RESEARCH REPORT

Refining models and approaches in continuing education and training

*Stephen Billett, Sarojni Choy,
Darryl Dymock, Ray Smith,
Ann Kelly, Mark Tyler,
Amanda Henderson, Jason Lewis
and Fred Beven*
GRIFFITH UNIVERSITY

NCVER

Australian Government

Department of Industry

Refining models and approaches in continuing education and training

Stephen Billett
Sarojni Choy
Darryl Dymock
Ray Smith
Ann Kelly
Mark Tyler
Amanda Henderson
Jason Lewis
Fred Beven

Griffith University

NATIONAL VOCATIONAL EDUCATION
AND TRAINING RESEARCH PROGRAM

RESEARCH REPORT

Publisher's note

To find other material of interest, search VOCEDplus (the UNESCO/NCVER international database <http://www.voced.edu.au>) using the following keywords: *continuing education; education and training needs; employability; employees; industry; managers; relevance of education and training; teaching and learning; training; workforce development.*

About the research

Refining models and approaches in continuing education and training

Stephen Billett, Sarojni Choy, Darryl Dymock, Ray Smith, Ann Kelly, Mark Tyler, Amanda Henderson, Jason Lewis and Fred Beven, Griffith University

This is the second report from a three-year program of research exploring how best the tertiary education and training system might be structured to maintain the employability of Australian workers across their working lives. Following on from the first report, this phase of the research investigates training preferences and practices in four industries: mining; services and hospitality; financial services; and health and community services (mainly aged care).

This second phase of research confirmed the findings of the first phase, which suggested that continuing education and training experiences should: be situated in workplace experiences; entail direct support from experienced others; provide high-quality individualised support for learning; and motivate and engage the learners.

Key messages

- Workers and managers differed in their views on the purposes of training. Workers emphasised personal reasons for engaging in continuing education and training, such as securing ongoing employability, advancing in their workplaces and responding to workplace innovations. Managers emphasised organisation-specific factors and meeting enterprise goals as reasons for training.

- When the aim of continuing education and training is for workers to remain current and employable, advance their careers or bring about workplace change/innovation, then workplace and practice-based models are the most valued and frequently used by workers. They are also preferred by managers.

- When the purpose of continuing education and training is to secure employment or change occupations/careers, then educational institution-based models are more favoured.

- Different continuing education and training purposes require distinct educational experiences and processes — neither fully institution-based nor workplace-based provision will address all purposes.

- Additional considerations that need to be taken into account when devising an effective continuing education and training system include the specific requirements of different industry sectors and geographic regions and the need for credible accreditation and certification.

Rod Camm
Managing Director, NCVER

Acknowledgments

Contents

Tables

Executive summary

This is the second report of a three-year project that aims to identify how tertiary education and training can best sustain Australian workers' employability and career development across lengthening working lives. The focus of the project is on continuing education and training, which includes vocational education and training (VET) programs offered through registered training organisations (RTOs) and other educational institutions, structured workplace learning experiences, and individuals' learning through their work, independently or with others (for example, co-workers, supervisors, experts).

The first report from this project, *Change, work and learning: aligning continuing education and training* (Billett et al. 2012b), assessed the usefulness of nine models and their associated strategies for continuing tertiary education and training (in Billett et al. 2012a). It was found that three of the nine models aligned with the needs and practices in the two industry sectors examined (that is, transport and logistics, and health and community services). These models are: practice-based experiences with direct guidance; opportunity-based experiences; practice-based experiences with educational interventions.

This report addresses the project's second phase, which aimed to verify and extend the earlier findings by engaging with a larger and wider informant base. Data were gathered through on-site semi-structured interviews and a short survey of 86 workers and 34 managers from four industries: mining, services/hospitality, financial services, and health and community services. The worksites were in metropolitan and regional locations in Western Australia, Victoria, New South Wales and Queensland.

The findings, discussed below, explore the reasons why workers and managers engage with continuing education and training and investigate the preferred models for ongoing employability and advancement.

Purposes and provision of continuing education and training

Continuing education and training can serve a range of distinct purposes. These include helping individuals to:

- secure employment
- remain current and employable
- advance careers
- change occupations/careers
- bring about workplace change/innovation
- realise national economic and societal goals.

Interviews highlighted differences between workers and managers in their purpose and preferences for engaging with continuing education and training.

Workers' purposes and preferences

Workers emphasised securing ongoing employability, advancement in their workplaces and responding to workplace innovations as their main reasons for engaging in continuing education and training. These aims focused on fulfilling personal work aspirations and addressing immediate work requirements. Workers report preferring their learning experiences (for example, guidance from other workers, supervisors and external trainers, work activities and interactions) to be based in the workplace and involve the support of experienced others. Workers consistently reported that effective ongoing learning was achieved through a combination of: engagement in work tasks they were learning about; guidance by more knowledgeable and locally informed partners; and training interventions related to their immediate work and future work life plans. These partners were reported as being supervisors, more experienced co-workers, or trainers/experts from outside their workplaces. To be effective, such partners had to understand the particular workplace's requirements for work performance.

Workers also reported that ongoing learning progressed differently when they worked alone, with another worker, or as part of a group. The two most frequently cited forms of learning support (that is, working alone and with another worker) are based on individual action and so workers' agency and intentions for learning are key elements for successful learning. Group learning activities, whether on or off site, are reported to be effective when: the instructional quality is high; learning fulfils immediate needs; and opportunities to practise what is being learnt are immediate.

However, when workers' purposes for learning involved changing occupations and careers or getting a different job, the structured courses, assessment and certification available through the formal education and training system were preferred to achieve these goals.

Managers' purposes and preferences

Managers emphasised workplace-specific factors as driving their preference for and approaches to continuing education and training, emphasising in particular the effectiveness of training programs in meeting enterprise goals. The means of securing those purposes were often distinct and their view of what comprised effective learning experiences was narrower than workers on occasions; that is, the managers' focus was on training programs and they often relied entirely on these programs to achieve their desired outcomes. However, they agreed with workers in recognising the need for learning experiences to be focused on workplace issues and goals. The workplaces of a number of the managers featured trainers from registered training organisations who actually came to the workplace and became familiar with the workplace's operational and skill development needs and staff.

These findings suggest that the different purposes for continuing education and training may require specific experiences and processes. Neither a wholly workplace nor institution-based provision of continuing education and training can address all of the requirements of workers and employers. Various combinations of workplace and off-site training appear to offer the most efficacious forms of continuing education and training.

Preliminary models for a national continuing education and training provision

This phase of the research identified four models with the potential to support a system of continuing education and training that promotes workers' ongoing employability and advancement:

- *Practice-based experiences with direct guidance*: workers claimed that 'hands-on' practice-based learning experiences with direct one-on-one guidance and instruction from experts offered the most effective way to develop their competence and confidence in their work.

- *Practice-based experiences with 'educational' interventions*: these interventions refer to both 'in-house' trainers and external trainers — from registered training organisations — offering accredited qualifications. This model provides workers with access to expertise to assist their work-related learning, with follow-up support making these interventions effective.

- *Wholly practice-based experiences*: these were highly valued, particularly when opportunities to apply and refine what had been learnt in either on- or off-site work activities were included. Being able to work and learn further by applying skills to new and ongoing tasks was consistently valued.

- *Wholly educational institution-based experiences*: these are essential for the learning and certification that cannot be realised through individuals' workplace-based experiences; they need to be accessible to working Australians.

Within these models, workers' learning was found to be best supported through:

- *Taught and guided processes in workplaces*: these are premised on the guidance and instruction being expert-directed, but hands-on, and preferably in workplaces.

- *Facilitated/expert-guided group processes*: small groups that support information-sharing and working together are preferred.

- *Individuals working alone*: individuals need to be supported when working and learning alone through access to expertise and necessary information when clarification is needed.

Consequently, an effective national model of continuing education and training provision needs to comprise both work-based and educational learning experiences, a conclusion that accords with findings from earlier studies. The findings reported here, however, also identify additional features that characterise this model of continuing education and training and which are applicable across industry sectors, locations and workers. Among these features are:

- the critical role of those regarded as occupational experts, from within and external to the workplace

- the increasing acceptance of the need for ongoing learning, both for occupational compliance and ongoing competence

- manager and worker ambivalence about the *necessity* of certification, but general acceptance of it as part of national provision, albeit to meet government and industry requirements or for upskilling

- a pattern of workers being proactive learners, motivated by certification requirements and/or personal goals for employability and advancement

- managers taking on significant training and mentoring roles, sometimes by default.

The interviews also identified differences across industries relating to how continuing education and training is utilised and valued and its accessibility across metropolitan and rural/regional locations.

Implications for tertiary education and training provision

The trends identified here have implications for the way by which continuing education and training is provided as part of a national tertiary education and training system. First and foremost, the findings point to workplaces as sites that: sustain employability; secure some forms of advancement in the workplace; and respond to the ongoing changes that constitute contemporary working life. More specifically, there is a need for arrangements to encourage and support:

- the use of expertise to inform workers' practice-based learning experiences

- collaborative arrangements between registered training organisations and other educational institutions and workplaces to better contextualise learning experiences and outcomes

- a balance between the need for certification and genuinely meeting industry, workplace and individual skill needs

- a better understanding of workers' motivations to engage in continuing education and training, and giving ongoing support

- training and support for managers acting as trainers and mentors

- recognition of differing industry requirements for continuing education and training and therefore their differing approaches

- innovative approaches to meeting non-metropolitan continuing education and training needs.

However, there is still a crucial role for educational programs and experiences that sit outside workplaces and which are readily accessible to working Australians.

These findings stand alone, but also will both inform and be evaluated in the final phase of the research through consultations with a range of stakeholders responsible for practice and policy.

Phase 2: Refining continuing education and training models and approaches

This report details the findings from Phase 2 of a three-year project which was concerned with gaining further insights about, and refinements to, the models and approaches to continuing education and training in the Australian tertiary education and training system identified in the first phase (see Billett et al. 2012a, 2012b). This included examining how those models and approaches 'fit' with a wider range of work and workers and managers, and how they were necessarily altered and refined to account for the particular kinds of work, development needs and learning experiences examined.

The first report, *Change, work and learning: aligning continuing education and training*, presented the Phase 1 findings and focused primarily on assessing the utility of a set of nine models and the associated strategies for continuing tertiary education and training that were identified early on in this phase (see Billett et al. 2012a, 2012b). That report was informed by interviews with managers and workers in two industries: transport and logistics, and health and community services. The Phase 1 findings indicated that, of the nine models identified, four in particular were both common and appropriate in the two industry sectors examined. They were:

- practice-based experiences with direct guidance

- opportunity-based experiences

- practice-based experiences with educational interventions

- wholly educational institution-based experiences.

Further, a number of requirements for supporting workers' practice-based learning experiences were advanced and included the provision of workplace experiences that comprise developmental pathways, along with individualised and direct support from experienced others to promote learner engagement. From the findings in Phase 1, an initial set of six essential elements for effective models of continuing education and training were proposed. The six elements were:

- the specific organisation and provision of learning experiences

- support for developing occupational capacities

- active and effortful participation by learners

- development of learner agency

- nationally recognised occupational certification

- fulfilment of particular workplace requirements (see Billett et al. 2012a).

