NATIONAL VOCATIONAL EDUCATION
AND TRAINING RESEARCH PROGRAM

RESEARCH REPORT

Industry currency and professional obsolescence: what can industry tell us?

Berwyn Clayton
Pam Jonas
Regan Harding
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Melinda Toze

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Berwyn Clayton
Victoria University

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TAFENSW North Coast Institute

Mark Harris
Global Education & HR Consultancy Services

Melinda Toze
Queensland VET Development Centre

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Level 11, 33 King William Street, Adelaide SA 5000
PO Box 8288 Station Arcade, Adelaide SA 5000, Australia

P +61 8 8230 8400 **F** +61 8 8212 3436 **E** ncver@ncver.edu.au **W** <http://www.ncver.edu.au>

About the research

Industry currency and professional obsolescence: what can industry tell us?

Berwyn Clayton, Victoria University; Pam Jonas, Victorian TAFE Association; Regan Harding, TAFENSW North Coast Institute; Mark Harris, Global Education & HR Consultancy Services; and Melinda Toze, Queensland VET Development Centre

Industry currency and professional obsolescence are terms that relate to the capacity of an individual to continue to perform their job. Having up-to-date skills, knowledge and experience in a particular industry is known as industry currency, whereas in the professions a lack of ongoing learning in order to retain competence is known as professional obsolescence. The knowledge required in occupations does not remain static; for example, changes in technology or the development of new products mean that workers need to learn new skills and keep abreast of these changes. This is of importance to vocational education and training (VET) because VET practitioners are training the individuals moving into these occupations. Therefore, VET practitioners need to ensure that their industry skills and knowledge are kept current.

This report explores the issues of industry currency and professional obsolescence from the viewpoint of those working in the plumbing, hairdressing and printing industries, as well as professionals working in the science, engineering, human resources and health sectors. The focus of the report was to investigate how those working in these areas maintain industry currency and prevent professional obsolescence, the aim being to find out how VET practitioners might implement some of these practices.

Key messages

- Strategies used in the plumbing, hairdressing and printing industries to maintain skills include networking, attending industry events and vendor training, reading industry magazines and trade journals, and undertaking online research.
- Employers in the science, engineering, human resources and health professions are supportive of ongoing training for their employees and have processes in place to ensure it occurs. The majority of this training also takes place in the workplace.
- In both the trades and the professions there is ready acceptance that for updating strategies to be successful there needs to be a joint commitment from both the individual and the employer.

The authors suggest that to progress the maintenance of industry currency in vocational education and training, training organisations need to adopt a strategic approach that supports updating industry knowledge and encourages practitioners to interact with employers and industry bodies. The authors also argue that individual practitioners need to be committed to the ongoing updating of their industry experience and knowledge.

Tom Karmel
Managing Director, NCVER

Contents

Tables and figures

Tables

Figures

Executive summary

Of all the educational sectors, the vocational education and training (VET) sector is arguably the most closely linked to industry and employers. A range of bodies, including the Australian Workforce Productivity Agency (formerly Skills Australia), also stress the importance of the quality and currency of the sector's education and training in helping to equip Australia's current and future workforce needs. VET practitioners play a crucial role in ensuring this quality and currency. For this reason the Standards for NVR Registered Training Organisations[1] (SNR 4.4/SNR 15.4) require that, in addition to maintaining and enhancing their skills as teachers and trainers, they must also be able to demonstrate they are maintaining current industry skills. However, there is evidence of currency gaps in the VET workforce and there is also a lack of understanding about how best to manage and maintain industry currency within the sector itself. As a consequence, industry currency has become an increasing concern for industry, the sector and its regulators.

The purpose of this research was to investigate currency from two perspectives: how industry currency is maintained in a number of vocations; and how the professions avoid professional obsolescence by maintaining and enhancing their professional skills through ongoing learning and development. The aim of this dual approach was to develop a greater understanding of how the ongoing development and maintenance of industry currency of VET practitioners could be supported.

Research purpose and method

Twenty-two semi-structured interviews were conducted with employers in the hairdressing, plumbing and printing industries and a further eight with auditors and representatives of the relevant industry skills councils and industry/professional associations. The industry sectors chosen were seen to be ones in which employees had to maintain currency in the face of ongoing technological and/or regulatory change. Nine interviews were undertaken with learning and development managers in engineering, science, health and human resource companies (referred to here as knowledge-based organisations). A pre-interview questionnaire was also completed by these learning and development managers.

Key findings

From both a trades and professional viewpoint, industry currency was not a term with which informants were familiar. Learning and development managers used the term 'professional competence' to encompass the concepts of currency, updating and upskilling. Employers in the trades preferred the term 'industry relevance', defining it as a solid grounding in the industry gained from being trained and employed in the industry. They considered industry relevance was more critical than currency, particularly given that industry fundamentals basically remained stable.

Employers, auditors and industry representatives all acknowledged the difficulties associated with keeping up with emerging technological innovations, regulatory and legislative change and shifts in client demands. The plumbing, hairdressing and printing employers considered that it was not possible for trainers and assessors to keep abreast of every change and confirmed that they struggled to do so

[1] The Standards for NVR Registered Training Organisations replace the former Australian Quality Training Framework (AQTF) standards for relevant applicants/registered training organisations.

themselves. There was also the suggestion that they trusted training providers to employ people with industry-relevant skills and that industry currency was not something they were overly concerned with.

Employers did suggest, however, that the strategies they used themselves to keep current were equally appropriate for VET trainers and assessors. The most favoured ways of doing so were attending trade events, reading industry magazines, undertaking online research and engaging in industry networks. Significantly, product manufacturer/vendor training was also available in most industries. This was rated highly as it provided exposure to new equipment, resources and training to support their introduction into workplaces. Within the knowledge-based organisations, conferences, technical seminars, industry events and networking were all highly rated, as was training in new technology as it emerged.

Regardless of the approaches adopted to build skills and knowledge, employers in the trades wanted to see trainers and assessors attending industry events, engaging in industry networks and interacting with employers. Industry skills council representatives and industry association personnel confirmed these views. The auditors' views, by contrast, did not necessarily align with those of industry and there was some questioning of the value of industry events and online research. Auditors were much more concerned to see evidence of planning for industry currency and the application of any learning gained through updating activities. In effect, it was not about the strategies being used to maintain industry currency, but rather how the ongoing learning was taken up and used to inform teaching practice.

Auditors also noted that there was some confusion in the standards relating to industry currency and competence. They were of the view that there needed to be clarification of the terms and greater consideration of what constituted appropriate evidence of industry currency. The information contained in training packages was not necessarily useful for this purpose. Importantly, employers expressed distinct industry differences and preferences in approaches to keeping up to date. A 'one size fits all' approach, therefore, would seem to be inappropriate and any audit processes would need to take into account the context, location and type of work that trainers and assessors were involved in.

From the perspective of those in the knowledge-based organisations it was evident that effective updating was dependent on a healthy organisational climate, which sent the message that keeping current was a critical and expected activity for employees. Across both the trades and the professions employers were supportive of ongoing training and had established processes for ensuring it occurred. In the large organisations, updating was strategically planned, collaboratively undertaken and monitored and reviewed on a regular basis. There was sufficient flexibility in the way work was done to allow for 'just in time' training to meet emerging needs, and skills profiles were regularly assessed to ensure that industry changes could be addressed in the short- and long-term. Those employees who consistently updated their skills were rewarded with bonuses and promotions; those who did not were sometimes faced with sanctions. Organisational values and goals inevitably made clear the importance of current industry skills and knowledge to the knowledge-leading companies participating in the study.

The workplace was invariably identified as the most useful location for keeping current. Although formal learning was valued, greater emphasis was placed on structuring work in a way that allowed informal, peer-to-peer and collaborative learning. Seventy per cent of all training in the knowledge-based organisations took place in the workplace and was fully supported. Close contact with experts was viewed as a valuable learning strategy and encouraged. Similarly, in the small-to-medium trade enterprises, learning was a collaborative activity, with employer and employees generally learning together.

Employers and industry representatives in this study indicated that they themselves could assist in keeping VET practitioners abreast of changes in industry. While there was some evidence of this having occurred, most informants noted that they had not been approached by trainers seeking help to keep current. Others indicated that they had learnt from trainers who were sometimes more current in certain areas. This situation signals the importance of practitioners developing personal networks with employers and others in industry. It also highlights that individual trainers and assessors need to accept responsibility for ensuring their currency. In every instance, there was ready acceptance that maintaining currency was a responsibility to be shared by the individual and the organisation — without joint commitment updating strategies were likely to fail.

The findings from this research suggest a number of ways whereby the currency of trainers and assessors could be improved. From a system perspective, there needs to be greater clarity around defining the term 'industry currency' and determining what is required for individuals to be deemed current. The divergent views in various industries about updating approaches mean that these need to be taken into account in the auditing process. Professional development also remains a major issue in the sector and without targeted funding to address industry currency it is likely to continue to be a significant concern.

For training providers, industry currency requires strategic thinking and planning. Not all trainers and assessors require the constant revitalisation of their knowledge and skills; however, changes in regulation, technology and client demand impact on training and training packages. Thus, individuals who are responsible for implementing innovations will need ongoing support to keep abreast of these. Collaborative, informal or incidental learning in the workplace can provide the platform for such upskilling. The approaches adopted by knowledge-based organisations emphasise the importance of having a colleague in the workplace to provide support for learning, along with project-based work through which new skills can be developed. Equally critical are ongoing industry engagement and networking. While these activities may be individual in nature, their value should not be underestimated, particularly as employers view these activities favourably.

Finally, it is important to acknowledge that client demands and technological and regulatory change will remain issues in the VET environment, meaning that practitioners' currency will be an ongoing challenge. Strategies such as continuing professional development and close engagement with industry are valuable and valued, but require funding to support and sustain them. Further, organisations and individual practitioners require innovative thinking to determine how updating might more effectively occur in the workplace. Importantly, this demands that training providers and individual practitioners recognise industry currency as the key to the ongoing credibility of the sector.

