Research Report

Singapore Workforce Skills Qualification (WSQ), Workplace Learning and Assessment (Stage I)

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INSPIRE, ADVOCATE AND LEAD ADULT LEARNING AND PROFESSIONAL PRACTICE

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The Institute for Adult Learning (IAL) aims to contribute to the competitiveness of Singapore by developing an effective, innovative and responsive Continuing Education and Training (CET) sector that is able to meet the needs of industries and the workforce. It achieves this by raising capabilities, catalysing innovation, and leading research in workforce learning.

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The research in this paper was conducted under the Centre for Research in Learning. The Centre for Research in Learning undertakes research that seeks to understand better the processes and practices of programme design, teaching and learning in multiple settings. Alongside the enhancement of learning, curriculum design, training and assessment in the CET sector, this research seeks to engage practitioners in the research process and thus develop a community of practitioner researchers.

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Key Messages

Singapore Workforce Skills Qualifications (WSQ), Workplace Learning and Assessment

This report confirms the understanding that WSQ training is predominantly classroom-based. More importantly, according to available statistics, the delivery of WSQ in 2009 was totally classroom based. While our experience indicated that in 2010 there was workplace learning taking place, the extent of workplace learning is very limited; this is in sharp contrast to the delivery of competency-based training in a number of other countries. The preference for classroom delivery has resulted in limited examples of learning and assessment arrangements that take place in the workplace, and the use of different terminology (e.g. workplace learning and on-the-job training) to mean the same thing. The use of different terminology, while inevitable amongst lay people, can be a source of confusion and indicative of a need for a conceptual framework for those working within a particular system. The following key messages rest against these two overall findings:

- All stakeholders valued workplace learning, and recognised the inevitability of learning in the workplace.

- There are four main types of WSQ workplace learning arrangements: work attachments with no formal link to classroom learning, work attachments with some link to classroom learning, highly simulated workplaces, and structured workplace visits.

- There are a number of leading practice examples of assessment of WSQ learning where assessment either takes place in the workplace, or evidence is gathered towards formative assessment.

- Respondents suggested that workplace learning has a valuable role to play in the WSQ framework.

- Workplace learning arrangements are only relevant if trainees are able to make links between what they learn in class and at work. These links can come in the form of communication between training providers and employer partners, and learning tools.

- There are some leading practice examples in the Community and Social Services and Food and Beverage WSQ frameworks of workplace learning arrangements and tools to facilitate the classroom-workplace relationship.

- Respondents reported there are some things that are best learned in the workplace rather than in the classroom. They also reported on the value of classroom learning, and its relationship to application in the workplace.

- Transfer of learning is a complex process, requiring time and support from the workplace, appropriate design of standards and curriculum, and training methodologies. This calls attention to the design of WSQ workplace learning and assessment.

- There is a need for the collection of accurate data on different modes of delivery.

Executive Summary

Workplace learning has gained increasing attention in recent decades. The inevitability of learning in the workplace is now well accepted and highly valued. In the continuing vocational education and higher education sectors, more attention is being placed on building in workplace learning as part of the qualification itself. The most common and well-known form of workplace learning in the continuing vocational education sector is the apprenticeship where learners spend a considerable percentage of their time to complete their qualification in the workplace. In Australia, shorter versions of this arrangement are known as traineeships. Being in a real work environment enables the trainee to experience not only the physical environment in which daily work tasks are carried out, but also the culture, politics, power relations, work processes, and time pressures that are part of the productive process.

The term workplace learning has deliberately been used in this report in preference to on-the job training (OJT) as workplace learning is a more overarching term of which OJT is one component. Workplace learning can be described as the experience of the culture and structure of the workplace, its affordances and constraints for learning, and also the very curriculum for learning created through the processes of production and the organisation of work. The culture of the workplace shapes and influences the types of support for learning offered in the workplace which will be structured by the work itself. Workplace learning can also include formal structured arrangements, sometimes referred to as OJT. OJT, in this report, refers to training that takes place on-the-job, and that is supported by a workplace supervisor and draws on formal classroom training. Placement in a workplace is thus inclusive of both workplace learning and OJT. For the purpose of this report, we defined workplace learning as: learning that takes place by being part of and therefore engaging in the activity of work through opportunities for practice, and receiving guidance and support as well as contributing.