Phase 2 advanced these initial findings and proposals, guided by three research questions:

- Research question 1: Do industry, employer, employee and related organisations' experiences with and expectations of tertiary education and training for the purpose of sustaining occupational competence and employability align with the proposed models and approaches?

- Research question 2: How do these continuing education and training models and practices most effectively align with changing workplace contexts to maintain occupational competence and employability, and for what kinds of work and workers?

- Research question 3: To what extent can workers be prepared to be active in engaging in productive learning across their working lives? What kinds of support are considered necessary for such preparation, taking into account factors such as abilities and educational backgrounds?

Method

Across 2012, semi-structured interviews of between 30 and 40 minutes were conducted with 34 managers and 86 workers in four industries: mining; services; financial services; and health and community services (mainly aged care), at their worksites. The workers and managers also completed a short survey. The interview schedules for workers and managers comprised items in common relating to previous learning and training, recent and future job and industry changes, the ways by which training is organised, support and assistance for learning and training, assessment and certification, and the significance of training. Managers were also asked questions about the roles of external training providers and industry and government influences (see appendices A and B). In addition, workers and managers in non-metropolitan locations were also asked to identify issues that differentiated their access to and the provisions of continuing education and training from those in metropolitan centres. The interview schedule was revised to extend information collected during Phase 1, with additional items about assessment and certification being included.

Most interviews were conducted one on one, but occasionally workplace requirements necessitated the use of small groups. With the agreement of participants, the interviews were audio-recorded and transcribed, after which the transcripts were de-identified, including applying pseudonyms to informants. The research team analysed the transcripts, individually and then collectively, to identify and categorise the factors that assisted and inhibited workers' continuing education and training, including their preferences for how such learning should be organised and supported. These findings are presented in the sections below, followed by a brief response to the research questions. The final section summarises a number of the issues and factors that are directly pertinent to the project and which will inform consultations with stakeholders in Phase 3 of the project.

The informants

Workers

Of the 86 workers interviewed, over half were in rural or regional locations. The largest percentage of workers interviewed (44%) were in the mining industry, 26% were in aged care, with the remainder divided between financial services (14%) and services — retail/tourism/hospitality (16%). Their locations, gender and age groups are presented in table 1. Just over 60% were women.

Table 1   Workers' industries, regions, gender and age groups

		Sector				Total
		H&CS (Aged care)	Mining	Financial services	Services/ hospitality	
Region	Brisbane			9		9 (10.5%)
	Qld regional		7			7 (8%)
	Perth	18	9			27 (31%)
	WA regional	4	22			26 (30%)
	Melbourne			3		3 (3.5%)
	Vic. regional				6	6 (7%)
	NSW regional				8	8 (9%)
	Total	22 (26%)	38 (44%)	12 (14%)	14 (16%)	86 (100%)
Gender	Male	5	24		3	32 (37%)
	Female	17	14	12	11	54 (63%)
Age	15–19		3		1	4 (5%)
	20–29	1	13	3	2	19 (22%)
	30–39	5	12	5	5	27 (31%)
	40–49	8	5	1		14 (16%)
	50–59	7	4	2	6	19 (22%)
	60–69	1	1	1		3 (3%)

Note: N = 86; H&CS = health and community services.

The most common age grouping was 30—39 years (31%); of the remainder, 22% were aged between 20 and 29 years, 22% between 50 and 59 years, and 16% between 40 and 49 years. There were four workers aged 15—19 years and three in the 60—69 years age bracket. All of the workers interviewed had prior work experience. Of the 76 who responded to the question about their length of employment in the current job, 50 (66%) had been employed in their current jobs between one and five years and 19 (22%) between six and ten years. The remainder had been employed for longer, including three for between 16 and 20 years. In sum, the informants represented both genders, the range of working age groups, with diverse periods of employment, and metropolitan and non-metropolitan locations. Of the 79 who provided information about their qualifications, just over half had a vocational certificate or diploma, 22% had a university degree, and 28% had obtained no formal qualifications since leaving school.

Managers

As presented in table 2, equal numbers of male and female managers were interviewed. Ten were from each of the aged care and financial services industries, with the balance (14) evenly divided between the mining and services/hospitality industries. Perhaps not unexpectedly, manager informants tended to be older than the workers, with just over 40% (14) aged 50—59 years, with those aged 30—39 years and 40—49 years each constituting around a quarter. There were also two managers in each of the 20—29 and 60—69 years categories. One manager was employed part-time; the remainder were full-time. Twenty-three managers had been in their current jobs between one and five years, with another five (16%) having been there six to ten years. Four of the 34 managers worked in small enterprises with fewer than 20 workers, and approximately one-third (12) reported that the number of employees in their workplace ranged from 21 to 99. Seven managers worked in organisations with 100—199 employees, and eleven were in organisations with over 200 employees.

Table 2   Managers' industries, regions, gender and age groups

		Sector				Total
		H&CS (Aged care)	Mining	Financial services	Services/ hospitality	
Region	Brisbane			4		4 (12%)
	Qld regional		1			1 (3%)
	Perth	10	2			12 (35%)
	WA regional		4			4 (12%)
	Melbourne			5		5 (15%)
	NSW regional			1	7	8 (23%)
	Total	10 (29%)	7 (21%)	10 (29%)	7 (21%)	34 (100%)
Gender	Male	1	5	6	5	17 (50%)
	Female	9	2	4	2	17 (50%)
Age	20–29			1	1	2 (6%)
	30–39	1	3	4		8 (24%)
	40–49	4	1	1	2	8 (24%)
	50–59	4	3	3	4	14 (41%)
	60–69	1		1		2 (6%)

Note: N = 34.

Factors assisting workers' learning

A high degree of commonality was evident in the factors reported as assisting workers' ongoing learning. As found in Phase 1 data from 2011, these workers commonly reported that the ongoing learning required for their employability, which allowed them to respond to new work challenges and to seek advancement in their occupations and workplaces, was accomplished through the combination of engagement in work activities and support in those activities by more informed and skilled partners. These partners could be supervisors, more experienced or highly skilled co-workers or, alternatively, experts/trainers from outside the workplace. When external to the workplace, experts/trainers needed to understand the particular requirements of the work being performed. Moreover, one-on-one engagement with external trainers was usually preferred and considered to be more effective than group training sessions, such as training programs. Learning experiences were most valued when they were immediately applicable to work-related tasks and issues, and when there was helpful guidance, as well as opportunities to practise and hone what had most recently been learnt.

While these findings were relatively consistent across informants, individual variations in what assists learning in and for work arise from the type of work performed, the conditions under which the work is undertaken, the resources and support available, workers' aspirations and expectations, and how they had learned in their previous and current work. For example, learning through work by mining workers is distinct from aged care workers and community services club workers who, again, differ markedly from those who are theme park animal handlers and finance administration workers. For instance, welding in confined spaces on remote mining sites can demand qualitatively different support from that required by office staff learning to operate new accounts software at the same site. In the sections below, both workers' and managers' perspectives of what assists learning are presented separately to differentiate personal and organisational emphases on how continuing learning is assisted in and through work. The factors that are common across all categories of work and worker groups are identified, as are those specific to particular sectors, locations and individuals.

Workers' perspectives on what shapes and supports their ongoing learning

Overall, workers from the four distinct industry sectors identified high levels of consistency between their actual and preferred learning experiences. Furthermore, while the workers were largely not highly motivated learners, they were generally interested in participating in and accepting of the sorts of training that sustained their employability. Predominantly, they reported effective learning experiences as being when working alone, with another worker, and as part of a group or team — all at and through work. Generally, their learning was reported as ongoing through their work. This was because the kinds of tasks they were undertaking, the tools and systems they engaged with and the conditions under which these tasks were performed were constantly changing, as technology, regulation and client demands transformed their work. Hence, working and learning co-occurred. Anne (finance) commented:

> you learn something new every day; it's just on-the-job learning and with the pace of technology these days, it's just continuous learning.

For many of these informants, work entails continuous engagement in new tasks that require further and greater occupational competence. Examples of new tasks requiring new learning included a specialised form of welding in the mining industry, washing pool filters in tourism (services), feeding a resident through the person's navel (aged care), and implementing a new software system (finance). Learning was reported as being integral to work, is enacted in and through work and is the most reported source of their learning. Informants' use of phrases and terms such as 'on the job', 'in house', 'on site', 'at work', 'in the office', 'from colleagues', 'peer support', 'watching others', 'getting involved', 'getting into it', and 'day-to-day tasks and activities' highlight this claim.

To test and elaborate these claims, informants were invited to indicate the three most preferred modes of learning support from the list of models and strategies for maintaining workplace competence identified in Phase 1 of the project (see Billett et al. 2012a). Their current means of learning and preferred choices are presented in table 3. The table indicates that the most preferred models of training and learning support were learning: from experienced co-workers; through small group meetings, which are less structured than training sessions; and through individual mentoring by a supervisor (that is, one-on-one guidance). The salience of workplaces as preferred sites for learning is confirmed, reinforcing the findings of Phase 1.

Table 3   Current modes and preferences for ways by which learning and training are provided and supported

Models of training and learning support	Current %	Rank	Prefer %	Rank
Small group meetings/discussion in workplace with manager, in-house trainer etc. (e.g. staff meetings, shed meetings)	78	1	43	1
Individual peer support from experienced worker/s (e.g. buddy system)	70	2	43	1
Individual mentoring by supervisor	67	3	42	3
Small group training in workplace with manager, in-house trainer (e.g. classroom teaching)	57	4	28	4
External trainer (e.g. RTO) in workplace	47	5	24	5
External trainer (e.g. RTO) off site	44	6	21	6

Note: N = 86.

When asked about the circumstances of learning through work, the workers identified three main approaches: with other workers; alone; and in a group trained by an experienced person. These are elaborated in the sections that follow.

Working and learning 'one on one'

Working and learning with another person — usually a more experienced co-worker — is consistently reported by these workers as being an effective form of learning support. Yet, whoever that other is, their knowledge of the particular work context and the levels of support they provide are key determinants for the reported quality of working and learning one on one. Five kinds of 'others' are identified in the data: co-workers, supervisors/managers, mentors, buddies, and occupational experts. The qualities expected of these 'others' comprise occupational knowledge, situational competence and the ability to understand and respond to learners' needs. As presented in table 4, when responding to how training is organised, 67% of informants reported experiencing individual mentoring, while approximately 70% reported instances of individual peer support from other workers, thereby quantifying what was expressed in interviews. Surprisingly, in response to an item about the frequency of such valued assistance, 40% of informants reported not experiencing such support (neither 'frequently', 'sometimes', nor 'rarely') from acknowledged experts, supervisors or trainers. Much of this assistance was reported as arising through engagement with co-workers, some of whom were referred to as 'workplace buddies'. However, this type of engagement relied on individual workers to initiate the arrangement to meet an immediate need, such as gaining knowledge to perform a task correctly and efficiently. This kind of assistance involves immediate and relevant interactions through: sharing information; accessing perspectives about effective performance; receiving constructive feedback (for example, praise and correction); and performing authentic work tasks. By authentic work tasks we mean those characterised by particular situational requirements and timelines. That is, the work and learning co-occurs in workplace-specific ways. Eve (aged care) stated, 'when somebody actually sits with us and says, "We're now doing this", and actually gives us a reason, I'm all for that rather than being told it must be done'. Importantly, this form of learning support arises through everyday work activities and is dependent upon whether co-workers are willing to provide that kind of support.

