further research into employee strategies for organising professional development.

Following this professional development theme, in their chapter, *Learning to Work Together Through Talk: Continuing Professional Development in Medicine*, Walter Eppich Jan-Joost Rethans, Pim W. Teunissen and Tim Doran examine the development of professional identity, particularly through collaborative learning. They propose that initial education takes place in programmes accredited by medical regulatory bodies and curricula are largely or entirely uniprofessional. After graduation, doctors enter the workforce and learn to work alongside other professionals, whose identities are similarly uniprofessional. This second phase of doctors' education is termed residency. Once residency is completed, doctors become independent practitioners. They work in medical teams, usually composed of several fully trained doctors, a number of doctors in training and perhaps medical students too. There is a formal requirement for doctors to remain in an educational programme for the remainder of their working lives. Continued licensure is a prerequisite to remain licensed for practice. The focus of this proposed chapter is on how doctors learn to work collaboratively throughout their working lives and how they become interprofessional workers. Whilst learning to work collaboratively with other doctors is an inescapable component of medical education from residency onwards, my personal experience is that much of the formation of a truly interprofessional identity takes place after formal education has finished. The type of continuing education in which doctors are required to undergo to remain licensed is uniprofessional and predominantly off-the-job so it contributes a little to useful development of interprofessional skills. But, meanwhile, medical practice is constantly changing, there is a continuing trend towards increased interprofessional working, and each re-organisation of health services requires doctors and their fellow health professionals to adapt.

This chapter highlights the essential role of discourse in learning and the development of professional identity of physicians. Shared understanding and co-construction of clinical experiences – and learning – are mediated through talk. Argue contemporary continuing professional development focuses on knowledge acquisition that is divorced from authentic clinical practice. We provide examples of structures that strengthen collective learning processes and steer the discourse of practice in ways that promote learning. Patient focused-quality improvement projects and simulations aligned to workplace needs could meet the requirement for

continuous professional development to be both measurable and linked to authentic practice. Future work could usefully further explore how steering the talk of practice can promote learning.

Gunilla Avby continues the theme of professional development in her chapter – *Organizing for Deliberate Practice Through Workplace Reflection*. What it proposes is that the bases for professional work is no longer stable, but rather is in constant transition. This constant process of change emphasises the need for professionals to engage in continuous learning, critical awareness and renewal and extension of professional capacities to sustain employment and ensure effectiveness in practice. The growing demands in professional work have unquestionably put social work in Sweden under close scrutiny. Different stakeholders have displayed a growing interest in evidence-based approaches so as to develop the existing knowledge base and enhance decision making. Whilst the role of work-based learning and reflection for practitioners and managers in work so far has received a little attention, the evidence-based agenda has highlighted its importance as practitioners are increasingly expected to critically appraise evidence and integrate new findings into their practice.

The focus of this chapter concerns reflection as a mechanism for professional development. The chapter presents a theoretical framework with the aim of contributing to improved understanding of how workplace reflection can provide a mechanism to integrate research-based knowledge with pre-existing practice-based knowledge. A basic assumption behind this chapter is that when tacit knowledge is articulated and externalised, it can be shared by others, possibly to be challenged, by using explicit knowledge and function as the basis for new knowledge and learning. Another important presumption is the importance of organising learning at work. The chapter is structured in three sections. In the first section, a distinction is made between two different but complementary knowledge forms, research-based and practice-based knowledge, and two modes of learning in work, adaptive and developmental learning. In the second section, two mini cases concerning managers in the public sector in Sweden serve as an illustration of how reflection can provide a mechanism to integrate research-based and practice-based knowledge. In the concluding section, some of the challenges involved in achieving reflection in the workplace that exploits research-based knowledge are addressed.