Introduction

The vocational education and training (VET) sector is charged with providing high-quality training that meets industry and individual employer needs. A key measure of quality is the work-readiness of individuals who complete nationally recognised training. Achievement of work-readiness or competence is dependent upon the teaching expertise and industry currency of teachers, trainers and assessors. The knowledge and skills required in occupations do not remain static, which means that workers need to learn new skills and keep on top of these changes. VET practitioners are training the individuals moving into occupations whose requirements change, which means they not only need to ensure that their own industry skills and knowledge are current but they also need to pass on ways by which those they train can maintain their skills and knowledge. Thus, industry currency is a crucial aspect of VET practitioner capability.

In recognition of this, Standard 1.4 of the former Australian Quality Training Framework (AQTF) Essential Conditions and Standards for Initial and Continuing Registration and SNR 4.4 and 15.4 of the Standards for NVR Registered Training Organisations make clear exactly what competencies and knowledge are required by practitioners. Training and assessment must be delivered by individuals who not only have the necessary qualifications, they must also be able to demonstrate they possess the current industry skills relevant to the training and assessment they are undertaking. In addition, they must continue to develop VET knowledge as well as relevant industry skills and knowledge. What is less clearly defined is where industry currency is most relevant, how it is realised in practice and how it is best supported and maintained. Although the importance of maintaining industry currency is well documented from the practitioner perspective (Wheelahan 2010; Guthrie 2010), with concerns expressed about the lack of it from an industry perspective (Toze & Tierney 2010; Precision Consulting 2008; Productivity Commission 2011), there are still gaps in the sector's understanding of industry's views of currency, its importance and how it can be developed and maintained.

Research purposes and questions

The purpose of this research was to take an industry-focused approach to the investigation of industry currency and professional obsolescence in vocational education and training and the implications of each for practitioners, registered training organisations (RTOs) and industry. The study had multiple aims. The first was to explore employer, auditor and industry representative perspectives on the meaning of industry currency and how it might be developed and demonstrated by practitioners. The second was to look at how knowledge-based organisations managed skills obsolescence amongst professionals in their employ. By examining these issues through different lenses, the objective was to develop a greater understanding of what is meant by VET practitioner industry currency, how it is manifested in practice and how its maintenance might be best managed. The report explores the issues of industry currency and professional obsolescence from the viewpoint of those working in the plumbing, hairdressing and printing industries as well as professionals working in the science, engineering, human resources and health sectors.

The questions addressed in this study were:

- What do key industry stakeholders, primarily employers and Australian Quality Training Framework (AQTF) auditors, think about industry currency and what VET practitioners need to do to stay current?

- In what way do knowledge-based organisations manage the various forms of professional obsolescence in their professional workforces?
- In what ways can approaches to the problems drawn from industry and the professions be applied strategically in VET organisations?
- In what ways might individual practitioners and registered training organisations use this knowledge to better maintain their vocational competence effectively and efficiently?

Research methods and procedures

Information was gathered through semi-structured interviews informed by a review of literature. A questionnaire was also used with the knowledge-based organisations in the study. The interview schedules and the literature review are located in the support document.

For the industry currency focus, 22 interviews were undertaken with the key VET stakeholders. These included employers, auditors working with the Standards for NVR Registered Training Organisations, and representatives of industry skills councils and industry or professional associations. Interviews were undertaken with representatives from the plumbing, hairdressing and printing industries — all sectors in which technological or regulatory change was seen to be a significant issue. Details of the employers participating in the study are provided in table 1. In the majority of instances the businesses fall into the small-to-medium enterprises category.

Table 1 Employer informants: industry currency focus (n = 14)

Industry	Informant position	Company size	Location
Plumbing	Owner/manager	1–20 employees	Metro, Victoria
(4 businesses)	Owner/manager	1–20 employees	Metro, Victoria
	Owner/manager	1–20 employees	Metro, Victoria
	Owner/manager	21–40 employees	Regional, NSW
Hairdressing	Salon owner/manager	1–20 employees	Metro, Victoria
(5 businesses)	Salon owner/Manager	1–20 employees	Metro, Victoria
	Salon owner/manager	21–40 employees	Metro & regional, Victoria
	Salon owner/manager	1–20 employees	Regional, NSW
	Salon owner/manager	1–20 employees	Metro, Queensland
Printing	HR manager	Unknown	Victoria & NSW
(5 businesses)	Managing director	41–99 employees	Victoria
	HR manager	Unknown	Victoria
	General manager	1–20 employees	Regional, NSW
	HR manager	1–20 employees	Metro, Victoria

The other stakeholders included two industry auditors who worked nationally across a range of industries, including those under investigation, and industry skills council representatives from the Construction and Property Services Industry Skills Council (plumbing), Service Skills Australia (hairdressing) and Innovation and Business Skills Australia (printing). Each of these informants had training package responsibilities. The three senior officials of related professional or industry associations interviewed came from the Master Plumbers Association of Victoria, the Australian Hairdressing Council and the Printing Industries Association of Australia.

For the focus on professional obsolescence, 14 organisations were invited to participate in the study, with nine accepting. Drawn from the science, engineering, human resources and health (nursing) sectors, where significant technological change has occurred, the organisations were selected after a

review of websites, which revealed they matched Zack's (2003, p.4) description of a 'knowledge-based organisation' as an organisation that:

> holds a knowledge-oriented image of itself … It uses knowledge and learning as its primary criteria for evaluating how it organizes, what it makes, where it locates, who it hires, how it relates to customers, the images it projects, and the nature of its competition. (Zack 2003, p.4)

The nine organisations selected actively engaged in knowledge-generation and knowledge-sharing and considered the application of new knowledge to be core business and crucial to business survival.

Table 2 gives an overview of the participating organisations. Each organisation has been provided with a pseudonym to ensure confidentiality.

Table 2 Knowledge-based organisations: professional obsolescence focus

Organisation	Description
Professional Research Services	Scientific research across a broad range of areas is the major focus of the organisation. These include materials science and engineering, manufacturing and materials, food and agriculture, water, energy and the environment. Research scientists and research managers form the core of the 6500 employees, with 62% of staff being classified as professionals.
Energy & Resources Agency (ERA)	ERA's major focus is on the provision of scientific evidence to inform government and industry decisions on the social, economic and environmental management of natural resources. The organisation employs approximately 750 staff, 85% of whom are research scientists, namely, geologists, geophysicists and engineers.
Innovative Engineering Solutions (IES)	Operating globally, the IES has 160 staff in Australia and is a leader in innovative product development in the areas of electrical and electronic engineering, mechanical engineering, software and systems engineering and automated measurement and testing. Approximately 80% are engineering professionals in the mechanical, CAD, mechatronics, electronics, software and industrial design fields.
EngineeringCo	A stock exchange-listed company with approximately 26 000 employees worldwide, the company's services include asset maintenance, consultancy, engineering and construction. Professionals make up 15% of the workforce, with engineers being the largest group.
CM Consulting	A global professional services firm which employs over 6000 people in Australia, 90% of whom are professionals. Services include financial assurance, risk and control solutions and consulting in the areas of business transformation and people and change management.
Statewide Health Services	A large public provider of health services with in excess of 70 000 staff. Services include hospital and emergency services, mental health, drug and alcohol services, age and respite care and primary health care; 75% of the workforce are professionals, including doctors, nurses, physiotherapists, radiologists, psychologists and audiologists.
Alma Health	A not-for-profit provider of health services, Alma operates hospitals, a medical research institute, and pathology and pharmacy businesses. It employs approximately 8000 staff, 56% of whom are doctors and other health professionals. Of the 2500 nurses, many are employed part-time.
Global Health Care	A global provider of health services, Global Health Care employs approximately 30 000 staff across a number of countries. It is recognised as a leader in teaching and research; 78% of the workforce are professionals and include doctors, nurses and allied health professionals.
ERC Health (ERC)	A small private hospital with a focus on rehabilitation. Services include inpatient and outpatient allied health services. ERC employs 80 staff and the professional workforce consists of nurses, occupational therapists, physiotherapists, speech pathologists and exercise physiologists.

Interviews were undertaken with individuals responsible for human resource management within each organisation. While titles varied, the term 'learning and development manager' has been used throughout this report.

Interview protocols and schedules were developed to ensure that information was gathered in a systematic way. Interviews were electronically recorded, transcribed and verified by informants. Information was collated and coded and major themes were identified both within and across individual and organisational responses. This process identified consistencies, variations and interrelationships between the various sets of responses.

Limitations of the study

In addressing professional obsolescence, it was intended to interview representatives from professional bodies in the science, engineering, human resource management and health (nursing) disciplines. Some organisations were not prepared to participate, referring researchers to the materials housed on their websites. Others did not wish to participate in the study. As a consequence, information relating to professional bodies has been taken from websites only.

It is acknowledged that a sample size of nine organisations is not large enough to make broad claims that can be generalised across all knowledge-based organisations; nor is a sample of 22 key stakeholders sufficiently representative of employers, auditors or industry skills councils or professional/industry associations. Therefore, while the interviews provide a window into attitudes across these groups, the findings should only be seen as indicative.

Report overview

The findings in this report are presented from two perspectives: the first looks at the trades, where stakeholder views of industry currency are examined, while the second looks at the professions, with an emphasis on skills obsolescence and updating. A brief insight into the literature relevant to each is presented; a more comprehensive review of the literature is included as appendix A in the support document.

Background

Although industry currency has been identified as a significant requirement for VET practitioners, there is limited research in Australia that focuses explicitly on industry currency (Productivity Commission 2011; Toze & Tierney 2010; University of Ballarat 2009). Much of the research into VET practitioner capability focuses on pedagogical capability, noting industry currency as one aspect of broader capability affecting the quality of teaching, learning and assessment (Callan 2006; Guthrie, Perkins & Nguyen 2006; Mitchell 2010; Wheelahan 2010). Further, there is evidence that stakeholder understandings vary over what constitutes industry currency and how an industry currency strategy should be planned, measured and benchmarked (Toze & Tierney 2010). For example, Toze and Tierney (2010) found that industry currency was often confused with industry placement, resulting in a very narrow concept of the range of activities and experiences that can be used to maintain currency. They suggest that there needs to be greater recognition that the currency requirements of individual practitioners often constitute a much more complex combination of activities and are appropriate to the contexts in which they are delivering.