Table 4   Workers' indications of how training is currently provided (by industry sector)

Ways training is provided in current job to keep up to date	Aged care	Mining	Finance	Service/ hospitality	Total
	(n = 22)	(n = 38)	(n = 12)	(n = 14)	N (%)
Individual mentoring by supervisor	14	28	9	7	58 (67)
Individual peer support from experienced worker/s	16	27	10	7	60 (70)
Small group *meetings*/discussion in workplace with manager, in-house trainer	18	29	10	10	67 (78)
Small group *training* in workplace with manager, in-house trainer etc.	18	20	5	6	49 (57)
External trainer in workplace	15	13	5	7	40 (47)
External trainer off site	9	18	2	9	38 (44)
Training through supplier, manufacturer etc.	12	10	2	3	27 (31)
Online courses	6	15	9	7	37 (43)
Any other education or training, not arranged by employer	6	6	1	1	14 (18)

Individual instruction and guidance from more experienced people and follow-up access to them was commonly reported as assisting ongoing learning. Access to more experienced workers can be ongoing and address many aspects of work requirements. Karl (services) described this collaborative process of learning in the following way: 'myself and the marketing manager, we work in a team … because it's only the two of us we pick up a lot'. In this instance, working and learning together, as buddies, is enabled by work activities and shared tasks, which directly assists new learning (for example, setting

up workplace email systems and in-house printing and publishing). Their learning is assisted by the collaborative effort that comprises their working together. This direct guidance can extend to a broader form of mentoring, such as that provided to Fletcher (services) by his supervisor.

> Kevin is my supervisor and we discuss things regularly and Kevin has a wealth of information regarding the industry … he's also a life balance mentor as well. He makes sure that you're not doing excessive hours and killing yourself over it all.

Here, learning was assisted by senior staff, who provided expertise and pastoral care. Similarly, Greg (mining) enjoyed support from a company-sponsored external expert who was flown in one day per month to work exclusively alongside him in his training management role. Also, Holly (finance) valued the one-on-one personal training she was receiving from a more experienced colleague, although she could see the limitations of such a process: 'the person that's training me is very knowledgeable, but I guess it's in their head so that makes it difficult'. So, her learning was restricted by what could be shared through one-on-one interactions, without opportunities to further expand her knowledge.

In the reports of one-to-one working and learning relations found throughout the data, respondents were positive about the experience. Consistent across these informants and their circumstances is that working and learning with more experienced others can sustain employability and advance workers' learning. More than merely engagement with other workers, access to superior and more experienced co-workers' knowledge was reported as strongly supporting work-related learning. However, access to such expertise can be restricted by the availability of more informed others.

Working and learning 'on my own'

Working and learning alone was similarly reported as being an important means for workers' ongoing learning. However, this does not mean doing so in social isolation. It refers to getting on with the work tasks at hand and through opportunities to practise and in ways that require and foster self-reliance and self-accountability. There is, however, a difference between being enabled to work and learn alone in circumstances that effectively support learning and being left to get on with the required work without support for effective learning. Workers were asked to indicate (by ticking relevant boxes) and discuss the kinds of assistance they experienced in maintaining and updating their knowledge and skills for their current work. Their responses are presented in table 5. Noteworthy is that the two most selected forms of learning assistance are based on individual action. That is, learning alone or from other workers requires the intention to do so on the part of learners. A high proportion (93%) of workers reported that their learning progresses through what one described as 'picking it up as you go'; that is, by the requirements of daily work activities.

Table 5 Workers' indications on how learning is currently assisted (by industry sector)

Ways learning is assisted in current job to keep up-to-date	Aged care	Mining	Finance	Service/ hospitality	Total
	(n = 22)	(n = 38)	(n = 12)	(n = 14)	N (%)
Individually	20	34	12	13	79 (93)
Individually from other workers	18	36	12	11	77 (89)
Experienced person – individual guidance	8	17	12	8	45 (53)
Experienced person – part of group	14	26	9	3	52 (61)
External trainer – individual on site	16	15	1	5	37 (44)
External trainer trains – group on site	8	7	4	4	23 (27)
External trainer trains – group off site	12	9	2	6	29 (34)
Updated through a professional network, or through friends and family	8	17	7	6	38 (45)

The patterns of responses to the first four ways of learning in table 5 are similar across the four industry sectors and also reflect what workers reported as their preferences (see table 3). Thus, the interview data confirmed what the quantitative survey data suggest. That is, much of their learning occurs in the absence of direct support or guidance. Workers predominantly rely on personally accessing and utilising the available workplace resources to assist their learning. Indeed, throughout the data is evidence that workers highly value the learning that comes from 'just doing it myself'. What they come to learn and appraise as being worthwhile and valid knowledge has to be important for them. Brenda (mining) stated this point simply: 'I like to do it individually because to me it seems to sink in better'. However, the interviews revealed that this view is often premised on their having a foundation of previous instruction and or working with others who had been observed and questioned.

What helps build on this initial foundation of instruction or advice is having sufficient time for self-paced learning, for trial and error and for reflection and practice. This includes self-directed information-seeking processes that support individuals' learning. Workers variously reported such effortful processes as challenging, rewarding and motivating, confidence-building and generating interest and commitment. Karl (services) captured this sentiment: 'I just like to go in myself, just look at it and learn that way which is probably best for me'. His colleague David (services) added:

> Well the one good thing about it, when you do a trial and error thing like that, you don't just
> learn it goes here, that goes there, you know why it goes there because you had to work through
> the process to understand it.

So, working alone is welcomed as assisting workers' learning when initial instruction is followed by time to practise, which enables them to consolidate, test and reflect on the purpose and performance of their work. This seems most effective in circumstances that support slow, incremental increases in task complexity and associated responsibility. Anne (finance) commented, 'it would be good to take a step back and just reflect on what you actually have learnt — it just helps to reinforce'. Overall, miners in remote locations, similar to aged care and office workers in cities, claimed they generally managed their own learning, but recognised the support provided by their peers. For other credible learning and training, however, they preferred to rely on industry experts, whether from inside or outside their workplaces.

Working and learning 'together'

Working and learning as part of a group or team was also frequently reported as an effective form of continuing education and training. This interactive learning was enacted in two distinct categories of group: they were brought together to undertake specific task and competency training; and they work together in close proximity to each other or otherwise regularly engage with each other. As presented in table 4, 70% of informants reported learning from peers and experienced workers, 78% reported learning in small groups and 57% learning in classroom-style group training. Similarly, consistently across the interview data, a group of collaborative and supportive staff provided effective learning assistance for developing the competence and confidence required for work, and, particularly, for working with others. Having approachable colleagues opened the prospects for the sharing, interpreting and testing of new ideas, techniques and procedures, which built the understanding and capacity for acting effectively. Through such sharing, issues could be discussed and problems jointly solved. At its best, when workers help each other, different perspectives and ways of acting are made accessible and experience becomes visible and valued. Ivy (aged care), an administration worker, stated:

> my colleagues who are most knowledgeable about what I do, not outside people … and I most
> relish being with my experienced buddies who were doing my job, who were deeply familiar with

what I was doing, who could give me insights into my job. People from the outside, their advice was often … less relevant because they didn't have intimate details of my job … I learn individually from other workers; I'm doing that almost always, asking questions, observing this and discussing that, frequently, yes. And, likewise, an experienced person within the group. In-house, they know. They know the system. Outside people don't … outside people are essential for teaching us new stuff that we just don't know. Having said that, it's the people that I'm working with who I'm learning from more, much more.

Learning supported by others was also favoured by mining workers, such as Jack:

probably my most effective way of learning is actually just doing it with other people, watching, asking them questions and even just seeing them, observing them when they work and how they even talk to other people, how they look at things that I look at … It's easier to talk to someone … It's good to be able to ask stupid questions and not feel stupid.

However, not all the required learning for maintaining employability can be acquired within workplaces. Accessing outsiders and their expertise may be necessary for 'teaching us new stuff we just don't know', as Ivy said. This expertise might comprise external trainers from registered training organisations, supplier representatives or client representatives who conduct their training sessions either on or off site, although on site was most frequently reported as best assisting learning. Workers commented on such aspects as the benefit of:

- gaining practical knowledge on the job and theory through classes off site

- obtaining opportunities to network with people from other organisations in similar roles

- keeping up to date with compliance and legislation

- becoming aware of issues and practices outside their particular workplaces.

Sam, a miner, commented on his experience with a class led by an external trainer: 'We learned a hell of a lot and we were able to discuss a lot of things and get things clear that we've always wondered about'.

The worker informants consistently reported in interviews and through the survey that this kind of learning support appears to be most effective when:

- The trainer is competent in what they are teaching including having familiarity with how work is enacted in the particular workplace.

- The quality of instruction is high and pertinent to tasks they are undertaking.

- It can be secured immediately.

- The opportunity to practise is immediate.

Outsiders can offer specialised, best-practice and well-informed experiences, which develop specific capacities and consolidate learning for improved workplace performance. Outsiders can also include insiders such as company-based experts who provide initial instruction when something new is introduced. For example, trainers from the head office of aged care facilities deliver enterprise-specific training.

The worker informants also reported training in a group as assisting the process of ongoing work-related learning by building relationships and networking with co-workers. This development extends to participants in that:

- They become learning supporters, or trainers, as they return to their work.

- They assist others to establish benchmarks or agreed requirements.

- They share expectations about goals for work performance.

Hence, these collective learning experiences can generate opportunities for advancing learning and better collective action through shared understanding and practice requirements. The circumstances described as achieving these kinds of accomplishments are similar to those reported in Phase 1 of the project: when groups are small, conducted at and in work (that is, on site and hands on), company-funded, organised to enable any necessary preparations, short in duration (that is, no more than a few days), and conducted by acknowledged experts who are accessible after the training.

Summary

In sum, the ongoing development of workplace competence for continued employability and possible advancement was reported as being most effective when work and learning co-occur. Even where learning the highly complex tasks that characterise contemporary work performance, workers reported that, after the initial instruction, the subsequent practice required for adequate performance should be undertaken almost immediately in the work context. Being in work links working and learning: autonomously, with other experienced workers/trainers; and with others who comprise the groups and teams through which work is enacted.

As indicated in table 5 and in the interview excerpts, the data show that this form of continuing learning is assisted by constructive worker interaction, access to expertise as work tasks are confronted, and immediate application. Effective learner assistance is, therefore, in some ways worker and workplace-specific, arising as it does through addressing their need to respond to workplace changes. Worker-specific support appears to be most effective when on-site and hands-on training is conducted by experts and when supervisors work individually with workers. On the other hand, learning in teams enables other kinds of outcomes, such as understanding the goals and processes outside the immediate practice (seeing the 'big picture'), working autonomously and learning ways to secure informed assistance and guidance.