The section then moves from considerations of professional development strategies and processes to a proposal for *A Sociocultural Model for Mid-Career Post-Secondary Teacher Professional Learning*. Annique Boelryk and Cheryl Amundsen describe a multi-phased, sociocultural model of teacher professional learning that emerged from the findings of a descriptive phenomenological study. The aim of the study was to better understand the complex sociocultural learning process involved in the development of teaching practice for mid-career post-secondary teachers. In post-secondary institutions, increased demand for enhanced teaching and learning practices has led to growth in educational development, a field that supports professional learning related to ongoing development in teaching. Sociocultural research now needs to inform the design of educational development approaches, particularly as it relates to teachers' authentic experiences of development in teaching. The

model, that was the product of that inquiry, comprises a four phase developmental process that includes: (i) a catalyst phase, (ii) an idea development phase, (iii) an implementation phase and iv) an outcomes phase. The nature of each phase is explored through discussions of the individual, social and contextual dimensions as well as interrelationships between these dimensions. Using Billett's sociocultural theory of co-participation, learning in each phase is examined as the interrelationship between individual intentionality and workplace participatory practices. Educational development approaches are then considered through the lens that the proposed model offers as it provides an empirical foundation for a sociocultural approach to supporting post-secondary teacher professional learning.

That focus on a particular profession but considering wider applications of the research findings is continued in the next four chapters in this part, each of which is based around case studies in organisational settings in particular fields: aged care, nursing, pharmacy and medicine and aviation.

Charlotte Wegener proposes in her chapter – *Driving Forces of Welfare Innovation: Explaining Interrelations Between Innovation and Professional Development* – that innovation is now no longer seen solely as a function of management and investment or as top-down initiatives from policy levels. Along with a broader view of innovation, expectations of educational institutions as innovation drivers have increased. Within educational research, innovation is regarded as a competency which can contribute to a better world and as the transformation of creativity into something valuable for others in a given social practice. In Denmark, innovation has been introduced as a solution for addressing growing global economic competition, so the Danish Government formulated policies for the development of innovation competencies and strategies at schools and workplaces. Innovation competencies can be imparted, and innovative workplace cultures can be created and nurtured. But how?

The chapter discusses the potential and necessary interrelations between professionals' ongoing development and their engagement in innovative practices at work. A growing number of countries and organisations are putting great effort into integrating innovation in school curricula, as well as in staff and manager training programmes. Innovation strategies and government-sponsored documents throughout the world have stressed the need to accelerate innovation. Innovation is no longer reserved for research and development departments or the so-called creative professions. It has become a key goal towards which on-going professional development needs to be directed. Now perceived as germane and even necessary in almost all kinds of work, the innovation potential in everyday practices and ways of allowing for employer creativity have become highly relevant objects of study. However, there is a need to know what professionals actually do in the process of experimenting in and through their work, as well as the managerial priorities from which experiments and adjustments can be supported to become innovations. Traditionally, research has regarded innovation in terms of phases of invention, implementation and dissemination. These phase models, despite often being described as messy and iterative may, however, be inadequate for investigating and supporting innovation as an integrated part of ongoing professional development. A case study of everyday

innovation efforts in elderly care in Denmark is used here to propose an alternative model. The model suggests that innovation can be studied and supported by means of three driving forces, termed (i) craft (i.e. professional skills and knowledge), (ii) levers (i.e. experiments and adjustment of routines) and (iii) purposes (i.e. values and visions). The model points to the necessary interrelations between professionals' ongoing development and their engagement in innovative practices and thus provides a conception of welfare innovation which is not translated from firm innovation, but derived directly from welfare contexts.

Focusing on sustaining competent practice, this time in health care, Johannes Bauer, Veronika Leicher and Regina Mulder in their chapter, *On Nurses' Learning from Errors at Work*, emphasise the importance of ongoing professional learning within the occupation of nursing. This learning relates to the dynamic nature of nurses' work, characterised not only by continuing changes in professional knowledge and standards but also by new developments in organisational conceptions of nursing, patients' demands or changes in the workforce structure. Next to being an important profession in itself, these features make nursing an interesting case which receives increasing attention in research on workplace learning and professional development. This chapter synthesises several of the authors' studies that investigated processes, practices and conditions of nurses' learning at work related to the occurrence of errors. Dealing with errors in a learning-oriented way has been subject to intensive debate in health care. Researchers have argued that errors can be important sources of professional learning, if they are analyzed properly, and thereby help reduce the probability of their re-occurrence. The chapter commences with a discussion about nursing as a profession with high demands for continuous learning at work and professional development, and highlights the potential contribution of learning from errors. The main part of the chapter summarises and integrates findings on typical errors in hospital and elder care nursing, as well as available evidence on a model of nurses' engagement in error-related learning activities. We also discuss findings on how nurses' learning contributes to their professional development by building (potentially) shared knowledge. The chapter concludes with suggestions on how nurses' learning from errors may be supported on the individual, interpersonal and organisational levels.