Given that Singapore Workforce Skills Qualifications (WSQ) training is overwhelmingly delivered in the classroom environment, the purpose of this project is two-fold. Firstly, it is to appreciate the ways in which workplace learning is understood and valued by a range of stakeholders. Secondly, it is to identify the workplace learning arrangements that are in place within the WSQ. The specific objectives of the project are to:

- Identify the dominant ways in which workplace learning and assessment is understood and valued and analyse implications;

- Identify the variety of workplace learning and assessment arrangements;

- Identify the statistical data collected about workplace learning and assessment; and

- Analyse any available data and identify what further statistical data would be useful to collect.

We have selected 10 WSQ frameworks for this study because their Continuing Education and Training (CET) centres offered some form of workplace learning. Consecutive semi-structured interviews were conducted with the respective policy advisors, training providers, Human Resource personnel/supervisors, and workers/trainees. In addition, four peak employer organisations were interviewed. All interviews were transcribed and two sets of analysis were carried out. In the first instance, case-studies of each framework were written to capture the WSQ workplace learning arrangements within each framework and secondly, all interviews were coded against a coding tree developed from identifying themes in the data. Descriptive statistical analysis was used to analyse data from Skills Connect that related to workplace learning delivery. This data was requested from the Quality Assurance Division of the Workforce Development Agency (WDA).

The researchers found that workplace learning (whether it was called OJT or workplace learning) is valued by all those who participated in the study. Furthermore, respondents considered learning in the workplace inevitable; a part of the function of undertaking work. However, this finding was not reflected in the statistics. The data collection tool, Skills Connect, captures data on the delivery of WSQ programmes in three major modes: classroom learning, e-learning and on-the-job training (OJT). This data comes from training providers when they submit courses for accreditation. Using the Skills Connect data provided, we found that in 2009, there was no OJT delivery (all delivery was classroom-based) and in previous years, there were few OJT programmes. This does not reflect the reality that we experienced when interviewing participants. One explanation is that this may be an issue of recording data; there is no definition of OJT provided, rather it is assumed that "everyone knows" what OJT is. For other possible explanations, we looked to the funding models. While there is no difference in the way classroom and OJT

delivery are funded, funding is capped at a given number of hours, and is outcome-based (e.g. results in employment for the trainee). The implication is that OJT delivery takes a longer time to deliver "outcomes", longer than the capped hours. As a result, training providers may be more inclined to select classroom delivery.

This question raises the issue of what is 'competence'; how is it understood here in Singapore? Is evidence of competence understood as a single demonstration of competency in any setting? The Advanced Certificate in Training and Assessment (Module 1, p. 29) notes that the "competency standards articulate the skills, knowledge and attitudes needed to perform a job task and describe the acceptable levels of performance." OJT in the same Module is described as being able to be "conducted at or away from the work site" (p. 37). Interestingly, in Australia (an important source of the origin of the WSQ), there is reference to the definition of competency as covering "all aspects of workplace performance" and "workplace competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time and in the required workplace situations and environments" (TAA04, Training and Assessment Package). The question of demonstrating competency over time raises issues of how competency is understood, assessment practices, delivery arrangements, and training practices.

There are a number of 'leading practice' arrangements for the delivery of WSQ workplace learning. These were found in the Community and Social Services and Food and Beverage frameworks. We termed these as 'leading practices' because of their well developed tools and processes for classroom and workplace learning. These tools included the use of trainee log books and supervisor reports, and trainers visiting the workplace to support trainees and ensure they are gaining a range of experiences. The implementation of the practices described requires strong provider-employer partnership arrangements, which both these frameworks had. Developing partnerships can be challenging and requires time and resources to put in place and maintained. Innovative practices, such as in the Food and Beverage framework, for maintaining partnerships included an award for the best supporting employer organisation. Providers in both frameworks monitored the quality of the experience their partners provided for the trainees. This is important as one of the challenges of placing trainees in the workplace is the temptation for employers to use them as cheap labour, and boring repetitive tasks with limited or no support.