In other words, despite its prominence in Australian vocational education and training, across the workers interviewed, structured off-the-job training is generally not the preferred means for maintaining workplace competence, although such provision was reported as an important element of this learning when local experience and expertise are insufficient. However, structured accredited training plays particular and important roles for those wishing to learn to secure a new job or occupation, with instances in the interviews of workers intending to advance their careers through future study. Most of the discussion among workers and managers referred to structured accredited training in relation to meeting immediate workplace needs.

The diversity of work and learning experience reported by the worker informants was similar to that claimed by the managers interviewed in Phase 2. However, as shown in the next section, the managers' emphases and perceptions in relation to modes of continuing education and training were often different from those of their employees.

Managers' perspectives on what shapes and supports workers' ongoing learning

A number of the 34 management informants were actual training managers, whose primary work responsibilities comprised the provision and evaluation of staff training. The roles of others involved managing all aspects of their organisation's operation, including training. Office managers responsible for the conduct of specific departments and tasks and projects unique to these staff were also among these management informants. Some were members of management teams and staff groups, while others were individuals working alone, with sole responsibility for their workplace's performance. It follows that some informants exercised low levels of authority as supervisors and had limited control of resources and limited organisational responsibility. Others had high levels of authority and discretion in relation to how, when and where organisational resources were used and what training was conducted. However, despite differences in their roles, all expressed a high level of consensus over the kinds of learning support that were most effective, and these were training programs of different kinds. As presented in table 6, these managers' perspectives of what assisted learning were similar to those of workers. Yet, comparisons between them reveal some differences, with managers tending to see expertise as something brought into the workplace from outside.

Table 6   Managers' perspectives on what assists workers' learning (by industry sector)

Ways learning is assisted in current job to keep up to date	Aged care (n = 10)	Mining (n = 7)	Finance (n = 10)	Service/ hospitality (n = 7)	Total (n = 34) (%)
Employees learn individually	9	7	10	7	33 (97)
Employees learn individually from other workers	10	7	9	7	33 (97)
Experienced person assists individuals on site	8	5	7	5	25 (76)
Experienced person assists groups	10	6	7	7	30 (98)
External trainer (e.g. RTO) trains employees on site individually	10	7	7	6	30 (91)
External trainer trains employees (e.g. RTO) on site as part of a group	8	5	1	5	19 (58)
External trainer trains employees (e.g. RTO) off site as part of a group	8	7	4	6	25 (76)
Other	10	6	4	6	26 (79)

The analyses of the 34 managers' data revealed three key aspects of work practices to effectively support workers' learning. They are the organisational factors, the kinds of responsibilities and forms of engagement workers and managers enact, and the forces for change reshaping how work and learning are experienced. Each is briefly elaborated below.

Organisational factors

Across the four industry sectors, managers reported the levels of training required and undertaken by workers as increasing. They generally stated their roles as identifying individual and workplace training needs, for both current and future purposes, then securing the expertise and sufficient time to conduct the training as required by their organisation. Organisational factors included planning and scheduling and the allocation of necessary staff and resources. They also require sufficient flexibility to accommodate the kinds of work-related changes that inevitably occur without jeopardising training attendance and completion, and the accreditation necessary to meet regulatory and personal requirements. Many of these needs were being addressed through partnership arrangements with the particular registered training organisations who had the capacity to do so. Statements such as the following from managers in the aged care facilities exemplify such arrangements:

> Learning is assisted by good processes that identify where skills are located, how staff can be tracked and flagged … accurate performance appraisal. (Kathy)

> We have a training matrix and go through it constantly … and make sure staff attend. (Lyn)

> The incentives provided by the organisation to up skill to Cert IV or Enrolled Nurse … provide paid time to complete mandatory training … good communication systems help. (Madonna)

Similar sentiments were expressed by mining sector managers:

> Our organisation has built a training and assessment department that sits within the field because that way we can bring a level of professionalism to what is required. (Nathan)

> Everybody's got to go through the training. It's the system. We need it. (Peter)

Such comments are also common to the services sector:

> We train in every aspect of the club, he's done payroll, accounts, cellars, stores. He's now into gaming. He's done point of sale, rostering … It cements him into the club and gets him thinking about how to do things differently … We pay and keep it going that way. (Robert)

From managers' perspectives, work-related learning is best when registered training organisations are familiar with and supportive of the work requirements in particular workplaces. Significant here is the managers' view of assistance for learning as largely comprising training programs. This view is dominant across the managers' responses and applies to group and individual training and in-house or off-site provision. Learning is assisted, in this view, when structured training is targeted and efficiently enacted. Generally, the managers claimed, highly skills-based training is facilitated through small groups, instructed by experts in the field. In contrast, more conceptual, foundational knowledge-based training is facilitated by prolonged one-on-one interaction with experienced supervisors. Yet, when these are not available in the workplace, workers are left to their own devices, with some managers acknowledging that workers cope independently: 'Well I suppose, they do pick it up. Will hopefully, frequently' (Sam, services). In sum, managers appear to view continuing education and training in terms of assorted training programs and quality in terms of the effective enactment of those programs that are aligned closely with the workplace's goals.

Learner engagement and responsibilities

The manager informants reported that, although the demand for and provision of training was predominantly enterprise-driven, workers' learning was assisted by their having previous experience and qualifications, establishing positive relationships with those with whom they work and train and being sufficiently accepting of the need for further training. Managers were concerned to address the following seven situated workplace concerns in the training they organise:

- retaining staff

- identifying and supporting staff wishing to progress in their organisations

- developing the skills needed by staff for increasingly complex and collaborative work

- generating attitudes that adapt to change

- assisting and training other workers

- adhering to compliance and quality assurance regimes governing work

- assisting staff to identify and advance solutions to work-related problems and challenges.

It follows that these efforts are directed towards diverse kinds and levels of workplace outcomes. In sum, managers wanted better worker—learners and better training provisions to achieve workplace goals. The following quote illustrates this:

> If the supervisor and experienced worker are on the same wave length ... they are going to learn a
> lot more. Tania (aged care)

Uma (aged care) confirmed the importance of the managers' role in securing learning assistance for workers:

> It's the understanding of supervisor — e.g., as I have knowledge, I know what they need — if it is
> important I will fight for it.

Peter (mining) outlined some managers' perceptions of who needs what levels of assistance and therefore what is 'important':

> If a guy's prepared to stick around we'll invest in him ... If they're prepared to have a go,
> especially in a crew and they fit in ... We invest and you have to invest ... It's our responsibility to
> make sure that our people are trained properly.

Such comments are quite common in the manager data. From their perspectives, learning was prized when worker engagement in training was aligned with managers' efforts and complemented workplace goals. Importantly, managers saw themselves as responsible for securing these alignments and relationships.

Responding to drivers of change

Across all of the four industry sectors, managers identified a range of purposes of continuing education and training in response to drivers of change. They were:

▪ securing the benefits of technological enhancements (for example, new computing information systems, digital instrumentation and calibration, adapting tools and equipment)

▪ strengthening regulatory requirements (for example, increased compliance and licensing conditions)

▪ developing closer customer/client relationships (for example, partnerships and project collaborations).

Worker learning to respond to changes was reported as being assisted by encouraging stronger 'connectivity' amongst the people, equipment and expertise required to apply these innovations to new work practices and workplace problems. However, these drivers of change had distinct emphases across these sectors. Nathan (mining) stated succinctly, 'technology is forcing the change'. He explained that his organisation was removing relatively new manual technology, which was still perfectly functional, and was training its workforce in the digital and electronically based skill sets that the gas mining now required. He quickly qualified this position by adding:

> Well, compliance is a huge driver ... The Act says you must be able to prove the competence of
> your workforce, so obviously that forces the whole training agenda.

Other comments relating to the mining sector included:

> It's new equipment, more complex requirements in how we manage projects. (Vivienne)

> More and more clients are requiring anyone that is ... welding, to have current Australian minimum
> standards and ... renewable every six months. (William)

Similar points were made throughout the manager interviews. That is, work changes are driving training aimed at ensuring that workers meet current employment requirements. The risks of non-compliance, the costs of accidents, the inability to operate and maintain expensive and sophisticated equipment and the failure to address client needs — in the mining, aged care or finance sectors — all demand effective training responses. To exemplify the responses to these conditions, the managers offered long lists of training strategies they employed. Vivienne (mining) stated:

> mentoring, coaching, shadowing and all those other options ... peer support, yes ... small group meetings, definitely ... in-house training ... Yes, we use external registered training organisations ... and also use off-site ... training through suppliers and manufacturers. Yes, that is being adopted more and more ... We have on-line courses ...

She summarised her organisation's future needs as:

> Professional development of all our employees is where we certainly need to go ... It's not just throwing training out there for the sake of training. It's doing it right ... It's identifying everyone's different learning styles and applying best method to that person ... We're not there yet ... So I think all different types of learning have their place.

In such lists and summaries, Vivienne illustrated the oft-stated manager view that worker learning is best assisted by training that addresses the focused need, pressures and aspirations generated for workers and workplaces by ongoing work change.

Summary

In sum, perhaps not surprisingly, the 34 managers viewed effective learning assistance as that which is organised and enacted through training that fits in with busy work circumstances, where securing worker release time and the necessary resources was often difficult. They often saw themselves as being responsible for workers' engagement in this training and benefiting from the relations they established with co-workers, their organisation and the experts training them. Equally, they accepted change as the primary driver of the continuous 'need' for training and workers' learning. Learning for work was perceived as being facilitated through the provision of training programs. And despite the high levels of training already being conducted, there was, as Alan (mining) stated:

> definitely need for more training ... job-specific but getting everyone on board ... The bottom line is we need to know can that person do the job ... what they need to do in order to continue getting work.

Importantly, these perspectives on support for workers' learning commonly emphasise that the imperatives driving both enterprise-sponsored training and workers' learning are associated with work practices and activities: to get a job, to keep a job and to advance in a job for workers; and to meet workplace needs by managers. Hence, there are clear distinctions between the imperatives associated with the tertiary education and training system and those articulated by these informants. Whereas the former is concerned with the integrity of nationally prescribed certified units of education, the latter is concerned with enterprise viability. For instance, in the interviews with managers, there is little reference made to training packages, competency-based standards or even national standards. The goals and outcomes of training and individuals' learning efforts are those associated with attaining workplace outcomes, not those of educational certification, except when regulatory outcomes are required for employment.

However, while the data reported and discussed above refer to factors supporting workers' continuing education and training, other data identified and illuminated factors that inhibited it. These are discussed next, first of all from the workers' perspective and then from the managers'.

Workers' perceptions of factors inhibiting their learning

In this section, accounts of access to expertise, access to training, digital considerations and opportunities for practice and refinement are discussed.

Access to expertise

Support from experts — those with the occupational techniques and understanding of the specific workplace requirements for everyday and novel work tasks — are reported as assisting ongoing learning. Apart from learning alone, workers supported this view by proposing that experts were central to any training venture or model of training delivery. Consequently, there are barriers to the learning arising from a lack of access to expertise. Training conducted by those with low expertise — in knowledge, skill or context familiarity — denies workers the opportunity to obtain the full benefit of continuing education and training. Indeed, many expressed dissatisfaction with being trained by those who were not experts in the particular work setting; that is, those who had only partial expertise and limited contextual knowledge of how skills, practices and attitudes were deployed in the particular workplace. This implied that learners wanted to gain the knowledge and skills required for effective practice in and for the work setting. These informants reported wanting to learn both the skills and gain the broader understandings of experts. Moreover, the ability of workers to engage with experts as trainers determined what was learned. In all, whether they were internal or external to the organisation, having access to expert practitioners was seen as essential by these worker informants. They saw expert practitioners as providing advice at work and addressing unusual problems and updated or current practices. For example, Colin (mining) commented on a training course with an external trainer:

> We were all sitting down here, a lot of us. It was the first time we'd been exposed to this course, we learned a hell of a lot and we were able to discuss a lot of things and get things clear that we've always wondered about.