Callan (2006, p.30) provides a more detailed description of currency. He suggests that VET practitioners need to demonstrate the dual identity of being an educational professional and an industry professional; demonstrate technical expertise in their subject areas; possess industry skills and current knowledge, which allows appropriate decisions about the type, delivery and assessment of training; advocate the training requirements of industry to other members of their teaching teams; show familiarity with developments in their industry and knowledge of leading practices and emerging trends in the industry or discipline area, nationally and internationally; demonstrate well-developed networks in their industry upon which they can regularly call; and understand workplaces and their structures, cultures and politics. As a cluster, these capabilities come close to meeting the need for the more expansive notion of industry currency identified by Wheelahan and Moodie (2011) in a study on the quality of VET teaching.

Guthrie (2010), in discussing a range of strategies to develop and maintain industry currency, proposes as valuable approaches: part-time industry work incorporating structured information-sharing with VET colleagues; monitoring local, national and international trends and emerging technologies in the vocational area; workplace training and assessment; industry release; industry projects; maintaining industry licences and registration; study tours and site visits; professional reading; and research and participation in industry networks.

The paucity of high-quality professional development for VET practitioners, however, has become an area for debate and much of the concern has centred on the maintenance of industry currency (Guthrie 2010; University of Ballarat 2009; Toze & Tierney 2010). According to Wheelahan (2010), this illustrates a failure of the Australian VET sector to comprehend the inherent value of supporting VET practitioners in maintaining industry currency. While there may be tacit recognition of the importance of industry currency to the integrity of the VET system, there seems to be a resistance to formalising the process and thus moving away from traditional ad hoc or narrow approaches to this issue (Guthrie 2010; University of Ballarat 2009; Wheelahan 2010). Indeed, researchers have found organisational and industry barriers that militate against successful maintenance of industry currency (Clayton, Fisher & Hughes 2005; Toze & Tierney 2010).

Organisational barriers identified in the literature include a lack of accessibility and planning, work or role intensification, scarcity of time, rigid structures, non-supportive organisational climates,

inadequate budget allocation, outdated policy or work instruction, obsolete resources or equipment, lack of recognition and rewards, and limited availability of specialised VET practitioners to backfill teaching roles (Callan et al. 2007; University of Ballarat 2009; Toze & Tierney 2010).

Industry barriers include a lack of consideration of how best to obtain a meaningful knowledge and/or skills exchange, issues surrounding accessibility and placement opportunities in local industries, and uncertainty about the capacity of the industry to provide access to up-to-date technology, equipment and processes (Toze & Tierney 2010). This situation is often exacerbated by geographic isolation, an ageing demographic profile and institutional settings that are continually exposed to dynamic and rapid change, including technological advancements (Clayton, Fisher & Hughes 2005).

Not surprisingly, these barriers mirror those identified in the professions, particularly where rapid innovation in technology makes previously acquired knowledge and skills transient, outmoded and ineffective (Burack & Pati 1970, cited in Chauhan & Chauhan 2009). Professionals working in information technology and engineering, for example, are confronted by what has been variously described as 'constant technical skills depletion' (Tsai, Compeau & Haggerty 2007) and 'never-ending competence-destroying innovation' (Tushman & Anderson 1986, p.440). For an individual, the impact can be a decreasing interest in or capacity to keep up with changes as they emerge in industry and the erosion of vital working skills and knowledge, with an associated loss of confidence and self-esteem. Some in the VET workforce have been identified as exhibiting similar behaviours, particularly in the case of practitioners who have been distanced from industry for a period of time.

While there are diverse views in the literature on appropriate approaches, the strategies for maintaining currency generally involve undertaking structured learning, including formal qualifications through educational institutions and/or formal or non-formal courses conducted by enterprises and professional associations; accessing informational materials and resources in the vocational field; engaging in work-based learning, including problem-solving, which is generally designed to enhance knowledge and lift productivity in the workplace; and engaging in incidental learning through interpersonal exchange.

Importantly, there are consistent views in the literature that both the individual and the organisation must accept responsibility for ongoing updating, with a number of key factors highlighted that organisations need to consider (Kreiner 2006; Pazy 1996). Chief amongst these are getting the organisational climate right, adopting a strategic approach to upskilling, encouraging collaborative learning and knowledge-sharing and ensuring that updating activities focus on the employees' current job and are 'embedded in the rhythms of daily work' (Knight 1998, p.254).

Regardless of vocation or location, the maintenance of industry currency brings major challenges for individual workers and the organisations that employ them. The literature on both VET practitioners and the professions reveals similar issues. Organisational approaches adopted for the professions signpost a way forward for the maintenance of industry currency of VET teachers, trainers and assessors. Insights from industry may also assist in addressing this issue.

Currency: the trades lens

The review of the literature undertaken for this study revealed little research on industry currency from an employer perspective, either nationally or internationally. In fact, Australia appears to be the leader in research on currency as it relates to VET workforce development and training and assessment needs. With the exception of a few studies such as that undertaken in Queensland by Toze and Tierney in 2010, the voice of employers was not evident in the literature. There was, however, some evidence to suggest that the industry currency of trainers and assessors is of concern to industry (Toze & Tierney 2010; Precision Consulting 2008; Innovation and Business Skills Australia 2010). In light of this, the focus of this component of the research was on employer, auditor and industry representative understandings of industry currency and their views on the importance (or otherwise) of industry currency in vocational education and training. These key stakeholders were also asked to provide ideas about how trainers and training organisations might manage the maintenance and improvement of industry currency.

Interview outcomes

The employers interviewed believed they had a responsibility to keep themselves and their staff up to date through support for staff requests for upskilling and paying for the activities undertaken. Employers spoke about training as being important to the ongoing improvement of client service and customer satisfaction. For the hairdressing employers in particular ongoing training was integral to providing customers with a consistently high quality experience. Also emphasised was the importance of training as contributing to staff satisfaction. Making an investment in training was a way of saying that employees were valued.

All of the employers interviewed took the need for training seriously, noting that it was generally undertaken across the whole business — from management to apprentices. Training was typically paid by the employer and generally undertaken during working hours, unless it was an evening industry event. Employers thought it was important to make time for training and, where possible, such as in the hairdressing industry, to involve everyone in the training, enabling them all to learn together and from each other. One employer commented:

> If there's a new product that comes out, then they [the product supplier] provide training and they have a technician come down here … I will rule out the time for my staff across the page, that's that – we don't take clients during that time. I don't do it after hours; I do it during working hours.

The importance of currency in the hairdressing industry was underscored by two employers who were moving away from traditional training models and moving to skilling up (and qualifying) staff to provide in-salon training for their own staff, including apprentices. This involved assessment and some resources being provided through partnership arrangements with a large private registered training organisation and product developers. This approach gave them greater control over training quality, ensured trainers were up to date and guaranteed top-end training to meet client expectations.

Employers saw it as the responsibility of the VET trainer to keep up to date but considered that it was something that should be supported by their employer.

Industry currency: understandings and indicators

When asked whether they were familiar with the term 'industry currency' in relation to VET trainers, most employers said they had heard of it but that it wasn't a term they generally used. They understood it to mean keeping abreast of the essential knowledge, skills and abilities required to meet the needs and expectations of industry. The employers considered that trainers should know what is needed to teach, be able to answer questions about the industry and have access to the resources needed to teach well.

Importantly, every employer talked about 'industry relevance', which they saw as different from industry currency, and more important. They believed it was more important to have industry relevance, which came from having been in the industry and/or having been trained in the industry. It was expected that trainers would have an industry background and the relevant knowledge. One employer commented that:

> So far as the cutting edge is concerned, that's important too but it's almost like it's in two compartments. Because if you don't have the basics or the foundation, then going to the cutting edge of the industry is nowhere near as effective.

After an explanation of the requirements of the Australian Quality Training Framework and building on their understanding of currency, employers were asked to comment on the adequacy of the framework's description of industry currency and how they might determine whether these requirements were being met. They understood the intent of AQTF Element 1.4 in trying to require industry currency but they were generally more interested in how it was or was not being done. They also believed that trainers must always be able to demonstrate that they possessed industry or discipline-specific knowledge, skills and abilities, complemented by formal industry and training qualifications. In particular, they highlighted the importance of skills such as:

- having knowledge of latest techniques and processes
- possessing a high level of product knowledge
- understanding knowledge of occupational health and safety (OHS) and equal employment opportunity (EEO) regulations
- being customer/client-oriented
- possessing formal industry and training qualifications
- teaching subject content that reflects current industry practice.

Employers considered they could tell if a trainer was up to date from the feedback given by apprentices and the skills their apprentices brought — or did not bring — to the workplace. Equally informative was feedback from other staff who undertook training with registered training organisations. Inconsistent training provision, including the lack of relevance of theory and practice, was also an indicator that the vocational competence and/or industry currency was lacking. There was a general feeling amongst the hairdressing employers that these issues were harder to monitor since hairdressing was no longer a licensed trade. They considered that standards had fallen.

One employer made the point that currency is important, but so is 'history'; that is, industry experience. The employer spoke about industry basics never changing (a sentiment echoed by others) and that once you had acquired them you could build on them. The notion of continuous learning was more evident in the responses of the hairdressing employers, where trends and fashions in the hairdressing industry often moved in cycles and where employees were also dealing with multi-

generational clients who did not necessarily want the latest style. With the printing and plumbing employers there was a notion of 'just in time' currency — topping up when required for new client or industry needs.

Industry currency also played a part in the employers' decision to choose a training provider, with most using a range of criteria. Key among these were the relevant experience and reputation of the training provider in both the training arena and the particular industry; the industry knowledge and experience of trainers; previous testimonials; and the ability to transfer 'real world' skills to the students or staff.

As might have been expected, the auditors had a good understanding of vocational competence as described in the Australian Quality Training Framework. They viewed industry currency as a component of vocational competence but not necessarily as interchangeable with industry competence, which was a broader concept. One auditor described industry currency as being 'the maintenance and extension of vocational competence'. The question of interpreting and applying the requirements of the AQTF Element 1.4 in relation to industry currency, however, was a more vexed issue. Both auditors agreed that trainers and assessors needed to provide actual examples of how they were meeting the requirements. They discussed the need to see evidence of the systems that registered training organisations had in place to ensure that trainers and assessors were undertaking continuous development and the difficulties of confirming this for compliance purposes.

According to the auditors, the ideal situation encompassed identifying a planned professional development activity linked back to what the training provider was delivering and which was informed by a good understanding of the direction in which the industry was headed. However, they indicated that in their experience the situation was often less than ideal.