In their chapter, *Sustaining and Transforming the Practice of Communities: Developing Professionals' Working Practices*, Christy Noble and Stephen Billett focus on two other health-related professions. They discuss how practice-based professional development experiences can be used to build occupational capacities and, concurrently, sustain and transform the practices of work communities. It focuses on how both individual and collective change can be brought about through interactions between professional practitioners within their work community and individuals with particular expertise from outside of the community. The central concern here is to understand how both individual capacities can be further developed and work practice changed to accommodate the transforming nature of occupational practice. The particular case selected to illustrate and elaborate these two kinds of changes (i.e. individuals' further development and transforming work practice) is that of pharmacists engaging with junior doctors to develop further their prescribing



skills, and how this engagement can also assist the continuity and development of the practice community and its ability to provide a more comprehensive and effective patient care.

Another occupation that is strong on practice-based professional development is that of airline pilots. This is the focus of Tim Mavin's chapter, entitled *Models for and Practice of Continuous Professional Development for Airline Pilots: What We Can Learn from One Regional Airline*. They propose that in the airline industry, professional development begins when a pilot is inducted onto a particular aircraft and continues throughout the pilot's career. Even though pilots who obtain a position in an airline already have considerable experience flying aircraft, inducting them to fly the particular aircraft that a company is operating is a costly and time-consuming endeavour for airlines around the world. Fundamentally, initial airline pilot training models entail two stages. The first is principally classroom-based knowledge instruction – either face-to-face or more likely computer-based training – aimed at developing a pilot's knowledge of the systems of the new aircraft they are assigned to fly. Successful transfer to stage two is via a knowledge exam – almost always multiple-choice. Stage two training is chiefly based in a high fidelity simulator, where training aims at developing technical proficiency of the particular aircraft type. On completion of these two stages, pilots undergo extensive training on real aircraft prior to being assessed competent to fly as a normal airline pilot. From here, pilots begin a lifelong programme of continuing professional development while employed with the airline.

Even though modern airlines have quite sophisticated systems and instrumentations, curriculum models used to induct new pilots have seen a little change. In contrast, continuing professional development programmes have undergone significant review and investigation: with previous programmes focusing on assessing technical proficiency of a pilot – ability to fly, for instance. However, it was identified that non-technical skills – such as communication and decision-making – were more prevalent in major airline accidents than previously thought. These discoveries – especially around the 1980s and late 1990s – led airlines to change the focus of their professional development programmes from mere assessment of technical proficiency to include greater awareness training for non-technical skills. This involves both classroom lectures and problem-based exercises in simulators. Nevertheless, it now appears that both classroom and simulator-training curriculum may have failed to update forms of training, and there is increasing critique concerning these modes of professional development.

In the final chapter in this part, in contrast to a consideration of organisational strategies and practices, Peter Cantillon considers the task of sustaining professional competence for individuals who largely work alone. He uses the experiences of medical practitioners in his chapter entitled *Learning at the Frontier: The Experiences of Single Handed General Practitioners*. It describes the processes and effectiveness of continuing professional development (CPD) practices employed by isolated medical practitioners. The benefits and drawbacks of current approaches are highlighted. The chapter also explores newer models of professional learning from within and outside of the health professions, which can be used to support the

CPD activities of doctors working in isolation. The chapter explores what is meant by “isolation” in the context of medical practice. The prototypical example of the isolated doctor is the geographically remote general practitioner. However, many other doctors also work and learn in relative social isolation, e.g. specialists in exclusive private practice and medical locums. It is also arguable that the context of key elements of doctors’ practice, i.e. patient consultations, deliberations about diagnosis and management also take place “behind closed doors”. Thus, all doctors are to some extent isolated and autonomous in both their clinical practice and contextual learning.