However, the leading-practice examples of WSQ workplace learning were the exception. We categorised the different arrangements in the following way:

- Work attachment with no formal link to classroom learning (the programme has a classroom and a workplace component but these are perceived as entirely separate from each other). WSQ frameworks included Security and Precision Engineering;

- Work attachments with some link to classroom learning (classroom and workplace components where there is a link between classroom and workplace). Frameworks included Community and Social Services, Food and Beverage, Retail, and Training;

- Highly simulated workplaces (carrying out authentic tasks in physical spaces that mimic the workplace, using tools used in the workplace and some attempt to mimic working relations such as team work, and individual work). Frameworks included Aerospace, Creative industry, Landscape and Process Industry; and

- Structured workplace visits (trainees visit actual workplaces and observe how employees carry out daily tasks and observe the working environment and work flow). Frameworks included Community and Social Services and Retail.

The workplace learning arrangements captured in this report indicate there are a range of ways in which the workplace learning is supported, including support from supervisors, rotating work schedules to fit with the content of the classroom module, and being paired with an experienced worker who acts as a mentor. The Retail in-house training provider supports their supervisors through a leadership programme where supervisors discuss matters as diverse as time management and delegation and share stories on how to best support trainees. This example of supporting those who support workplace learning is another leading practice example.

The types of workplace assessment arrangements varied according to the workplace learning arrangements adopted by training providers. For those who had highly simulated workplaces at their premises, trainers conducted assessment in this environment and the classroom. One provider from the Creative Industry framework also highlighted that they bring in professionals from within the industry to assist with the assessment process. Feedback from these individuals (who are potential employers) gives trainees a better idea of the industry standards they have to work towards. Assessment in actual workplaces during the time that trainees are there for their attachments can be conducted by supervisors. Workplace supervisors can also comment on the work that trainees complete in log books, and trainers can take these into consideration when assessing trainees. This arrangement was used by the Food and Beverage training provider. Where there

were no or weak links between workplace and classroom learning, assessment took place solely in the classroom, even though trainees spent time in the workplace.

In response to one of our questions on learning strategies, respondents spoke about the ways in which they participate in learning within the workplace. Knowing how respondents participate in learning in the workplace provides further evidence of ways in which workplace learning can be structured and supported within the WSQ framework. Participation includes using trial and error, accessing a variety of resources, actively observing and reflecting, going to superiors for help, discussing and problem solving with colleagues, and learning from mistakes. Respondents spoke about needing to learn the expectations and standards of the workplace, and being aware of opportunities for learning. However, it was also noted that not everyone has the skills to make the most of opportunities for learning in the workplace, suggesting there is a need to encourage the development of learning to learn skills.

The findings from this research suggest there is a need to develop a conceptual framework for workplace learning, and consider reporting arrangements for workplace learning components of the WSQ. Training providers would be required to undertake new roles if implementing workplace learning in their programme for the first time and develop partnerships with employers. There is the potential to develop learning tools that link classroom and learning in the workplace. All these suggestions require a re-think not only of the conceptualisation of learning and competency but also for the work of standards, and curriculum writers and trainers supporting workplace learning.

1.0 Introduction

1.1 Overview

The impetus for this project was an observation that WSQ programmes appear to be delivered mainly in the classroom. This differs from a number of other competency-based training systems. The most common model for providing learning in the workplace is the apprenticeship or traineeship, where the apprentice or trainee spends a considerable amount of time in the workplace. In Australia, for example, apprenticeships and traineeships that cater for new entrants to the workforce as well as mature age workers (many of which are entirely within the workplace) account for some 25% of vocational education and training (VET) activity in Australia (Smith & Kemmis, 2010). Some 30.6% of Australian employers had at least one apprentice or trainee in 2009, an increase of 1.5% from the previous year (NVCER, 2009). Employer satisfaction with the VET system as a way of meeting their skills needs is high (83.2% for employers with apprentices and trainees) (ibid., 2009). There are many other arrangements for the provision of learning in the workplace as part of a qualification, including industrial attachments, practicum, and professional practice.