Like the auditors, the industry skills council representatives viewed industry currency as an element of vocational competency, with one commenting that vocational competence was a deeper level of understanding and experience, one that underpinned a person's knowledge and lasted longer than industry currency. By contrast, industry currency was a more expedient notion: it was something that could be gained or brushed up on relatively quickly, given a strong understanding of the industry. This view was echoed by employers.

From the perspective of industry associations, industry currency was understood to mean that a person possessed good underpinning knowledge, good technical capability and was as up to date as possible with changing practices, new technologies and emerging work patterns. All three interviewees agreed that industries themselves varied in their own currency and many small-to-medium enterprises battled to keep up to date.

The importance of industry currency

All employers agreed that trainers' industry currency was critical in their industry, considering that training providers should be forward-thinking and assisting business to take a broad industry view. One employer described the local TAFE (technical and further education) institute as leading the employers (plumbers) with new practices. Industry currency also gave learners, clients, business owners and the industry a sense of confidence in the reputation of a training provider and its trainers.

Possessing trade-specific knowledge was seen as vital for trainers, particularly in the licensed trades, where knowledge of current rules and regulations was essential for ensuring that apprentices were well prepared. Similarly in hairdressing, knowledge of the latest styles, processes or methods in hairstyling and product knowledge enabled a trainer to demonstrate credibility with learners and salon staff.

Employers also considered it was important to understand the broader aspects of the trade, as they sometimes sought advice from trainers on a range of issues not necessarily directly related to training.

On the question of whether, on engaging a trainer, the employer asked about their industry knowledge, the hairdressing employers were more likely to show concern in this area. Three of the five indicated they asked about industry knowledge and provided examples of the information they sought. This included a summary of the trainer's salon, industry and trade show experiences, and information about their product knowledge. Nevertheless, industry knowledge was important for the licensed trades, with one of the plumbing employers describing it as a 'matter of faith', suggesting that the registered training organisation was a professional organisation and would, therefore, employ people with up-to-date qualifications and knowledge.

Auditors considered industry currency (or the lack of it) to be a significant risk factor for audit compliance, particularly for the assessment of training. Trainers and assessors with a limited understanding of how the industry operated would be unable to ensure that training was relevant and that the assessment met the needs and standards of industry. The auditors considered that the ability to exercise professional judgment in assessment would be compromised by a lack of currency. And while registered training organisations were 'getting better' at understanding these issues, there was still a long way to go, particularly when trainers had been out of an industry for a long time.

Professional associations agreed that the industry currency of trainers was important but saw it as only one of a number of competing issues, agreeing also that industry currency and trade-specific knowledge were important.

When asked whether the degree of importance of industry currency depended on the type of training being undertaken — training an apprentice, for formal or informal qualifications, or for a clear vocational outcome — employers agreed that the same level of importance applied to all types of training. One employer spoke about trainers' industry relevance being of vital importance for apprentices because they needed to be supplied with the most up-to-date information. In general it was considered that all training should be conducted by the best trainer available, particularly as training was done during work hours and employers needed to get value for their time and money.

Technological innovation and keeping pace with change

Employers were asked about the influence of technological change on the way their industry operated and its impact on trainer currency. The responses reflected distinct industry differences. The hairdressers, for example, considered there had been limited technology-driven change in their industry. The key drivers of change were more aligned to styling techniques, product innovation and consumer trends. In the plumbing and printing industries changes in technology were having a greater impact and were creating gaps in the currency of those in the industry as well as trainers. Technological change in these two industries was also creating new industry sectors, along with the need for qualified people to become trainers in them. However, despite these changes it was still the view that the basics of the industries remained the same.

By being exposed to new products and equipment, employers and those who worked for them kept current through their everyday work. Web searches and trade magazines and product suppliers/vendors who provided product information, trade events and product launches also ensured their currency. Several employers discussed membership of industry associations and how this kept them up to date with important information via email and/or through industry magazines, by providing useful information about industry trends and changes. One employer said:

> It's difficult to keep pace even if you are in the industry. You can't know everything, you just need to know where to go to get the up-to-date information if you understand the industry; new trends and knowledge can be picked up and applied quickly on a client-to-client basis. You have to know your stuff if you are talking to a customer/client.

All employers agreed that not being able to meet the customers' needs and expectations because they were not current could have a significant impact on their business. Asked how a registered training organisation or trainer could assist with keeping them up to date employers had no definitive view but they thought that it was not necessarily something a registered training organisation could provide, especially as they were dealing with the same need to keep pace.

In relation to trainers, one employer said it was 'not feasible' for trainers to be current, because 'they have to meet the needs of so many different employers and they can't know it all'. Another mentioned the issue of trainers being 'too current'; that is, being in advance of what is required of a business which operates with 'less than current technology'. Another spoke about there being an acceptable level of 'lag' and that currency was not critical.

By contrast, the auditors when asked about their expectations of the capacity of trainers or assessors to keep pace with changes in industry were quite clear. While acknowledging the difficulties in keeping up with technological and other changes, the auditors had very high expectations about the capacity of trainers and assessors to keep abreast of changes to industry regulations and the regulatory requirements in the training sector. Having current knowledge was considered paramount and registered training organisations needed to understand that change was constant. Providers also needed to be aware of whether their staff were keeping up with changes. Auditors expected that registered training organisations would be proactive in this area and have a strategy for identifying gaps in staff currency, also providing evidence of how these gaps would be addressed.

The industry skills council interviewees expected that trainers should be able to keep pace with industry changes and commented that the skills councils played a role in assisting through the release of industry information on websites and information sessions relating to their annual industry environment scans.

All three interviewees from industry associations spoke about the technological changes affecting their industries and the necessity for trainers to keep pace with these. Failure to do so could put clients at risk of learning irrelevant material and could also lead to a lack of trainer credibility. Very real risks to the personal safety of students and of clients and a failure to meet industry standards could also result from outdated regulatory information, training instruction and equipment and resources. One interviewee, for example, commented that an Energy Safe Victoria audit of training providers had identified incorrect regulations being used, a lack of consistency in information and a failure to meet industry standards.

Strategies for maintaining industry currency

All participants were asked to consider a list of common strategies used by trainers (or often suggested as effective methods) for maintaining industry currency; they were then asked to give their opinion of the value of the strategies as applied to their industry. These strategies were:

- consultations with industry
- continuing to work in industry
- keeping abreast of regulatory changes and/or occupational licensing requirements

- mentoring apprentices
- participating in industry release/return to industry/shadowing
- participating in formal (accredited) and/or informal (unaccredited) training or professional learning
- belonging to a professional/industry association
- accessing trade journals/online research
- participating in research projects
- belonging to individual industry/employer networks
- attending trade days/exhibitions/conferences.

There was a great deal of consistency amongst the responses across the three industries in these suggested strategies. Employers prioritised the six areas they believed were most important for maintaining currency. Importantly, they considered that the activities they undertake themselves to ensure currency were valuable for trainers as well.

They rated interacting with industry and continuing to work in industry (where possible) as high, but actual industry release was generally held to be of lesser value, with some believing it was not always appropriate for small and medium enterprises, while the logistics of organising it in industries such as plumbing were seen as difficult. Mentoring apprentices was valued highly for the opportunities it gave employees to share their knowledge, to ensure their knowledge was up to date, and to learn from the apprentices' learning.

Participating in formal (accredited) and/or informal (unaccredited) training or professional learning was also highly regarded by employers, with great importance assigned to the professional learning provided through product technicians and vendor training.

For the majority of employers the most important strategies were reading trade journals, online research and attending trade shows or exhibitions and conferences. These strategies were used substantially by the employers themselves. One employer commented that the fashion industry drives the hair industry and so being aware of trends in the wider industry was crucial (especially the international scene). Employers considered it was very important to see trainers at trade days, exhibitions and conferences, as these were 'the cream of events' for professional learning. Meeting trainers at these events gave employers the confidence that trainers were interested in broadening their own knowledge and thus transmitting it to those being trained.

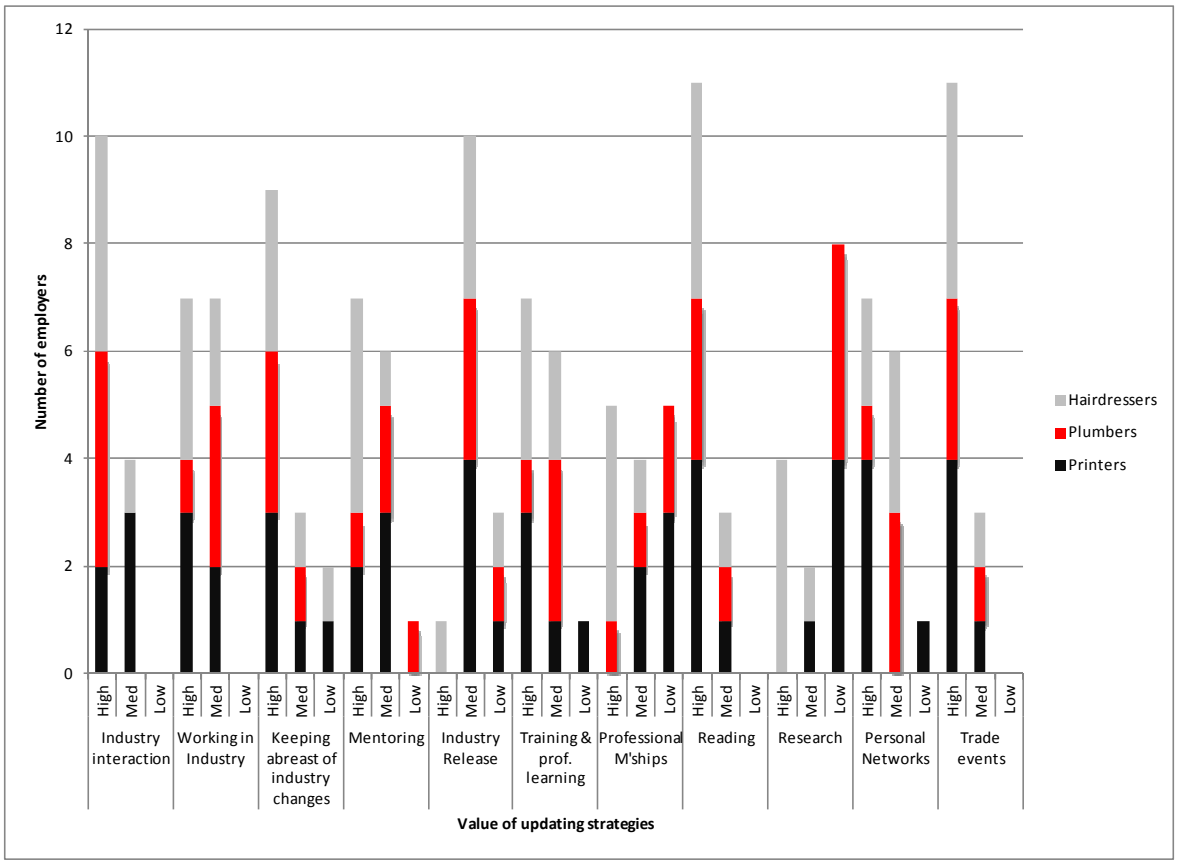
Although the majority of employers were members of a relevant professional or industry association, this was generally rated as being of medium-to-low value by employers across the three industries, although a number of them qualified this by explaining that its value depended on whether the association was proactive in training and the extent of their participation in the association. As an interesting aside, one printer who specialised in plastic labels for the horticulture industry mentioned that they had no involvement with their own industry association because the business was with nurserymen and it therefore was more important for them to be involved with the nurserymen's association.