Particularly important was expert support during initial instruction and the subsequent developmental experiences in the workplace when and as needed. According to Barry in one finance sector workplace, even though expertise was available, employees were advised to 'rely on manuals' for their learning, which the workers considered ineffective. In the mining sector, workers reported that access to expertise was restricted by the size of the groups being trained, claiming that if the groups were 'too big' (Xavier, mining), then close guidance from trainers was limited. In circumstances where expert training and guidance were not available, workers reported needing to find alternative sources of support for their learning and/or problem-solving, with concerns that these alternatives may be less effective and reliable.

So, lack of access to expertise and ineffective integration of training and work practices were seen as inhibiting productive learning. In sum, the capacity to access and engage with expertise based on knowledge of the particular workplace and the ability to meet specific work performance requirements was seen as being central to effective workplace learning support.

Access to training

Limited access to training in regional and remote areas was also identified as inhibiting the required ongoing learning for employability. When work sites were located a substantial distance from the place where training was conducted, lengthy journeys were necessary and large costs were incurred. Alternatively, in the case of external training providers, being required to spend considerable time travelling when conducting training in remote worksites added to the cost and inconvenience of participants. However, this was not always the case. For instance, some mining informants found the most readily available training was on local mining leases and provided by on-site trainers. So, for these workers, access to training and support was more likely to be offered in the remote circumstances where mining or gas extraction occurred than in metropolitan centres. Yet, some workers in regional communities acknowledged a skill and knowledge deficit in relation to the practices and requirements of 'head office' (Dave, mining). Access to learning support and resources at remote worksites was also problematic for 'fly in' and 'fly out' workers. Being rostered off the worksite when training was conducted on site made it difficult to 'keep up to speed with skills'. The lack of opportunities to interact with co-workers because of physical or geographical isolation and apparent increased workload in regional locations where training was not seen as a high priority added to these concerns. A lack of learning opportunities could also arise from being the only person in the field carrying out a particular occupation. So, as with access to experts, the accessibility of training plays a key role in these settings, with, potentially, workers in more remote or regional settings being particularly affected in these ways.

Technology considerations

Online learning resources and support might be seen as possible solutions to the issues created by limited access to training and expertise. However, some worker informants cautioned against this solution. There was a clear misalignment in the data between workers' preferred kinds of learning support and online learning support. Some specifically rejected online learning support and resources because they had 'no one to ask' for clarification of the learning or to help with problem-solving. It is probable that intergenerational and other kinds of differences shape these perceptions; that is, there may be a growing number of workers who are familiar and comfortable with electronic technology and find it an effective and convenient means of learning. One informant stated, for example, 'I had to really kick, fight, scream and bitch and complain all the way to the general manager of Australia to get a computer' (Heinrich, mining). Another worker, a graduate engineer, recounted how he undertook a series of modules online during his downtime at a remote mining setting. He commented this was a productive way of using time in this remote location, when he was not working. Thus, while some workers' learning needs are met by online resources and support, others may not be. So, while electronically mediated forms of learning support may be seen as being one way of responding to geographical or physical isolation, its efficacy is likely to be dependent upon workers' familiarity and competence with this medium. Even then, this medium may not be the most effective means for all kinds of learning, because it is not able to provide appropriate experiences for that learning.

Organisation of training and opportunities to practise

Workplace factors were also considered to inhibit workers' learning, including limited opportunities for applying newly learnt skills to work tasks (that is, to practise), which diminished workers' ability to perform their new skills and possibly contributed to the failure to effectively learn and therefore meet work requirements: 'you go off the boil' (Ivan, mining) claimed. The actual demands of work can also inhibit learning. Conversely, a factor identified was that there was too much training in the

workplace and that the pace of change was too rapid: 'I'm needing to learn new things all the time' (Jono, mining).

The quality of training was also reported as potentially inhibiting effective learning. Poorly organised and presented training, badly prepared learning materials and inadequate feedback were noted as inhibiting effective learning. Other comments about the conduct of training in the workplace included the lack of opportunity:

- to contribute to training content; for example, 'I would like more input into saying what I want training in' (Heinrich, mining)

- to access such training, for example, 'can't participate as fully as possible' (Maria, finance)

- to determine the type of training, for example, 'no self-paced opportunity' (Naomi, finance).

These statements are indicative of workers wanting more say about and involvement in training activities. They suggest a preference for directing and controlling their learning, with some workers indicating that they would augment training opportunities with their learning-related activities in their workplace and in their own time. They frequently acknowledged that, although their work drives their learning, they have a need to be self-reliant as learners and take an active role in further strengthening this self-reliance by actively seeking support, if necessary, through their work. Anything limiting this kind of active learning can be seen as inhibiting their development.

In sum, while workplace factors were seen as supporting training in some instances, in others, they constituted barriers to effective learning. These included reduced access to training opportunities and appropriate levels of expertise, the difficulties associated with remote locations and the use of electronic technologies to support remote learners, the quality and organisation of training materials and events, and the suppression of learner agency. Beyond these training activities, some respondents referred to the inhibiting factors associated with being unable to learn optimally because of work organisational and practice constraints. Fundamentally, despite claims about hindrances, most informants reported that their learning experiences were positive.

Managers' perceptions of factors inhibiting workers' learning

Manager perspectives on what inhibits workers' learning generated a different set of considerations from those of workers and are mainly associated with:

- the organisation of training events

- the demands of production

- the rostering of staff for training

- attitudes that some employees have towards training.

These considerations are now discussed in turn.

Managing the organisation of training events

The managers reported the size, complexity and geographical location of an enterprise as determining factors in the organisation of training, much of which was directed to ensuring that workplace goals and priorities are met. The larger the workforce, the more difficult training events were to coordinate. The data suggest that the more geographically remote the workplace, the less choice there is in available service providers for conducting on-site training events, and the greater the

expense in transporting workers to off-site training venues. Even large and otherwise well-resourced mining companies still struggled to attract effective learning support in remote locations. Indeed, if an enterprise was small and geographically remote, the training imperative was 'sometimes forgotten' (Oliver, aged care) 'by corporate office'. The provision of space on site for training was also sometimes a limiting factor, as was the time taken away from management duties when managers needed to supervise the development of new skills and practices. Yet, these factors were reported as arising quite differently across enterprises. For instance, in one regional community, an enterprise made considerable efforts to prepare an employee to work effectively in socially isolated circumstances. The company flew this worker to the state capital city to complete highly structured and well-supported training, including simulations, so that she became competent and self-sufficient. Hence, the ability to provide and manage effective continuing education and training was not simply a case of its being easy for metropolitan-based workers and inhibiting for non-metropolitan workers. Instead, a range of factors associated with the work being undertaken, the size and scale of the enterprise and the particular workplace priorities also shaped the management of continuing education and training. Of course, the production or service imperatives were also central to managers' decision-making.

Training versus production

The purposes of continuing education and training for workplaces are more likely to be focused on worker and workplace needs than on meeting the requirements of educational institutions and certifications. While certification may be more or less important for individuals, the direct benefits of training for them and their workplace will be more important than the certification requirements of educational institutions. Hence, the kinds of continuing education and training provided in workplaces become subject to negotiation between the demands of production and servicing clients' needs and the development of the capacities required for workers and their workplaces.

Certainly, for these managers, maintaining the production of goods and provision of services while juggling the need for training was a principal concern. When experienced staff attended training, the organisation was sometimes left with problems relating to worker shortage in terms of numbers and costs. As explained by Jenny, an aged care manager, 'trying to organise the roster to get everyone off', yet meet the required skills for work, was a challenge for some managers. Some reported the demands created by compulsory training and the associated cost as 'staff needing three hours off — always needing to pay them' (Ruby, aged care). Stephen, a senior manager from the financial sector in a metropolitan area listed a number of inhibitors to the process of managing the tensions between training and production. These were:

- environments characterised by a lack of consultation and engagement with the people who were to implement the change

- training programs that were ill focused and poorly prepared and enacted

- work settings where questioning was not always welcomed

- circumstances where individuals had limited understanding of the existing system and were not able to access local support to learn more about its implementation.

In sum, the inhibiting factors associated with managing training and the demands of production related to the size of the organisation, the tension between balancing the training function and the organisational aims and outcome imperatives, and sometimes a lack of consultation by 'head office' about the implementation of new programs or understanding local constraints and requirements. In

regional areas, the main concerns were related to backfilling positions when staff were withdrawn to participate in training.

Workers' attitudes toward training

Some managers also reported that workers' attitudes toward training inhibited its effectiveness. This claim should not be seen as contradicting findings elsewhere about strong learner engagement. Instead, it suggests that these workers may well be selective about the kinds of training they believe to be warranted and useful. Indeed, some managers reported a lack of perceived need for training by workers:

> People who have a lot of experience and a lot of knowledge are still of the opinion that there's nothing that they do not know … We need to do a fair bit of work to make them aware things have changed. Also, staff think 'I'll work it out for myself on the job'. (Oliver, aged care)

This statement is analogous to findings about older workers' engagement with training (Billett et al. 2011), whereby workers suggested that they were already competent in their work and that training was often a distraction or more concerned with accountability than their development. One manager (Oliver, aged care) claimed that: '70% of staff over 50' responded this way to the need to learn new things, suggesting that they appeared to be 'not interested in studying'. Still, it may be inappropriate to associate a lack of interest in a training program with a lack of interest in learning. The managers also claimed that staff who had been working in the industry for 20 years did not see learning about how to operate computers as being relevant to their current work. Such reluctance may have implications for their acceptance of online training.

In summary, the perspectives from both workers and managers identify common concerns about the availability of and access to experts for supporting workers' continuing education and training. The need to redress issues associated with workers' learning in regional areas and finding ways of reconciling the potentially conflicting demands of production and learning are particularly relevant to managers. A noticeable contrast arose between workers' and managers' perceptions about the motivation of workers to engage in continuing education and training. While workers consistently reported a general acceptance and enthusiastic engagement in learning, managers reported that there were varying levels of motivation for engaging in training, with some workers (for example, those in lower-skilled roles and those with more seniority and experience on the job) expressing less motivation. This difference is explainable from what has been proposed above: workers are concerned about the learning required to perform their job effectively and advance their interests and careers, while managers are concerned about the effectiveness of training in achieving enterprise goals. Although both perspectives are directed to workplace performance, the perspectives on the goals and the processes of achieving them are quite distinct.

Other factors impacting on effectiveness of continuing education and training

Phase 2 of the research also identified four additional factors that appear to impact on the effectiveness of continuing education and training. These are:

- sectoral differences
- accreditation and certification
- role of managers

- continuing education and training in non-metropolitan areas.