The profession of medicine is founded on a principle of professional autonomy underpinned by self-regulation. New medical graduates are prepared for individual rather than collective competence and enter a world of work that promotes individual expertise and learning rather than more distributed ways of knowing and acting. In the past individual competence was assured by self-regulation underpinned by self-assessment. However, concerns about medicine’s propensity to place self-interest above self-regulation and growing awareness of the limits of self-assessment have led to the imposition of external validation (revalidation) and practice incentive schemes throughout the developed world. These changes have had a profound effect on how and what doctors learn. Hence, this chapter describes the continuing learning practices of geographically isolated practitioners based on research from Canada, Australia and the USA. The chapter will also examine how learning occurs amongst socially isolated practitioners particularly in the context of changes in clinical behaviour. The chapter concludes with examples of how relative geographical and social isolation can be mitigated through new CPD approaches based on examples drawn from within and outside of the health professions.

### **Part III: Towards a National Model of Continuing Education and Training: An Australian Case Study**

This part comprises chapters that collectively outline the processes and findings of a national study into the provision of continuing education and training and how a national system of continuing education and training might be organised, ordered and enacted, and participated in by learners.

In the first chapter, *Continuing Education and Training: Needs, Models and Approaches*, Sarojni Choy, Stephen Billett and Darryl Dymock set out the context, framing, procedures and broad outcomes of a 3-year study of continuing education and training undertaken in Australia. In essence, the study has sought to identify what might comprise a national approach to continuing education and training that can assist employability across working life and address the needs of industry, workplaces and communities in supporting and sustaining that employability. In particular, the challenge was to identify a set of models through which continuing

education and training could be advanced to support workers of all kinds sustain their employability through ongoing learning in and for their working lives.

The study was enacted through surveys and interviews with workers, their managers and also providers of continuing education and training, in both metropolitan and regional locations across four Australian states. Having identified a set of findings provided by this interview data, a series of focus groups were held in both metropolitan and regional locations with similar groups of informants to verify and extend what had been identified. One of the key findings was a strong preference for learning through work and as part of work activities for most categories of workers interviewed. Much of this learning was directed by individuals through their everyday work activities, but often supported by other workers. Models of training or educational interventions were also identified. Some of these were necessarily required to occur within the workplace so that what was being provided as continuing education and training experiences were richly contextualised. Yet, in addition, when individuals needed to reskill or change occupations, their workplaces were not always able to offer such experiences for the kinds of certification that were required. Consequently, certain kinds of continuing education and training would have to be based within educational institutions.

In contrast to a strongly workplace-based focus which stood as a preference for many workers, employers and managers often preferred training programmes as a way to bring about particular changes and secure distinct kinds of learning. These kinds of provisions were held to offer a greater certainty than skill development in the workplace because they could be intentional and directed towards pre-specified forms of learning that contributes to work-related outcomes. In this way, this chapter sets out the context, processes and outcomes of that project which are then elaborated in the subsequent three chapters.

In their chapter, *Workers' Perspectives and Preferences for Learning Across Working Life*, Raymond Smith and Ann Kelly focus on the perspectives of experienced workers and how their continuing learning processes might be best supported across lengthening working lives. They hold that workers, who have been engaged in occupational practice beyond initial entry preparations and requirements, have substantial views about the kinds of work-learning experiences that will support and sustain their competence and continued employability. These views are based on their years of generating and responding to the changes that characterise their work and working contexts and represent valuable sources of insight and expertise that can inform understandings and provisions of the continuing education and training needs of contemporary workplaces. Further, these views are evidence of workers' understandings and acceptance of the nature of work as increasingly dependent on learning, not as something separate from or prior to their practice, but as an inseparable aspect of it. In short, workers are highly informed and capable contributors to the learning needs that underpin their work and the viability of their employer organisations. These conclusions and some of the implications for the provision of continuing education and training that arise from them are advanced here.

The chapter draws on research conducted with workers from four Australian industry sectors: mining, aged care, financial services and hospitality services.