The type of training that employers arranged for apprentices was mostly formal, with more informal on-the-job training, short courses, product training, trade training presentations and demonstrations for the more experienced staff. Vendor and product-specific training was very important in all of the

industries, and where possible employers worked closely with suppliers and product developers to make sure they were current or ahead of the trends and changes in products. This was particularly relevant in the hairdressing industry, where product suppliers and product technicians were used for the provision of salon-based training.

Figure 1 provides a breakdown of employer ratings of the value placed on various updating strategies within the hairdressing, plumbing and printing industries.

Figure 1 Employer ratings of value of updating strategies



The auditors saw the value in many of the strategies used by trainers for maintaining their industry currency but they placed greater value on those with direct links into industry, such as industry consultations, continuing to work in industry, industry release and participating in formal and/or informal training or professional learning. Both spoke of the difficulty of 'proving the value' of some strategies that appeared to them to be more superficial. For example, it was often difficult to get a real sense of the value trainers and assessors got from some activities such as online research, reading journals and magazines. They acknowledged that they could be valuable strategies but only to the extent that the trainer or assessor could demonstrate how the knowledge they gained was applied. By contrast, these and other activities such as trade fairs were accepted without question by employers, who considered them a highly effective way of identifying what was new in industry and for networking with peers.

The auditors also considered industry association membership could be important where continuing professional development (CPD) needed to be demonstrated to ensure membership but was less important if it entailed a subscription only. They saw the need for a more structured approach to professional development that went well beyond initial qualifications such as the Certificate IV in

Training and Assessment. This included the concept of a professional association for trainers that included requirements for professional development as a condition of membership.

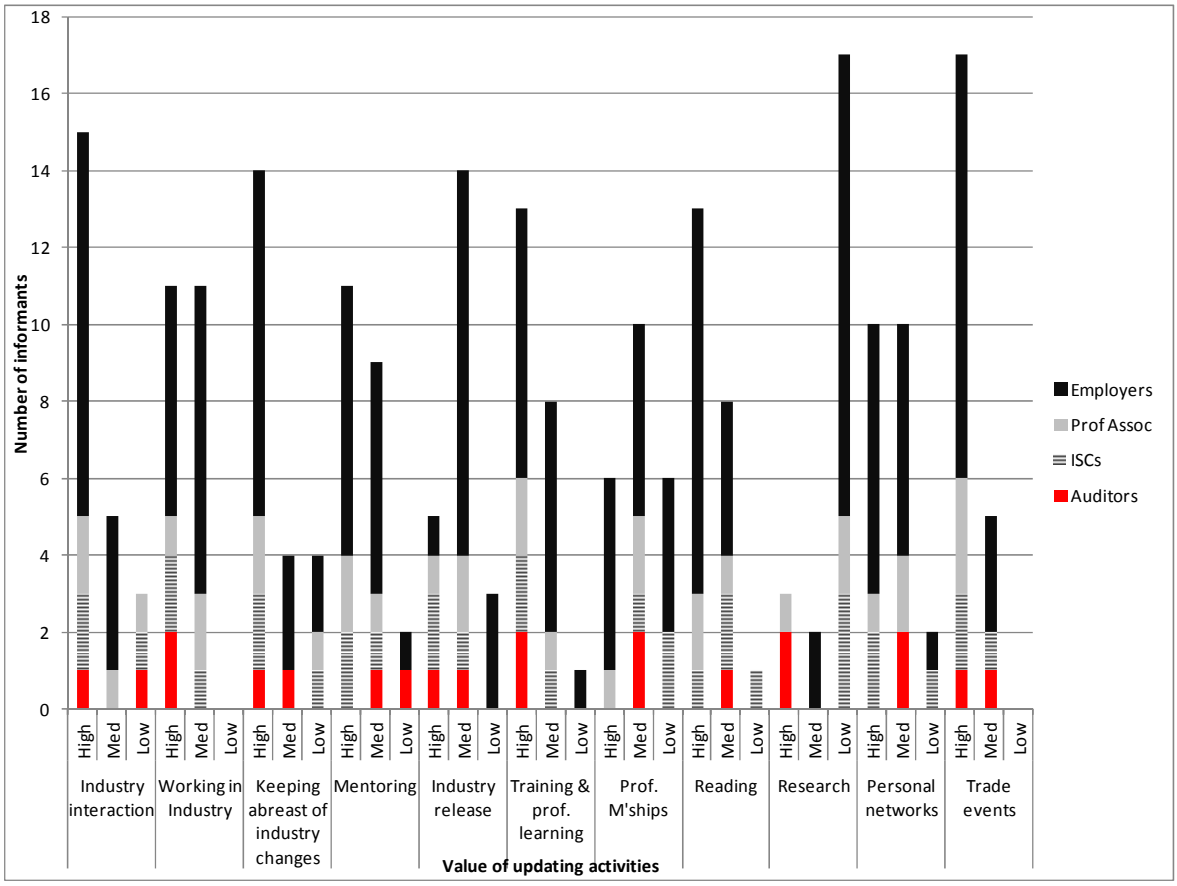
In general the views of industry skills councils were relatively consistent, with only minor differences in the value placed on strategies. Strategies that kept trainers actively engaged with industry were rated highly, whereas the more 'passive' strategies such as membership of a professional or industry association or research projects rated much lower. Reading trade journals or online research was considered to be of medium importance. As would be expected, the two industry skills council representatives for the licensed industries gave high relevance to keeping abreast of regulatory changes and/or occupational licensing requirements.

All interviewees pointed to the importance of participating in formal and/or informal learning, also observing that industry 'owned' or driven training, such as that organised through industry groups and vendor and product training, was likely to be more highly regarded by industry. Indeed much of the training that takes place in all three industries was provided by equipment suppliers, product manufacturers and/or vendors.

The professional associations also tended to favour strategies that put trainers into actual contact with employers and industry; for example, continuing to work in the industry, mentoring apprentices, and industry networking, including through membership of industry associations. Professional associations largely kept their members current by offering training, providing training advice, and providing professional development activities such as trade shows and conferences.

Clearly, employers, auditors, industry skills councils and professional association representatives had divergent views about the value of various updating activities. Figure 2 highlights these.

Figure 2 Comparative analysis of ratings: all informants



What else might assist in maintaining currency?

The interviewees, who were well informed about training, were asked whether there was anything else that could be done to assist trainers and registered training organisations to maintain industry currency. Most had participated in industry consultations relating to training or were on industry skills council committees or committees with professional associations. Five employers had close involvement with their industry associations, while others had been involved in demonstrating products and discussing trends at trade shows as well as speaking to TAFE apprentice groups.

Employers considered that a registered training organisation or trainer should be proactive in asking for assistance in maintaining currency. A significant number however reflected similar views to the following comment:

> No, I have not been approached by the local public TAFE institute or private provider to assist with the professional development for VET trainers. However, I would not hesitate to assist if the salon was approached.

Employers also proposed a range of strategies to assist trainers to remain current, such as mentoring, workplace shadowing, scholarships or awards providing continuing professional development opportunities, speaking at TAFE professional development days, and assisting with trialling new technologies. One employer suggested, by way of example, a network of employers who would give trainers the opportunity to have on-site experience.

Employers indicated that small-to-medium enterprises may be limited in what they could do but would cooperate if they could. They also mentioned that their industry associations could (and did) play an increased role in running professional development activities and industry briefings for trainers.

Professional associations recognised the importance for them to have a good understanding of the training system, a good knowledge of the providers in it and effective networks to link to their members' training needs. They considered it was in the interests of their members to assist trainers and training providers to understand the industry and to support them where possible with the professional development of trainers. They therefore actively encouraged trainers to take advantage of the professional development opportunities that associations offered.

Industry skills council representatives suggested that their industry sectors were proactive, and gave examples of training staff exchange activities between organisations such as a TAFE institute and the Plumbing Industries Climate Action Centre and industry initiatives such as the Australian Hairdressing Council, which was formed to promote professionalism and training in the hairdressing industry. They also agreed that their role was to promote industry currency to providers. While they did not necessarily have a role in providing professional learning activities for trainers and assessors, they encouraged trainers and assessors to take the opportunities provided through industry skills councils' industry consultations and events to get closer to industry.

Industry skills councils also assisted with professional development activities related to delivery and assessment (although these tended to focus on educational aspects rather than specific industry activities), information sessions on training packages in specific industries, and initiatives such as the Right Way Program developed by Service Skills Australia, which provided industry recognition across the industry sectors (including hairdressing) of quality training and assessment facilities, quality trainers and assessors and quality learning resources.

All industry skills council representatives indicated there was no lack of goodwill in industry to be involved in assisting trainers to update knowledge and suggested they were regularly involved on a

one-to-one basis with trainers when asked. There was, however, a view that registered training organisations needed to be more proactive in seeking opportunities to engage with employers. The responsibility for this rested with the providers not the employers.