These are described and discussed below.

Sectoral differences

While the Phase 2 data identified common issues and practices, as reflected in the broad consensuses reported above, some sector-specific variations and differences were also identified. Some occupational skills and knowledge are particular to each industry, such as the ability to drive a truck at a mining site or provide personal care in an aged care facility. Industries may also have distinct conceptualisations or traditions of training, with some valuing experience more than training or certification. Within aged care facilities, there is often a tension between management concern about recognition of prior learning without any further training or updating and a belief by long-time workers that they deserve to have their experience validated without further assessment or training. In the mining industry, skills such as welding often need to be continually demonstrated and be certified six-monthly to demonstrate current competence.

Examples of such differences in other industries come from recent Australian research. For example, a report on the Australian agrifoods industry found that many workers were interested only in training that helps them to obtain or keep a job, or involves potential promotion, and that there is no culture of accredited training in the industry and no economic imperative for it (Mills et al. 2012). On the other hand, Figgis and Standen (2005) found that in the oil and gas industry existing skilled workers were generally much more confident than entry-level learners and 'in a workplace that affords them the opportunities, they effectively take charge of their own learning program' (p.5). In the study reported here, workers in the mining, aged care, financial services and services industries appear to generally accept the need for training to remain competent. However, some typically lower-skilled workers resisted undertaking training beyond that mandated for their employment. So, motivation and value for learning remain key factors for engagement in learning.

Further, the consequences of poor training are likely to be greater in some industries than others. For example, poorly trained mine workers can be killed or injured and incorrectly applied procedures can result in the illness or death of elderly patients in aged care. However, the outcomes of poor service in hospitality or incompetent attention to a client's financial matters, while personally distressing and harmful to enterprises' profitability, are not life-threatening. There are also differences in the available resources for continuing education and training and the need for regulation. Some industry sectors may have a greater need for workers to innovate and offer new solutions to attract extra business or retain clients, whereas in others faithfully adhering to specified procedures is crucial for health and safety reasons. In such instances, a buddy system might be more readily implemented in an aged care facility or a larger office, since the staff work so closely to one another. However, where jobs are specialised (as in the case of one of the enterprises that participated in the research: a small tourist park exhibiting wild animals), there may not be more experienced colleagues available for individual workers to be paired with. The same limitation applies, of course, to many small businesses.

Hence, although there may well be similarity in the models and approaches to continuing education and training, tertiary education and training institutions and workplaces have distinctly different kinds of goals to be achieved, different ways for providing learning and different techniques and activities for facilitating learning. So no single model of continuing education and training provision and support can be applied uniformly across industry sectors. Importantly, the preferred models and approaches will need to be implemented in particular ways across industry sectors. Consequently, a national provision of continuing education and training would require the capacity to accommodate such differences.

Accreditation and certification

Coupled with an increasing emphasis on learning and training is the increasing importance of the accreditation and certification of learning for occupational purposes, quite often for regulatory purposes. Very few workers were openly resistant to certification, although vocational certificates under the Australian Qualifications Framework were more important to workers in industries such as health and community services, and services, than in financial services. In mining, while vocational certificates are widespread and essential for tradespersons, the nature of the industry means that there is also a considerable focus on specialised certificates in such areas as occupational health and safety and the operation of machinery.

The issue here is the extent to which certification is significant in different industries and its purpose, and who is responsible for the assessment and certification. Although much of the learning required for sustaining employability across working lives might take place in circumstances outside educational programs and institutions, the provision of certification for workplace-learnt knowledge and through work-based processes may be becoming more essential and widespread across a tertiary education and training system supporting the ongoing learning of Australian workers in and through work.

Roles of managers

Managers may always have had some interest in developing workers' skills, whether through supervision, or more directly through mentoring or coaching, or in supporting or facilitating access to education and training. What this study has found is that in ever-changing workplaces and increasingly regulated environments, and with greater emphasis on accreditation, many managers have a more central role in training policy and practice. Their responsibilities extend from budgetary considerations to making decisions about the use of workplace resources for staff skill development — the way the resources are deployed, the purpose of the training and the determination of priorities. Not surprisingly, managers viewed continuing education and training as being very much directed towards achieving specific enterprise goals, confirming Misko's (2008) conclusion that 'employers are mostly interested in the results of learning rather than the forms of learning' (p.7). They also indicated a preference for training programs to be directed towards the realisation of those goals. Of course, and importantly, this preference is counter to those of workers, as stated consistently in their experiences and preferences across the Phase 1 and Phase 2 data. Nevertheless, as managers increasingly become key players in the process of maintaining the competence of workers, there are indications from the research that they are also becoming interested in identifying the most effective forms of continuing education and training. The issue is whether managers recognise the changing importance of their role and have both the willingness and capacity to carry responsibility for having training, mentoring and modelling roles.

Given the importance of workplaces as sites for continuing education and training, the role of and decision-making by the managers in enterprises becomes a key feature of a national tertiary education and training system.

Continuing education and training in non-metropolitan areas

The findings suggest that continuing education and training in non-metropolitan areas might be different from that in metropolitan centres. The inclusion of a greater proportion of worker and manager informants in rural and regional areas provided some particular insights. Among the issues identified, and mentioned above, are limited access to external expertise, the quality of the available

expertise, the often limited choice of providers, and the costs of bringing an external provider to a more remote location, or transporting employees to a central location for training. A related challenge is employers' reluctance to take someone off the job when an external provider arrives to provide training, usually as part of the requirements for a vocational certificate. Given the numbers and levels of staff in some rural and remote locations, the preference expressed by many of the interviewed workers for learning one on one or in a group is simply not always possible. Such workers generally did not favour online learning as an alternative means of keeping up to date, although there may be an option for a manager or supervisor to act as a mentor.

Consequently, a national system of continuing education and training needs to take into account how the requirements of workplaces and workers in rural and remote locations can best be met, especially in relation to organisations with limited financial resources and the inability to backfill. To simply base such a provision on what is available and possible in metropolitan centres would misrepresent and distort the task and nature of a national system.

Summary

These findings emphasise and illustrate the significance of workplaces and work activities as key sites and preferred practice bases for learning designed to ensure employability and advancement within the workplace across the working life. The reports from workers highlight the specific expertise and support available, whether from co-workers, supervisors, managers, external training providers or industry suppliers, as well as identify a number of barriers to the efficacy of workers' learning, as perceived by both workers and managers. Additional factors relating to workers' continuing education and training and not identified in the first phase of this research project have been flagged. These are:

- sector differences

- accreditation and certification

- the changing roles of managers

- tertiary education and training provision in rural and remote locations.

To summarise and consolidate the findings from Phase 2 of the project, responses to the three research questions are presented below.

Research question 1: Do industry, employer, employee and related organisations' experiences with and expectations of tertiary education and training for the purpose of sustaining occupational competence and employability align with the proposed models and approaches?

As intended, the 2012 analysis of data refined the conclusions from Phase 1 of the project. It confirmed and further detailed those findings, identifying and consolidating the four preferred models of continuing education and training for Australian workplaces:

- practice-based experiences with direct guidance

- practice-based experiences with educational interventions

- wholly practice-based experiences

- wholly educational institution-based experiences.

Furthermore, within these models of continuing education and training, it was demonstrated that workers' learning is best supported through:

- taught and guided processes in workplaces (that is, *working and learning one on one*)

- individuals working alone (that is, *working and learning on his/her own*)

- facilitated/expert-guided group processes (that is, *working and learning together*).

These findings indicate that any national framework for continuing education and training must acknowledge and respond appropriately to the specific contexts in which Australians work and learn. Those who present and support learning may have limited effectiveness if they are unable to address the localised requirements for work and learning. The most relevant provision of continuing education and training is likely to be one that supports development through:

- workplace-oriented expertise, enabling both initial one-on-one guidance and instruction

- follow-up guidance and instruction

- the provision of sufficient time for workers to reflect on and hone their skills in ways that can be effectively assessed and evaluated

- accessible programs offered through registered training organisations. This finding is consistent with that of Booth et al.'s (2005) conclusions about the aged care sector, for instance.

Under such circumstances, workers can work autonomously while supporting others' learning and build the relationships with internal and external expertise and stakeholders that secure the desired personal and organisational goals. These therefore appear to be the kinds of provisions required by educational institutions and systems for sustaining workers' employability. However, where the educational purpose is concerned with advancement to higher levels in an occupation or changing occupations or careers, institution-based provision of continuing education and training is more relevant.

Research question 2: How do these tertiary education and training models and practices most effectively align with changing workplace contexts to maintain occupational competence and employability, and for what kinds of work and workers?

Changing technology and work practices and regulatory compliance necessitate ongoing training across the occupational tasks represented in this study. The data provide rich worker and manager accounts that directly align the need for and nature of continuing education and training with the ongoing demands for developing and sustaining the competence and confidence that enable workers to remain employable and organisations to be viable. For example, workers in administrative roles dealing with finance, purchasing and customer service tasks, whether in the hospitality, mining or services sectors, reported needing to constantly further develop the foundational and procedural skills required for increasingly complex software and hardware computing applications. Faster, more accurate and integrated information systems were replacing current systems, resulting in many of these workers being engaged in ongoing development of their work practices and requiring additional information to ensure correct responses to systems requirements.

Similarly, workers and managers in the mining, health care and finance sectors reported that external (that is, government and industry) and often internal (that is, organisational) regulatory and compliance requirements were driving the provision of continuing education and training across aspects of their work. Equally, workers and managers in the services sector reported needing to respond to procedural changes initiated by management and to address competition and client and customer demand. Demands for new product lines, a stronger community presence and contribution, and enhanced customer service are just some of the business imperatives promoting the technological

and internal regulatory changes to which workers and workplaces were responding through continuing education and training.

The challenge for the tertiary education and training system is identifying how its programs and modes of delivery and learners' support can be aligned with these demands and requirements. This challenge is made stark in the context of the four preferred modes of learning experiences and practices for meeting these needs, as identified earlier.

It follows that tertiary education and training institutions need to offer training within workplace settings and engage businesses collaboratively to support this learning in the context of work. For the purposes of sustaining employability and enterprise viability, it appears that tertiary education and training systems may need to move away from a strong focus on national prescriptions and respond to localised variations of occupational practice. That is, work performance, and therefore the educational provision supporting it, is likely to be at least as much situationally as nationally prescribed. This conclusion accords with the preferences and perspectives of the vast majority of worker informants interviewed across the two industry sectors in Phase 1 and the four industry sectors in Phase 2. The government emphasis on compliance, accreditation and certification needs to be mediated by concerns about local applicability and personal relevance, and be aligned with changing workplace contexts.

Research question 3: To what extent can workers be prepared to be active in engaging in productive learning across their working lives? What kinds of support are considered necessary for such preparation, taking into account such factors as abilities and educational backgrounds?