Through interviews and surveys, these workers described and explained their work-related learning experiences in ways that identified, evaluated and advocated how best that learning should proceed. Significant within these accounts were recommendations aimed at securing access to expertise and learning support that aligned with the social and performative nature of work as shared collective practice. These practice goals can be realistically pursued when worker engagement is high, learning support is direct and well-resourced and constitutes a recognisable developmental trajectory that leads to accreditation. In more general terms, the workers who participated in the research reported here value, prefer and advocate work-learning experiences that bring together task authenticity, expertise and shared practice. They were very clear about the importance of learning in and for work and equally clear about how best they learned. Their work-learning experience and preferences suggest that effective continuing education and training goes beyond a focus on classroom training for skills development to meet immediate work needs. Rather, effective continuing education and training should take a more expansive, local and learner centred focus to support learner engagement in personal and organisational development requirements that meet and direct change as a constituting element of work practice.

Whereas the previous chapter focused on workers concerns and perspectives, in their chapter, Mark Tyler, Darryl Dymock and Amanda Henderson focus on *The Critical Role of Workplace Managers in Continuing Education and Training*. They propose that as workplaces increasingly become sites of ongoing learning, the effectiveness of the learning and training undertaken by workers already in employment becomes a significant issue. While learner engagement is a key factor, the nature and extent of the involvement of managers in workers' continuing education are also important considerations, especially in large and medium enterprises. Based on interviews and a short survey, this chapter presents and discusses the perceptions of 60 managers in five Australian industries about the sorts of changes that are driving ongoing learning and the consequential impact on continuing education and training practices. The findings show that managers are tending to be more proactive in promoting, organising and facilitating support for learning, and monitoring the outcomes of their support and of employees' learning. Nevertheless, the increasing "formality" also often lead to managers seeing "learning" in narrow terms, particularly in the form of training courses, which are regarded as providing a more structured approach as well as greater certainty of achieving the desired outcomes. On the other hand, the study found examples of organisations using a variety of strategies to achieve their ongoing learning goals, consistent with the literature that advocates greater use of the workplace as a site for learning. The authors conclude that managers need to consider a broader range of strategies if workforce development is to encompass as much as possible the full range of learning opportunities available.

Finally, in the chapter in this part, entitled *Towards a National Continuing Education and Training System*, Sarojni Choy and Raymond Smith advance considerations about what might constitute a national system of continuing education and training. The discussion here draws upon findings from the interviews and focus

groups with workers, their managers and also providers of continuing education and training. In addition, the views of senior figures in large national institutions and agencies with responsibilities for continued education and training are taken into account. A range of models for the provision of continuing education and training are advanced, as well as sets of practices which might promote that kind of ongoing learning. In addition, considerations of assessment, recognition and certification of knowledge required to sustain employability are advanced, as are issues associated with the administration and financing of such a national system.

Then, building upon ideas from the contributions to this volume, a broader set of premises for ongoing learning across working lives are advanced in terms of how these arrangements might flow through to a wider range of occupations and circumstances of work than those within the national study from Australia.

## **Part IV: Learning Across Working Life**

The final chapter – *Conceptions, Purposes and Processes of Ongoing Learning Across Working Life* – discusses the growing consensus across governments and supra-national agencies, spokespersons for industry, occupations, employees, workplaces, education systems and communities and by workers themselves that the ongoing development of occupational capacities is now required by all kinds of workers and for all occupations across their working lives. This consensus arises from the recognition that not only is the knowledge required for effective occupational practice subject to constant change, but also the nature and form of that change is more than simply keeping up with the latest developments. Instead, many occupations are being transformed, which affects what constitutes occupational competence and extends to how and what individuals (i.e. consumers, clients, patients) now expect of those occupations. Moreover, the nature and kinds of paid employment, how it is undertaken and by whom are also constantly changing. Therefore, there is a need to view the ongoing development of workers' skills across working lives as being a major education project. However, to do so requires having a more elaborate set of understandings about what constitutes this project. Hence, in this chapter, consideration is, first, given to the ways in which this ongoing learning is conceptualised. Second, a set of purposes associated with this project are identified and exemplified. Third, something of a range of means by which this project is enacted is also set down. Overall, it is proposed that more than being seen as a process of topping or freshening up, there is a significant and central educational project to be addressed, and not only through educational systems and institutions but also in the places where occupations are enacted (i.e. workplaces, work practices and communities). Given that ongoing learning across working life constitutes an entire educational project, there needs to be clarity about what conceptions underpin it, the kind of purposes to which it is directed and the kind of processes used to realise these purposes. In this way, this closing chapter sets out something

of what comprises the educational project associated with ongoing learning across working life.