Summary

The key stakeholders interviewed in this component of the research were asked to focus their attention on the industry currency of trainers in the VET sector and to suggest how currency might best be maintained. All acknowledged that this was a critical and challenging issue and one that needed to be addressed by trainers and registered training organisations if training was to meet the needs of industry. Building on their training in industry and a strong background of working in industry, ongoing close engagement between trainees and enterprises and involvement in industry networks and events were seen to be the most useful ways for trainers to update their industry skills and knowledge. Importantly, all informants considered that maintenance of industry currency was a responsibility that both trainers and registered training organisations shared.

Currency: the professional lens

For this aspect of the study, the literature on what is termed 'professional obsolescence' was examined (see appendix A in the support document). Although a theory of occupational obsolescence was first formed around the 1930s (Tugwell 1931), the term first appeared in the literature in the 1960s (Mahler 1965; Ferdinand 1966; Rothman & Perrucci 1970). Since that period a significant amount of research has been undertaken that examined obsolescence in a range of professional domains. In clarifying the term, Chauhan and Chauhan (2009, p.1) asserted that 'the most commonly subscribed definitions of obsolescence are those related to job performance', whereby there is 'a discrepancy between job performance and an expected level of competence which incorporates new knowledge being introduced into a profession'. This condition occurs when the technical skills and domain knowledge of an individual no longer match the performance standards required in the workplace.

Much of the research on the topic has emerged from fields such as engineering, information and communications technology (ICT) and management — all fields where technological change has demanded the ongoing development of new skills, new knowledge and new ways of working. Without ongoing nurturing, skills and knowledge can fade or become obsolete, a concern for professionals (and VET practitioners).

While much of the literature examined focused on the reasons why obsolescence occurs, numerous studies also investigated possible strategies for addressing this issue from an organisational perspective. The nine organisations from the engineering, health, human resources and science sectors in this study were all confronting the challenge of professional obsolescence and had adopted a variety of approaches to keep their highly skilled workforces abreast of emerging industry trends.

Questionnaire outcomes

The literature suggests a number of organisational factors that influence whether individuals keep their vocational skills and knowledge current. Chief amongst these is the presence of an organisational climate in which updating is encouraged. The second relates to organisational encouragement of knowledge-sharing amongst employees, the third factor relates to having policies in place which reward those who continue to learn and the final factor encompasses ensuring that appropriate updating activities are available for staff.

To establish baseline information about participating organisations, learning and development managers were asked to provide ratings against 25 statements prior to interview (see appendix D in the support document). These statements mirrored those used in a study on ICT professionals by Blanton, Schambach and Trimmer (1998, pp.4—19) which addressed various organisational factors. A summary of findings for each factor follows.

Organisational updating climate

Of the nine organisations, all strongly agreed or agreed that their organisation openly encouraged the growth of its professional workforce; however, policies in more than half of them did not explicitly stress the importance of keeping current with industry knowledge and skills. Rather, the emphasis tended to be on high professional standards in all of the workplaces and, as they were knowledge-leading organisations, most managers suggested that innovation and technological change were

enthusiastically received and constantly expected. In every instance, the organisational climate for maintaining currency was rated as highly encouraging.

Information exchange

In every case, cooperation between professionals was seen to be an accepted workplace activity. In Professional Research Services, Energy and Resources Agency, EngineeringCo and ERC Health in particular, it was confirmed that professionals shared working knowledge, especially when dealing with unfamiliar technical aspects of work. Colleagues discussed articles on work-related topics and acted as technical sounding boards for peers, with information exchange the norm across all organisations. According to the managers in the science and human resource organisations, a concern for the protection of proprietary information restricted interaction with professionals outside the organisation.

Rewards policy

The statements relating to a rewards policy elicited more diverse responses. While up-to-date professionals in Professional Research Services, EngineeringCo, CM Consulting and ERC Health had the best opportunity to obtain promotions, the Statewide Health representative offered an opposing view. For the others, currency was deemed to be a possible factor in gaining promotion. Similar ratings were provided for the statements 'This organisation has a performance appraisal system that rewards professional proficiency' and 'Employees who keep up-to-date on new technology/knowledge are well rewarded in this organisation'. Statewide Health alone registered 'disagree' responses against these statements, indicating that this organisation did not have a rewards policy in place.

Updating support

Regardless of industry focus, managers either agreed or strongly agreed that employees were encouraged to use work time for updating skills and were provided with support to undertake developmental activities. Time was also provided for undertaking qualifications, with a 'strongly agree' response being registered by five organisations. Most also agreed that fees for further study were reimbursed by the organisation.

Only EngineeringCo disagreed that they provided 'high quality in-house development activities for professional staff'. And, while the Innovative Engineering Solutions manager disagreed that 'The organisation limits training opportunities for its professional staff', every other response registered agreement. Performance management processes in all firms provided supervisors with the opportunity to identify developmental opportunities and assist in developing learning plans. Strategies were also in place for recognising those who consistently availed themselves of learning opportunities and there was general agreement that job roles were designed in a way that allowed professionals to explore and innovate.

It was clear that the nine organisations had environments that offered significant support for updating activities. Actively encouraging the exchange of work-related information, they supported and rewarded those who took advantage of the opportunities offered to keep up to date with shifts in technical knowledge and skills, with two organisations in particular having extremely strong strategies for 'keeping ahead of the game'.

Interview outcomes

Across the organisations, currency was generally described as 'being up to date' — keeping abreast of industry-specific technical innovations as they emerged, as well as demonstrating the competencies of the job role to the standards set by the profession.

The health organisations provided reasonably consistent responses when defining what being current meant. In Statewide Health it was 'being able to perform their role competently while delivering the highest standards of patient care and eliminating risk of malpractice'. The ERC Health view focused on individuals keeping abreast of modern treatment methodologies and having an understanding of current developments within the specific discipline both in Australia and overseas. For Global Heath it was 'making sure they have the current knowledge and the current theory'.

As high-profile knowledge-leading organisations, Innovative Engineering Solutions, Professional Research Services and the Energy and Resources Agency placed great emphasis on industry currency and professional competence. Updating was actively encouraged, discussed often and measured within each organisation. It was noted in relation to Professional Research Services that:

> We are leading edge so we are constantly seeking to push the boundaries. That's what we do. We measure our performance in terms of being up to date by citations in leading scientific publications, the number of publications people produce, the number of citations and the number of awards that people win.

Drivers for maintenance of industry currency

The standards set by professional bodies were nominated by all learning and development managers as influential in motivating professionals to keep current. The need to meet the annual continuing professional development requirements for ongoing membership of professional associations was cited as an important driver, albeit one that was personally driven. Regulations, licensing and technological advancements were also seen as powerful imperatives.

Regulation and licensing

The influence of regulation or licensing on the maintenance of currency differed according to industry focus. For CM Consulting, regulation was important for the financial aspects of the business, while for the engineering firms, the need to provide evidence of currency was integral in the development of design proposals; for example, many of the products developed by Innovative Engineering Solutions were in the highly regulated biomedical instruments and devices field.

Unlike in health, where respondents emphasised the critical nature of regulation in driving staff upskilling activity, neither regulation nor licensing was influential in the science-focused organisations. Professional registration meant individuals were required to undertake a minimum number of hours of training each year and maintain records of activities undertaken. To ensure an ongoing focus on capability-building in the health workforce, the Australian Health Practitioner Regulation Agency conducted random audits of continuing professional development records. Thus, legislative and regulatory frameworks and standards for health professionals demanded that people kept up to date.

Quality patient care was also a key factor in the maintenance of industry currency. Emphasising this, the Global Health respondent suggested 'we try to factor in more than the basic training by looking at "what is an ideal nurse?" and "what is exceptional care and safety"'. Alma Health provided a similar

response: ‘The primary driver is patient safety. The primary driver is to have clinically competent staff on all shifts to provide safe patient care’.

Technological innovation

Technology was seen as a prime motivator for updating by the majority of the learning and development managers in knowledge-based organisations. The Professional Research Services response emphasised that, as innovation was ‘core business’, keeping abreast of worldwide advances in science was a crucial component of scientists’ work. To remain at the cutting edge of the profession and to meet the goal of encouraging the uptake and application of the organisation’s innovations meant that updating was essential. Similarly, for the Energy and Resources Agency, keeping pace with technology was an ever-present organisational and individual imperative.

> They [the scientists] want to be at the cutting-edge every minute. They are technologically hungry because that is the enabler. It is the technology that enables science.

Similarly, CM Consulting and EngineeringCo viewed keeping technologically current as a means of ensuring positive client outcomes.

In the health arena, technological advances in new surgery techniques, medical diagnostic equipment (software and systems) and innovations in patient care were constantly evolving. In light of this, Statewide Health considered this as just as powerful a driver for maintaining currency as regulation. This view was mirrored by the other health-based learning and development managers.

The criticality of industry currency

In answering the question ‘How critical would you say having an up-to-date workforce is to your business?’, responses consistently emphasised that having updated skills was crucial. The ERC Health response was:

> It’s absolutely imperative not only for our patient outcomes but also for our integrity, our reputation and staff satisfaction. They perform better if they feel like they’re up to date with current trends in treatment.

Further, it was suggested that any obsolete skills amongst the ERC Health staff would lead to an erosion in reputation and respect amongst colleagues and those who referred patients to the organisation. Obsolescence would signal an increased potential for poorer patient outcomes and could impact upon community confidence, open up the service to litigation and lead to a lowering of standards and quality care. For Global Health, the commitment to currency of knowledge and skills was a business imperative: ‘safe care leads to lower insurance premiums and ultimately higher profits’. For Alma Health, a private health service, it was about patient satisfaction as much as patient safety. Having an up-to-date workforce was an essential element in the achievement of both goals.

In EngineeringCo skills obsolescence was manifested in the form of ‘rework’, that is, correcting defective work. With slim margins on projects, if a contracted job failed, then the profit margin was lost. In summing up, it was suggested that ‘there is a very strong correlation between low skills and rework and clearly such outcomes impact upon productivity’.

In Innovative Engineering Solutions, a lack of industry currency was not seen to be an issue, although it was acknowledged that the impact on the individual engineer would most likely be significant: ‘they would find that they would be limited to the types of projects they could work on. Project leaders would not choose or ask them to join project teams’.