Across the interviews, experienced workers consistently reported and provided evidence of their engagement as active learners and indicated their preferences for models of continuing education and training. In short, they consistently reported wanting to learn. Moreover, there appears little distinction between learning for work and learning for themselves. In addition, most were not relying on workplace learning through employer-sponsored mandatory training, which their managers favoured. Instead, they preferred to direct their own workplace learning efforts, by seeking support when necessary for task completion — even when engaging with more experienced others. The label of being an educator or trainer did not automatically qualify individuals to be the source of credible advice. Rather, it is competence in particular workplaces that is perceived as the basis of credibility. Such judgments about co-workers or workplace experts were expressed without prompting. Nevertheless, some managers viewed (erroneously) workers' reluctance to engage in training programs as their not wanting to learn. Both the Phase 1 and Phase 2 findings confirmed workers' perceptions of learning as primarily to achieve work goals and, in doing so, meet their personal goals. Nevertheless, supporting workers as active learners means considering how they prefer and need to be supported. For instance, rather than assuming that older workers need and require training, they might be consulted about how best their learning might be promoted. Here, as elsewhere (Billett et al. 2011), they expressed a preference for collaborative forms of learning with other workers rather than their being positioned as 'students' in training programs.

Preparation for active learning may therefore be less important for workers than positioning them in ways by which they can be active and directed, including how they engage with more experienced and expert co-workers and external trainers. Being an active learner extends to how they interact with others (that is, their interdependence and self-directedness) as well as their independence in learning. Although these qualities most likely arise from earlier experiences, including their proven capacities to secure effective outcomes and also their confidence in their occupational capacities,

personal goals and trajectories, they may require prompting. Maximising this capacity may occur in workplaces that afford the opportunities and discretion for achieving both workplace and personal learning goals.

Discussion

The findings broadly support the four principles for continuing education and training that were advanced in the Phase 1 report (Billett et al. 2012a, pp.8—9). That is, when directed towards sustaining employability and advancement within the workplace or occupation, continuing education experiences should:

- be situated in workplace experiences

- entail direct support from experienced others

- provide high-quality individualised support for learning

- motivate and engage the learners.

When directed towards goals outside the workplace such as to a higher level or different kind of employment, then institution-based provision with appropriate certification is more likely to be the most effective. Even then, such provision will need to be supported in practice settings. These findings provide further support for Figgis's (2009) conclusions about the trends in contemporary practice in VET teaching and learning and for Choy et al.'s (2008) conclusions about effective models of employment-based training.

The findings highlight five main implications relevant to continuing education and training stakeholders; that is, workers, supervisors, managers, training organisations, national policy-makers and regulators. First, there may be a misalignment between the kinds of models and practices required to facilitate learning across the working life and some of the current practices of tertiary education and training institutions. This is not to deny that individual examples of innovative approaches and partnerships occur — where the educational emphasis is in workplaces. It is in and through work that workers report being able to advance their personal and occupational learning needs and this takes place where training is a basic aspect of work rather than something additional to it.

Second, many of the mechanisms and processes of vocational education and training (for example, training packages, competency-based training, certification, accreditation, compliance) do not always relate well to workplaces or to workers' needs, such as securing employability and advancing careers. The data show that workers and employers make judgments to accommodate learning for and performance in workplaces, not to suit the requirements of an education system. Hence, the focus of continuing education and training should be directed on to practice contexts, that is, workplaces.

Third, initial and ongoing instruction and support from experts, supervisors or more experienced co-workers is necessary for the development and enhancement of effective workplaces. Workers, managers and trainers bring different understandings, priorities and criteria to the definition of expertise. Yet, ultimately, expert performance is located in the circumstances where it is enacted and can be judged as being expert. So, whether from outside or within the workplace, any person with the role of teacher, guide or mentor needs to be able to act competently in the workplace to be taken as being a credible source of advice.

Fourth, strong partnerships between workplaces and registered training organisations rather than client-contractor arrangements may be required to build the capacities of workplaces to more effectively support ongoing learning. Industry and professional organisations can encourage and

facilitate the partnerships required to support enhanced learning across enterprises and they may have particular roles to play in non-metropolitan areas, where the need to support individual and organisational members may be greater. In effect, employers need to engage more closely with training providers, and this partnership would be enhanced by closer engagement with both tertiary education and training regulatory bodies.

Finally, effective workplace performance and experience are valued more highly than qualifications, as noted above. However, those performance requirements change as workplace requirements change. Although on-site real-time assessment is required as evidence of proficient performance, the currency and validity of those assessments may be unreliable.

It follows, therefore, that making sense of this complex network of provision, motivations, interrelationships, local and global influences, and the aspirations of individual workers in the context of organisational goals and expectations represents a major challenge to designing and enacting continuing education and training. Nevertheless, in the process of refinement of Phase 2 of the project, the key elements of any effective scheme of continuing education and training were identified.

First, from the approaches to continuing education and training examined through research Phases 1 and 2, the following four key models were identified:

- *Practice-based experiences with direct guidance*: workers claimed that hands-on practice-based learning experiences with direct one-on-one guidance and instruction from experts offered the most effective way to develop their competence and confidence in their work.

- *Practice-based experiences with 'educational' interventions*: these interventions refer to both 'in-house' trainers and external trainers — the latter from registered training organisations — offering accredited qualifications. This model provides workers with access to expertise to assist their work-related learning, with follow-up support making these interventions effective.

- *Wholly practice-based experiences*: these were highly valued, particularly when opportunities to apply and refine what had been learnt in either on- or off-site work activities were included. Being able to work and learn further by applying their skills to new and ongoing tasks was consistently valued.

- *Wholly educational institution-based experiences*: these are essential for the learning and certification that cannot be realised through individuals' workplace-based experiences; they need to be accessible to working Australians.

Within these models, workers' learning was found to be best supported through:

- *Taught and guided processes in workplaces*: this is premised on the basis of guidance and instruction being expert-directed, but hands-on, and preferably in the workplace.

- *Facilitated/expert-guided group processes*: small groups that support information-sharing and working together are preferred — if the group becomes too large the levels of personal engagement decline and learning becomes less effective.

- *Individuals working alone*: individuals need to be supported when working and learning alone through access to expertise and necessary information when clarification is needed.

Conclusion

The findings presented and discussed above indicate that there is need to go beyond consideration of continuing education and training as being wholly concerned with course and program provision.

Indeed, taking a broader view of what constitutes continuing education and training is essential. Continuing education and training occurs within and at work, in educational institutions working with enterprises, and in other contexts and situations where experiences can be provided to assist individuals to learn for their working lives.

The importance of this broader conceptualisation of continuing education and training has been recognised elsewhere; it is part of an international trend towards improving the effectiveness of continuing education and training for workforce development. For example, in a review of innovative practices in international vocational education and training, including the vocational learning of people already in the workplace, Hillier (2009) has specified four approaches to continuing education and training that encapsulate changing practice. Her categories are: closer engagement in work-based learning; new technology facilitating learning; networks, centres of excellence and resource banks; and networks in professional practice. In another instance, the European Centre for the Development of Vocational Training (CEDEFOP) has been monitoring contemporary vocational education and training across Europe and identified a range of ongoing responses to the economic and social changes taking place in that part of the world; these are discussed in *Modernising vocational education and training* (2009). The Organisation for Economic Co-operation and Development (OECD) in its 2012—13 review, *Skills beyond school*, also explores how vocational education and training can be more responsive to workforce development needs, one of its questions being: 'What are the most effective ways to blend programmes and workplace learning?' In another example, Billett (2012) reviewed continuing education and training policy and practice in four European countries and identified six significant approaches:

- central agency-focused (Denmark, Switzerland, Sweden, Germany)

- learning through work activities alone, those activities now being embraced as legitimate, worthwhile and certifiable (Germany)

- acknowledgment that the focus of continuing education and training is different from that of entry-level training; that is, its focus is more on individuals' development and improving their work than on fidelity to the goals of educational provisions (Germany, Denmark)

- adaptation of programs to accommodate adult participants (Germany, Denmark)

- recognition of existing learned knowledge (Denmark, Sweden, Germany)

- alignment of the recognition of prior learning with continuing education and training (Denmark).

Developments such as these underline the widespread concern for identifying how best tertiary education and training can sustain workers' employability and career development across lengthening working lives and maximise their contributions to their workplaces, and, collectively, to national productivity.

References

Billett, S 2012, 'Continuing education and training in Singapore: purposes, policies and programs', paper prepared for Workforce Development Agency, Government of Singapore.

Billett, S, Dymock, D, Johnson, G & Martin, G 2011, 'Overcoming the paradox of employers' views about older workers', *International Journal of Human Resource Development*, vol.22, no.6, pp.1248—61.

Billett, S, Henderson, A, Choy, S, Dymock, D, Kelly, A, Smith, R, James, I, Beven, F & Lewis, J 2012a, *Continuing education and training models and strategies: an initial appraisal*, NCVER, Adelaide.

——2012b, *Change, work and learning: aligning continuing education and training — working paper*, NCVER, Adelaide.

Booth, R, Roy, S, Jenkins, H, Clayton, B & Sutcliffe, S 2005, *Workplace training practices in the residential aged care sector*, NCVER, Adelaide.

Choy, S, Bowman, K, Billett, S, Wignall, L & Haukka, S 2008, *Effective models of employment-based training*, NCVER, Adelaide.

European Centre for the Development of Vocational Training (CEDEFOP) 2009, *Modernising vocational education and training*, CEDEFOP, Thessaloniki, Greece.

Figgis, J 2009, *Regenerating the Australian landscape of professional VET practice: practitioner-driven changes to teaching and learning*, NCVER, Adelaide.

Figgis, J & Standen, A 2005, *Training skilled workers: lessons from the oil and gas industry*, NCVER, Adelaide.

Harris, R & Simons, M 2012, *Two sides of the same coin: leaders in private providers juggling educational and business imperatives*, NCVER, Adelaide.

Hillier, Y 2009, *Innovation in teaching and learning in vocational education and training: international perspectives*, NCVER, Adelaide.

Mills, J, Bowman, K, Crean, D & Ranshaw, D 2012, *Workforce skills development and engagement in training through skill sets: literature review*, NCVER, Adelaide.

Misko, J 2008, *Combining formal, non-formal and informal learning for workforce skill development*, NCVER, Adelaide.

OECD (Organisation for Economic Co-operation and Development) 2012, *Skills beyond school: the OECD review of postsecondary vocational education and training*, viewed 4 January 2013, <http://www.oecd.org/edu/skills-beyond-school/Skills%20Beyond%20School%20flyer%20%20Oct%202012%20ENG.pdf>.

Appendix A: Interview schedule 2012 – workers

Please fill in Section 1 ahead of the interview if possible

1.   Name: .... 2.   Gender: M / F
NOTE: *Names and personal details will not be shown in the research report*

3.   Age group (please tick one):

15— ☐   20—29 ☐   30—39 ☐   40—49 ☐   50—59 ☐   60—69 ☐   70+ ☐

4.   Industry: ....   5. State: ....

6.   Current job: ....   7. No. of years in current job: ..... years

8.   Metropolitan ☐   Rural/Regional ☐

9.   Employment status

Permanent	☐ Full-time	☐ Part-time	☐ Hrs per wk ....
Fixed-term	☐ Full-time	☐ Part-time	☐ Length of contract ....
Casual	☐ Full-time	☐ Part-time	☐ Hrs per wk ....