Mt Gravatt, QLD, Australia  
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Stephen Billett  
Darryl Dymock  
Sarojini Choy

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# Authors

**Cheryl Amundsen** is Professor in the Faculty of Education and Director of the Institute for the Study of Teaching and Learning in the Disciplines at Simon Fraser University, Burnaby, British Columbia, Canada.

**Gunilla Avby** is Lecturer at the Institution of Behavioural Sciences and Learning, Linköping University, Sweden, and the Jönköping Academy for Improvement of Health and Welfare, Jönköping University, Sweden.

**Johannes Bauer** is Privatdozent of Educational Research in the School of Education, Technical University of Munich, Munich, Germany.

**Stephen Billett** is Professor of Adult and Vocational Education in the School of Education and Professional Studies, Griffith University, Brisbane, Queensland, Australia.

**Annique Boelryk** is an educational developer at Georgian College, Barrie, Ontario, Canada.

**Peter Cantillon** is Professor of Primary Care in the School of Medicine, National University of Ireland Galway, Galway, Ireland.

**Sarojini Choy** is Associate Professor in Professional, Vocational and Continuing Education, School of Education and Professional Studies at Griffith University, Australia.

**Tim Dornan** is Professor of Medical and Interprofessional Education, Queen's University, Belfast, UK, and Emeritus Professor, Maastricht University, The Netherlands.

**Darryl Dymock** is an adjunct researcher and lecturer at Griffith University, Brisbane, Australia, and member of the Griffith Institute for Educational Research.

**Walter Eppich** is Associate Professor of Pediatrics and Medical Education at Northwestern University Feinberg School of Medicine and a Pediatric Emergency Physician at Ann & Robert H. Lurie Children’s Hospital of Chicago in the United States.

**Amanda Henderson** is a Nursing Director in Metro South Health, Queensland; and Clinical Title of Professor, Griffith Health, Griffith University, Brisbane, Queensland, Australia.

**Steven Hodge** is Lecturer in Adult and Vocational Education in the School of Education and Professional Studies, Griffith University, Brisbane, Australia.

**Ann Kelly** is a consultant in adult literacy and vocational education, Brisbane, Australia.

**Veronika Leicher** is a research assistant in Educational Science, Institute of Educational Science, University of Regensburg, Germany.

**Timothy J. Mavin** is Associate Professor at the Griffith Institute for Education Research, Brisbane, Queensland, Australia.

**Regina H. Mulder** is Full Professor Educational Science/Pedagogy on “Vocational Education and Training and Learning in Organisations”, Institute of Educational Science, University of Regensburg, Germany.

**Christy Noble** is a Principal Medical Education Officer in the Medical Education Unit, Gold Coast Health, and an Adjunct Senior Lecturer in the School of Medicine, Griffith University, Gold Coast, Queensland, Australia.

**Rob F. Poell** is Professor of Human Resource Development in the Department of Human Resource Studies, Tilburg University, The Netherlands.

**Jan-Joost Rethans** is Professor of Human Simulation at Faculty of Health Medicine and Life Sciences, School of Health Professions Education (SHE) and Director of Medical Education Programmes of Faculty of Health Medicine and Life Sciences, both at Maastricht University, The Netherlands.

**Raymond Smith** is a lecturer and researcher in adults’ professional, vocational and continuing education in the School of Education and Professional Studies at Griffith University, Australia.

**Pim W. Teunissen** is Associate Professor of Medical Education at Maastricht University, Faculty of Health Medicine and Life Sciences, School of Health Professions Education (SHE) and an obstetrician at the Department of Obstetrics

and Gynecology at the VU University Medical Center, Amsterdam, both in The Netherlands.

**Mark Tyler** is Senior Lecturer in Adult and Vocational Education in the School of Education and Professional Studies, Mt Gravatt Campus of Griffith University, Australia.

**Ferd J. Van Der Krogt** is Emeritus Associate Professor of Vocational Pedagogy in the Department of Education, Radboud University, Nijmegen, The Netherland.

**Charlotte Wegener** is Assistant Professor in Welfare and Educational Innovation at Department of Communication, Aalborg University, Aalborg, Denmark.