In the two science organisations, scientists had to be able to deliver reproducible data with significant impact for governments, industry and the community. This required them to be totally 'on top of the latest science'. As both organisations were working in the critical areas of natural resources, energy and climate change, being current with the latest in the field was critical, particularly given the environment in which they operated had intelligent stakeholders who were sometimes very aggressive in their criticisms.

Organisational support of upskilling

Managers were asked to describe how professional staff were supported in maintaining industry currency. Of particular interest was the extent to which organisational capabilities and individual competencies were analysed and the strategies used to keep employees at the cutting edge. Research on the management of skills obsolescence suggested that rewards and incentives encouraged individuals to continuously update, but what sanctions might be imposed by these organisations for those who did not? Also, whose responsibility did learning and development managers consider was it to ensure staff were current?

Maintaining currency: whose responsibility?

Generally managers agreed that responsibility for maintaining currency should be shared between the individual and the organisation. However, there were some variations in the allocation of responsibility. Statewide Health, Global Health, ERC Health, CM Consulting and Innovative Engineering Solutions assigned responsibility equally: 50% with the individual and 50% with the organisation. It was agreed that currency could only be maintained if the organisation and individuals worked together. In the case of ERC Health, the view was that management's role was to identify a training need and provide support. The individual's role was also to identify training needs, to identify a training opportunity and to participate in training. In a similar vein the Alma Health manager suggested:

> There's no way that an organisation could not fulfil that responsibility [but] it's much more effective when there's an internal driver, when the person feels the responsibility for that primarily as opposed to 'this organisation owes me'.

This idea of an internal driver was also raised by Innovative Engineering Solutions, with the manager noting that, while some engineers proactively initiated discussions about learning opportunities for themselves, others were more passive. In allocating 80% of the responsibility to the individual, the EngineeringCo respondent also commented that 'unfortunately there are some that believe that it is the company's job to keep them up to date'.

By way of contrast, Professional Research Services and the Energy and Resources Agency accepted a high degree of organisational responsibility for updating. Employees needed the skills to engage in leading-edge work and to be willing to seek them out if they did not have them, which they generally did. Both managers said there was a high level of drive amongst their employees, who understood that they were making a difference and wanted to continue to do so.

Confirming views expressed in the literature about the importance of organisational culture and climate, the CM Consulting learning and development manager suggested:

> Technical excellence is embedded throughout the culture of our organisation. There's no question about that. It's one of the bedrocks of this organisation, so it is absolutely critical to the way we do business.

Incentives, rewards and sanctions

Both science organisations had reward and recognition policies with annual awards ceremonies at which high achievement was acknowledged. Overseas conferences were also used as a means of rewarding those who stayed professionally current. Both measured people's capability, and scientists were identified by their standing in a specialisation. Peer review was viewed as a powerful mechanism for recognition, particularly as it was an accepted practice in the sciences and embedded in the scientific culture.

For the engineers, promotion and broadening opportunities for projects were major incentives for keeping abreast of innovations, while bonuses provided incentives for employees in both CM Consulting and Innovative Engineering Solutions. Awards, promotional opportunities and payment of educational expenses were motivators in the large health organisations. However, for the smaller ERC Health, promotional opportunities were limited; hence, financial support to undertake training was the major incentive.

Although there was general agreement that most professionals availed themselves of opportunities to update, it was acknowledged that this was not always the case. Informants outlined the management processes for dealing with individuals whose skills were fading, with mandatory training seen as the key strategy for addressing this issue in the health organisations. Staff could not undertake a clinical workload until the required standards of competency were achieved. Performance management was the solution for Alma Health staff who did not undertake and complete training. Beyond that, staff could be required to leave the organisation. Similarly, within the Energy and Resources Agency individuals unable to stay current 'may be encouraged to move on — to look for employment elsewhere'. This rarely happened, however. Anyone in CM Consulting refusing to undertake mandatory training to keep current was deemed to be in breach of contract and open to dismissal.

Older professionals in EngineeringCo were encouraged to pass on their 'tribal knowledge' to the less experienced. This sharing of long-learned wisdom had dual purposes. The first was to build expertise in the mentees and the second was to ensure the mentors kept current with the innovative project approaches being used by the firm.

The response from Professional Research Services provided a markedly different perspective. While it sometimes occurred that a scientist's skills began to erode, more often than not it was that some areas of science became obsolete. This had a significant impact upon the organisation's work. If an area of science became less important and ceased to be an organisational focus, the individual would be deployed, even when performing well. In a negotiated process, the organisation accepted a high level of responsibility for retraining and upskilling people.

Organisational strategies for maintaining currency

Because they were dedicated to maintaining a competitive edge, all organisations regularly analysed their capability. The organisational skill profile was routinely assessed and appraisal of individual performance occurred annually. Learning plans were negotiated and both informal and formal training were designed to build expertise and keep people's skills aligned to the emerging business needs. Updating opportunities generally included both in-house and external training programs and all interviews revealed a clear focus on the critical organisational factors identified in the literature for managing skills obsolescence. There was a marked emphasis on maintaining an organisational climate that supported ongoing professional learning and a highly strategic approach to skills acquisition. And at the heart of all organisational approaches was a focus on collaborative learning in the workplace.

Updating: the strategic imperative

Above all others, Professional Research Services provided the clearest evidence of updating as a strategic imperative. Broad direction-setting determined the major scientific focus for the near future and employee skills were examined to gauge the implications of any shifts in direction. Training covered current jobs as well as having a 'strategic future-thinking thrust'. The Energy and Resources Agency also undertook a strategic 'three-yearly journey' to look at its skills profile. This was accompanied by an annual reflection on business changes and any new scientific thinking. Such an approach ensured new areas of scientific inquiry could be captured in the training activities the organisation provided.

The strategic approach of ERC Health, a small organisation, involved formal benchmarking of professional practice, the outcomes of which set training objectives for the immediate future. By way of contrast, the multinational Global Heath had undertaken a national analysis to establish business directions and future education needs. A national mandatory training framework was developed as an outcome of this process.

Collaborative learning and knowledge-sharing

Projects made up the major work in Professional Research Services, the Energy and Resources Agency, CM Consulting and Innovative Engineering Solutions and provided fertile ground for team-based learning and the sharing of critical knowledge. Formal and informal mentoring formed part of all organisations' upskilling strategies. Informal mentoring occurred during project work and involved the highly experienced working with the less experienced and professionals with different skills working together to extend their knowledge bases. Both mentoring and coaching programs were available to all scientists in the Energy and Resources Agency, with individuals also able to access external specialist coaches. The cost of up to five visits to these coaches was borne by the organisation.

Within the science organisations, networking with experts was viewed as an essential strategy for sharing their own cutting-edge research while keeping up to date with new science emerging elsewhere.

As professionals in EngineeringCo were dispersed across the country and beyond, opportunities to share information and work through solutions to project problems generally meant face-to-face workshops. Although a high-cost activity, the exercise was seen to be immensely valuable. Further, engineers were encouraged to learn from the project resources housed in the intranet-based 'Centres of Excellence', which contained information on all projects, including those determined to be 'train-wreck cases'. Problem-based learning using real-life scenarios was a prominent feature of Statewide Health's updating activities, along with webinars, peer review, in-service sessions, professional conversations, research and workplace coaching.

Updating strategies in CM Consulting included the use of social media, described as 'a bit like Facebook for a corporate environment, which can be used for knowledge-sharing'. Within the firm there was a clear expectation that people would use social media tools to keep technically current. Further, employees engaged in training outside the company were required to share the latest developments with colleagues through informal group learning. Considerable emphasis was also placed on on-job learning.

Learning in and through work

Managers were unanimous that learning through the day-to-day work was a key factor in keeping people current. For the engineering, science and human resource professionals, project work challenged and extended their skills and knowledge. Projects created opportunities for learning that

formal training could often not achieve. In confirming this, many managers commented that they used the 70-20-10 approach to learning. Thus, within many of these organisations 70% of the learning was occurring on the job, 20% was undertaken through observation and working with coaches and mentors, while the final 10% was formal training undertaken in classrooms. The EngineeringCo manager spoke of employees as 'worker—learners', while the value of work-based learning was summed up for the Energy and Resources Agency in the following way:

> When you are a learner you are open to asking more questions, you are open to more feedback. These are the great benefits of being a learner on the job. You are also more likely to collaborate when you are learning on the job.

A key focus for CM Consulting was ensuring that access to appropriate coaches and mentors was readily available and that individuals were getting the critical on-the-job experience they needed to reach the required level of expertise.

Just in time, just for now

A number of learning and development managers commented that professional staff often undertook 'just in time' training, which was largely driven by client demands and types of projects. The Innovative Engineering Solutions manager explained the reasoning behind this: 'When we are faced with projects that are first of a kind, our team need to demonstrate to our clients that they can quickly come up to speed to be an expert in the field'. While many engineering skills remained the same, other new knowledge and skills had to be learned relatively quickly to fulfil project needs. Training content was generally determined on a project-by-project basis. In CM Consulting, for example, changes to business processes required speedy updating responses to ensure that individuals were current in the competencies required to retain leadership in the field, 'we look to have as much as we can "just in time", ensuring that our people get through the right technical training at the right stage of their career'.

Training in new technology in ERC Health involved the use of 'champions': intensive training was provided to one individual who was then responsible for training others. This approach avoided the costs associated with mass training or backfilling and ensured that new knowledge was rolled out rapidly in the workplace. Video-conferencing also assisted the spread of new technical knowledge across the organisation. Global Health nurses had a mandatory 20—30 hours of professional development per year, most of which was delivered through the company's training institute. Online education linked people to recent journal articles and videos and new knowledge, while the enterprise's social network, Yammer, facilitated training-related discussions amongst professionals.

Summary

The information gathered from the nine knowledge-based organisations included in this research mirrors that presented in many of the studies on professional obsolescence examined in the review of the literature. Constantly changing technology and business imperatives demand that these professional workforces remain abreast of developments in their fields of expertise and all organisations accepted a high level of responsibility for supporting ongoing professional development in its diverse forms. The strategies for keeping current outlined by the participating learning and development managers also closely align with those identified as critical by key writers on the subject (Pazy 1996; Trimmer, Blanton & Shambach 1998). Various aspects of the approaches for maintaining industry currency adopted by these organisations have definite applicability to Australia's VET organisations and the trainers and assessors that they employ.