10.   Approx. no. of employees at the site where you work (e.g. factory/mine/care centre/office)

1—5 ☐   6—10 ☐   11—20 ☐   21—99 ☐   100—199 ☐   200+ ☐

11.   Previous job...   12.   No. of years in that job: ..... years

13.   Qualifications (Please tick all that apply)

Final Year Level/Grade of School Education					
Vocational Certificate: Certificate I/II		Certificate III/Trade Certificate		Certificate IV	
Diploma/Advanced Diploma		Bachelor Degree		Postgrad. qual.	

Other: _____

In the sections that follow your responses to the questions will be audio-recorded and later transcribed, but are confidential to the research team. You do not need to write any answers except to tick boxes.

SECTION 2: YOUR WORKING CAREER BEFORE CURRENT JOB

[Audio recorder ON]

14. Can you please tell me about the qualifications you have acquired since you left school? How did you do that training and who provided it?

15. What other sorts of training and learning have you done, before you started your present job. For example, did you learn other things on the job?

16. Looking back on the period since you left school and before you got your current job, is there anything you would change about how you learned and trained?

SECTION 3: YOUR CURRENT JOB

17. In what ways has your current job changed in recent years?

18. What kinds of changes do you expect to occur in your job in the future?

SECTION 4: WAYS TRAINING IS PROVIDED — CURRENT JOB

19. How is training organised to keep your knowledge and skills updated in your current job? Please tick all that apply, and indicate three most preferred ways.

Training provided by	Ways training is provided in current job to keep up-to-date	Please tick all that apply	Most preferred (tick up to 3)
Employer	Individual mentoring by supervisor		
	Individual peer support from experienced worker/s (e.g. buddy system)		
	Small group meetings/discussion in workplace with manager, in-house trainer etc. (e.g. staff meetings, shed meetings)		
	Small group training in workplace with manager, in-house trainer etc. (e.g. classroom teaching)		
	External trainer (e.g. RTO) in workplace		
	External trainer (e.g. RTO, professional association) off-site		
	Training through supplier, manufacturer, etc (on- or off-site)		
	Online courses (developed within organisation or externally)		
Other	Any other education or training, not arranged by employer: _____		

20. Please tell me why you have ticked those training preferences in the right hand column above.

21. Do you think there are better ways training could be provided to keep you up to date?

SECTION 5: WAYS LEARNING IS ASSISTED — CURRENT JOB

22. What kinds of assistance do you get in order to keep your knowledge and skills updated for your current job?

Ways learning is assisted in current job to keep up to date	Please tick all that apply	How often? F = frequently S = sometimes R = rarely	Ways I prefer to learn (tick up to 3)
I do it myself individually e.g. pick it up as I go, trial & error, read manuals, go online			
I learn individually from other workers e.g. ask questions, observe, listen, discuss			
An experienced person e.g. supervisor, on-site trainer, trains or mentors me <u>individually</u> in the workplace			
An experienced person e.g. supervisor, on-site trainer, trains me in the workplace <u>as part of a group</u>			
An external trainer (e.g. from RTO) trains me <u>in the workplace individually</u>			
An external trainer trains me (e.g. from RTO) <u>in the workplace as part of a group</u>			
An external trainer trains me (e.g. from RTO) <u>off-site</u> as part of a group			
I stay updated through a professional network, or through friends and family			
Other: _____			

23. Please tell me why you have ticked those preferences in the right hand column in the table above.

SECTION 6: LEARNING SOMETHING NEW

Please think about when you recently learnt something specific for your job.

24. What was it that you learned?

25. Where did you learn it?

26. How long did it take you to learn it?

27. In the table overleaf, please indicate how you learned it.

Ways I learned something new at work	Please tick All that apply
I did it myself individually e.g. picked it up as I went, through trial & error, read manuals, went online	
I learned individually from other workers e.g. asked questions, observed, listened, discussed	

An experienced person e.g. supervisor, on-site trainer, trained me <u>individually</u> in the workplace	
An experienced person e.g. supervisor, on-site trainer, trained me in the workplace <u>as part of a group</u>	
An external trainer (e.g from RTO) trained me <u>in the workplace individually</u>	
An external trainer trained me (e.g from RTO) <u>in the workplace as part of a group</u>	
An external trainer (e.g from RTO) trained me <u>off site individually</u>	
An external trainer trained me (e.g from RTO) <u>off site as part of a group</u>	
I learnt through a professional network, or through friends and family	
Other: _____	

28. How well do you think you learnt that specific thing?

SECTION 7: ASSESSMENT AND CERTIFICATION

29. Is there any assessment in your workplace to certify the skills and knowledge you have learnt?

30. How important is it for your skills and knowledge to be <u>assessed and certified</u>?

Essential		Very important		Important		Not important		Not relevant	

Please tell me why you have ticked that particular box about the importance of assessment and certification.

31. If you could change the way your skills and knowledge are assessed, what would you change and why?

32. Who should be responsible for certifying your skills and learning: your employer, an outside agency?

SECTION 8: FUTURE CAREER

33. Do you have any plans for promotion, or to move from this job into something else? Yes/No/Maybe

34. If yes or maybe: what is it, and is *training* for that promotion or move part of your plan? If so, what sort of training? If training isn't important for it, why is that?

35. If no: how important do you think learning and training is going to be to maintain your current job or employment into the future?

OTHER COMMENTS

36. Do you have any other comments about the learning or training you undertake in your work?

37. [Regional/Rural only] How is training access or opportunity different in this rural area compared to a major city?

Appendix B: Interview schedule 2012 – managers/training supervisors

Please fill in Section 1 ahead of the interview if possible

2.   Name: ………………………………………………………… 2.   Gender: M / F

NOTE: *Names and personal details will not be shown in the research report*

5.   Age group (please tick one):

15—19 yrs ☐   20—29 ☐   30—39 ☐   40—49 ☐   50—59 ☐   60—69 ☐   70+ ☐

6.   Industry: …………………………………………   5. State: ……………

7.   Current job: …………………………………   7. No. of years in current position:…years

9.   Metropolitan ☐   Rural/Regional ☐

10.   Employment status

Permanent	☐	Full-time ☐	Part-time ☐	Hrs per wk ……………………..
Fixed-term	☐	Full-time ☐	Part-time ☐	Length of contract …………….
Casual	☐	Full-time ☐	Part-time ☐	Hrs per wk ……………………..

12.   Approx. no. of employees at the site where you work (e.g. factory/mine/care centre/office)

1—5 ☐   6—10 ☐   11—20 ☐   21—99 ☐   100—199 ☐   200+ ☐

13.   Previous job………………………………………..   12.   No. of years in that job: ….. years

14.   Qualifications (Please tick all that apply)

Final Year Level/Grade of Education:	☐				
Vocational Certificate: Certificate I/II	☐	Certificate III/Trade Certificate	☐	Certificate IV	☐
Diploma/Advanced Diploma	☐	Bachelor Degree	☐	Postgrad qual	☐

Other: _____

In the sections that follow your responses to the questions will be audio-recorded and later transcribed, but are confidential to the research team. You do not need to write any answers except to tick boxes.

SECTION 2: MANAGING EMPLOYEE TRAINING NEEDS

[Audio recorder ON]

38. What sorts of training or qualifications do staff need before they are employed here?

39. a) How has the workplace changed in recent years that require staff to update their skills and knowledge?

    b) What are the main drivers of new learning?

40. What is a recent example of employees needing to learn something new, and how did they learn this?

41. In what ways does your organisation help staff update their skills and knowledge?

42. What are your roles in managing/overseeing/organising employees' continuing education and training?

43. What are the main challenges in carrying out those roles?

SECTION 2: WAYS TRAINING IS PROVIDED

44. How is training provided in your workplace to keep employees' knowledge and skills updated? Please tick all that apply.

Training provided by	Ways training is provided in current job to keep up-to-date	Please tick all that apply
Employer	Individual mentoring by supervisor	
	Individual peer support from experienced worker/s (e.g. buddy system)	
	Small group meetings/discussion in workplace with manager, in-house trainer etc. (e.g. staff meetings, shed meetings)	
	Small group training in workplace with manager, in-house trainer etc. (e.g. classroom teaching)	
	External trainer (e.g. RTO) in workplace	
	External trainer (e.g. RTO, professional association) off site	
	Training through supplier, manufacturer, etc. (on or off site)	
	Online courses (developed within organisation or externally)	
	Other (please state):	
Some other agency	Example: training provided by a professional association (please state): _____	
Self-selected by employee	Any other education or training, arranged directly by an employee	

45. Which of the way you have ticked are the most important for ongoing learning and training in this particular workplace?

46. Are there ways keeping employees up to date can be improved?

SECTION 5: WAYS LEARNING IS ASSISTED

47. What kinds of learning support do employees access to keep their knowledge and skills updated?

Ways learning is assisted in current job to keep up-to-date	Please tick all that apply	How often? F = frequently S = sometimes R = rarely
Employees do it themselves individually e.g. pick it up as they go, read manuals and journals, go online		
Employees learn individually from other workers e.g. ask questions, observe, listen, discuss		
Employees stay updated through a professional network, or through friends and family		
An experienced person e.g. supervisor, on-site trainer, trains or mentors employees <u>individually</u> in the workplace		
An experienced person e.g. supervisor, on-site trainer, trains employees in the workplace <u>as part of a group</u>		
An external trainer (e.g from RTO) trains employees <u>in the workplace individually</u>		
An external trainer trains employees (e.g. from RTO) <u>in the workplace as part of a group</u>		
An external trainer (e.g. from RTO) trains employees <u>off site</u> as part of a group		
Other: _____		

48. Which of the ways of supporting employees' learning in the list above seem most effective, and why?

49. What kinds of changes do you expect in the future in your workplace that will require employees to continue to update their skills and knowledge?

50. In this company, to what extent is updating skills and knowledge the responsibility of the organisation and to what extent is it an employee's responsibility?

SECTION 6: EXTERNAL SOURCES AND INFLUENCES

51. What role do any external providers (e.g. RTO, profess. assoc.) have in ongoing training or professional development for your employees?

52. What are the benefits of working with external providers?

53. How can the training provided by external providers can be improved?

54. What input does your organisation have into training policy and practice for this industry, e.g. in relation to training packages?

55. What are the key issues in relation to industry or government policy that affect training or professional development in your organisation?

SECTION 7: ASSESSMENT AND CERTIFICATION

56. What types of assessment are used in this workplace to certify the skills and knowledge employees develop during their employment?

57. How important is it for employees' skills and knowledge to be assessed and certified, and why?

Essential		Very important		Important		Not important		Not relevant	

58. Who should ideally be responsible for certifying employees' skills and learning: the employer, an outside agency?

59. Overall, how effective do you believe the organisation's present workplace policies and practices are for keeping the skills and knowledge of your employees up to date?

60. If you were Education Minister what would you do to improve the quality of Australian workers' ongoing skill development?

61. Do you have any other comments about the learning or training provided or undertaken in this organisation?

62. [Regional/Rural only] Are there particular issues that apply to providing training access and opportunities in this regional/rural area that are different to those available in a major city?

63. [Regional/Rural only] If so, what do you do to try to overcome those issues, and are there other policies and practices that might be adopted to help address those issues?

64. a) Do you think your own role in managing or supervising employees' learning and development will change in the future?
    b) If so, will you need to update your own qualifications in or understanding of education and training?

NVETR Program funding