Conclusion

Maintaining industry currency should be seen as a critical area for the development of all VET practitioners, who play a crucial role in skilling the Australian workforce. While many practitioners continue to hone their industry skills and knowledge and operate with great effectiveness in industry, others do not. Despite the Standards for NVR Registered Training Organisations requiring demonstrable evidence of industry-specific developmental activities being undertaken by practitioners, training organisations have struggled to find effective ways to support and resource the development opportunities required to maintain staff currency. As a consequence, there is growing concern about the capacity of training organisations to deliver the skills required by the economy. The presence of technically obsolete teachers, trainers and assessors in the sector has significant implications for learners and industry, with productivity, credibility and learning quality all potentially affected.

Currency: through different industry lenses

Focusing on the plumbing, printing and hairdressing trades, this research explored employer, auditor and industry representative views on industry currency and how it might be developed and demonstrated by VET trainers and assessors. At the same time, the study examined how a sample of high-performing knowledge-intensive organisations ensured the currency of the working knowledge and skills of their professional workforce through the management of skills obsolescence.

From the trades perspective, the term 'industry currency' was not one familiar to the employers interviewed. They spoke of 'industry relevance' as being of paramount importance, defining it as a good grounding in the industry, gained through having worked and been trained in that industry. As the principles underpinning plumbing, printing and hairdressing had not changed, updating industry knowledge was not seen as a major issue, even where changes in technology, products and customer demand had occurred. What was most important for VET trainers, employers considered, was a thorough grounding in the industry.

However, currency was identified as an important aspect of VET practitioner capability by auditors, employers and industry representatives. Employers liked the idea of trainers being up to date, but did not think it reasonable to expect them to be fully abreast of all developments, especially where industry directions, developments and trends are constantly shifting. Employers also suggested that it was a 'matter of faith' that trainers would be well prepared and that they expected registered training organisations to be professional organisations that employed the 'right' people.

The plumbing, hairdressing and printing employers all expected to keep themselves and their employees current and accepted responsibility for updating activities. In light of this, they considered it appropriate that upskilling activities took place during working hours, with any costs incurred borne by the employer. Similar views were expressed by the learning and development managers in the knowledge-based organisations, who also emphasised that a good deal of upskilling could be undertaken during working hours and in the conduct of work. This idea of learning on the job was consistently reinforced by those in the trades.

While regulation and licensing were seen as important drivers for keeping up to date, all informants to the study made a clear and consistent connection between industry currency and the achievement of positive outcomes for clients. For example, learning and development managers saw the maintenance

of currency as a business imperative and critical to the organisation's competitive edge; similarly, employers in the trades suggested a lack of currency could mean a loss of productivity and potentially a threat to financial viability.

In order to understand the issue of industry currency from a trades perspective it is important to understand how employers stay current. With a pragmatic view of industry currency, employers acknowledged the challenges they had with keeping on top of industry changes and recognised how difficult it might be for many trainers. They understood that trainers had to meet the training demands of many different businesses, which often operated in diverse contexts. Importantly, they emphasised that the approaches they took to updating could be adopted by VET practitioners to equal effect. The strategies they most favoured were industry interaction, trade events, reading industry magazines and online research. Product manufacturers and vendor training were also seen as critically important across all industries, with suppliers providing exposure to new equipment and resources and delivering training to support the introduction of these into workplaces. As indicated by the literature, return to industry was less favoured by employers because it was seen as difficult or even impossible to organise, particularly in small-to-medium enterprises.

While employers rated some updating strategies highly, auditors provided contrasting views. In fact, auditor ideas about appropriate strategies for the maintenance of currency tended to go well beyond those offered by other key stakeholders. Given the extent of variation in the ratings across the three industries for suggested strategies, the auditing of compliance against the Standards for NVR Registered Training Organisations may need to take into account industry preferences for upskilling. This research suggests that a 'one size fits all' approach is not necessarily appropriate and that strategies utilised by trainers need to match what is readily accepted and available in specific industries.

This study has also revealed that employers and professional/industry associations might be a largely untapped resource for trainers seeking to maintain industry currency. Moreover, the capacity of industry skills councils to gather industry intelligence may mean that there is potentially a larger role for them in providing insights into shifting industry trends and technological changes. At the same time, the advice provided by informants suggests that individual trainers and registered training organisations could be much more proactive in seeking out those employers and industry bodies who are willing to assist them in this important process of upskilling.

The approach of the professions to currency was in many respects similar to the trades. Regulation, technological advancements and the desire to innovate were all significant drivers for professionals to keep abreast of industry changes. Upskilling was inevitably planned, discussed and implemented quite strategically. Each of the nine science, health (nursing), human resources and engineering organisations were committed to high professional standards in the workplace, with their organisational climates rated as highly supportive of ongoing learning. Generous support in both time and money for individuals to participate in professional development was available in most instances and employees were recognised and rewarded for doing so.

Responsibility for maintaining currency in the knowledge-based organisations was shared by both organisations and employees, although some organisations accepted a greater share, mirroring employers in hairdressing, plumbing and printing. With a focus on innovation, efficiency and client satisfaction, the nine organisations nevertheless ensured that technical excellence was well and truly embedded in their culture.

The approaches used to keep the professional workforces up to date were similar in many respects to those identified by employers in the trades and in the literature. Importantly, planning for updating

was highly strategic in the large companies, acknowledging that changes in industry trends and technology needed to be addressed as soon as they emerged. Considerable emphasis was placed on the provision of dedicated opportunities for collaborative learning and knowledge-sharing through industry networks; contact with experts in the workplace; communities of practice; work-based seminars; and conferences. In addition, interaction with peers in similar fields and peer review were encouraged. These were seen as particularly important when employees were faced with immediate technical problems and the development of new projects and/or the introduction of new technology. Great value was also placed on 'just in time' training to assist people to learn immediately about innovations in the world of work.

Learning in and through day-to-day work was presented by all learning and development managers as the most powerful means for professionals to keep current. For the engineers, scientists, health and human resource professionals, the type of project work undertaken constantly challenged and extended their skills and knowledge. A commitment to patient care and client satisfaction provided health professionals with the drivers and opportunities for the often incidental learning that formal training was less likely to achieve.

Critically, working and learning in the knowledge-based organisations were seen to go hand in hand. As a consequence, work largely tended to be structured in a way that gave individuals the chance to learn collaboratively.

While this study viewed currency from two different perspectives, it has revealed that the approaches used to keep tradespeople and professionals up to date are generally very similar, with only minor variations between organisations and industries. Although not a comprehensive listing of updating activities, table 3 sets out the key strategies used to keep employees in the participating organisations current.

Table 3 Strategies for updating: trades and professions

Strategy	Trades	Professions
Learning in and through the conduct of work	♦	♦
Collaborative learning	♦	♦
Accredited and non-accredited training	♦	♦
Networking with industry experts	♦	♦
Mentoring and/or coaching	♦	♦
Attending trade days/exhibitions, conferences	♦	♦
Vendor and supplier training	♦	
Problem-based, project-driven learning		♦
Shadowing		♦
Peer review		♦
Programmed knowledge exchange		♦

Implications for policy and practice

The findings from this research on industry currency from an industry perspective suggest a number of ways by which VET practitioner industry currency might be progressed.

From a training system perspective, the research suggests there is a need to:

- ensure greater clarity about what constitutes industry currency in specific industries and to determine the type and extent of evidence required to meet compliance requirements under SNR

4.4 and SNR 15.4 of the Standards for NVR Registered Training Organisations and Element 1.4 of the Australian Quality Training Framework Essential Conditions and Standards

- develop a continuing professional development framework that encompasses the full range of updating approaches, together with resources that organisations and individuals might use to support a continuing professional development strategy
- develop an audit system that works effectively to encourage the maintenance of industry currency and is tailored to specific industry and practitioner needs
- introduce a funding regime which recognises that there must be some contribution from all key stakeholders, given the critical importance they have accorded industry currency.

From a training provider perspective, the research suggests there is a need to:

- develop an organisational climate that endorses, supports and rewards updating so that the revitalisation of vocational competence and industry currency becomes the norm among practitioners
- adopt a strategic approach to the maintenance of industry currency, particularly where technology and the associated knowledge are constantly being superseded. As new knowledge emerges and skill requirements change, those workers who have responsibility for the take-up of innovations will need to be provided with carefully tailored training to keep them abreast of the changes
- introduce innovative approaches that not only offer formal and structured learning activities but also open up incidental learning opportunities as they arise in the conduct of day-to-day work
- emphasise the importance of collaborative learning, whereby sharing of new knowledge and mentoring of others, including the casualised training workforce, is encouraged and supported
- encourage the development of trainer interactions with employers and industry bodies who are willing to assist individuals to update
- make prominent the issue of industry currency in performance management discussions with individual practitioners and develop meaningful and achievable plans for its attainment
- strike the right balance between maintaining industry currency and improving teaching quality.

From an individual trainer or assessor perspective, the research suggests there is a need to:

- commit to ongoing interactions with industry to build on industry experience and knowledge
- use opportunities to engage with industry and build industry networks
- attend industry events and supplier/vendor training to keep abreast of emerging industry trends
- share experiences and information with training colleagues
- apply new industry knowledge and skills to day-to-day teaching and training practice.

A systemic framework for continuing professional development and access to training in key technical areas, together with some innovative organisational thinking about the provision of developmental opportunities for trainers, will go some way to addressing the issue of industry currency in the VET sector. It must be acknowledged, however, that rapid technological advancement and changes in industry trends will be ever-present and currency will remain a constant challenge. At best, a carefully targeted and strategic organisational approach will ensure that the most critical knowledge and skills upon which the credibility of trainers, registered training organisations and the sector largely rest will gain the status and focus they deserve.

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Support document details

Additional information relating to this research is available in *Industry currency and professional obsolescence: what can industry tell us? — support document*. It can be accessed from NCVER's website http://www.ncver.edu.au/publications/2622.html and contains:

- Literature review
- References
- Continuing professional development website analysis
- Interview questions
- Participant questionnaire
- Strategies data
- Defining the terms.

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National Centre for Vocational Education Research Ltd
Level 11, 33 King William Street, Adelaide, South Australia
PO Box 8288, Station Arcade, SA 5000 Australia
Telephone +61 8 8230 8400 Facsimile +61 8 8212 3436
Website www.ncver.edu.au Email ncver@ncver.edu.au