Given Singapore's emphasis on classroom delivery for CET, a qualitative, exploratory study was designed to explore a range of stakeholders' understandings and beliefs about learning in the workplace. This study also investigates what training arrangements are used by Singaporean training providers, specifically CET centres, to provide opportunities for their learners to engage in learning in the workplace and what statistical data was collected about the delivery of learning in the workplace. These objectives constitute stage one of this two-stage project and are addressed in this report. Stage two of the project, due to be completed in the first quarter of 2011, is an in-depth study of learning, and its relationship to the WSQ framework in two to three workplaces.

1.2 Background and context

The value of workplace learning is now well accepted (see for e.g. Billett, 2001, 2004, 2005; Moore, 2004; Lave, 1996; Blackler, 1995). The link between formal competency-based training systems and workplace learning varies from one country to the next. In Australia, the UK, and Germany, workplace learning is an intrinsic aspect of their competency-based training systems. However, within the Singapore WSQ framework, workplace learning does not appear to feature prominently.

Workplace learning and work are intertwined (Billett, 2005), one cannot be separated from the other. It is now well established that participation in work is a process of and for learning, and enculturation in work practices and norms. However, unlike in educational settings, the productive activity of work is not considered to lead to learning outcomes. In reality, though, the structure and production of work shapes workplace curriculum and learning (Billett, 2004; Moore, 2004).

Given that multi-dimensional and holistic models of competence are becoming more widespread (Le Deist & Winterton, 2005) to cover a range of features, such as cognitive, functional, personal, ethical and meta-competencies (Cheetham & Chivers, 1996), it makes sense to better understand the constraints and possibilities for developing and assessing the learning and assessment of competence in the workplace. In addition, assessment is often a fraught area, causing practitioners considerable angst. As Guthrie (2009, p. 29) notes in relation to the Australian scene:

One of the areas for improved professional practice that always emerges is assessment. Schofield and McDonald (2004) suggest more reliance needs to be placed on the judgments of professional educators. Hager (2004) notes that performance is readily observable while a range of capabilities, abilities and skills are less so. Judging competence always involves inference and, therefore, professional judgment.

In Singapore, it appears that the phrase 'workplace learning and assessment' seems to bring forth puzzled frowns, followed by a query, "Do you mean on-the-job-training?" Given that on-the-job training (OJT) is a sub-set of workplace learning and assessment, this raises interesting questions about what different stakeholders mean when they use these terms, and what other terminology may be in use. How do the dominant perceptions and understandings inform learning in the workplace, and how is learning in the workplace valued? What are the implications of these dominant understandings for policy and practice? Furthermore, how does and could it relate to the WSQ framework? What enables and constraints workplace learning, and opportunities for accreditation? Also, there appears to be limited quantitative data collected on workplace learning and assessment in Singapore. What data would be useful to collect, and what data could provide an important source of information to policy advisors, training provides, and employers?

In addition, there is a common perception that workers do not learn 'underpinning knowledge' on the job, yet there is empirical evidence to show that much of the tacit knowledge workers hold is about 'why' (Nonaka & Takeuchi, 1995; Brown & Duguid, 1991). This may help explain the apparent limited valuing of workplace learning, along with the high value placed on qualifications in Singapore, given the recent opportunity for workers to gain such qualifications through the WSQ framework.

The ways in which workplace learning is valued, the language used to identify, describe, and organise it, mediate the conceptualisation of and possibilities for workplace learning and assessment. Therefore, there is a need to:

- Understand what perceptions different stakeholders (e.g. policy advisors, training providers, employers, and trainees) have of workplace learning and assessment;

- Identify the data gathered about workplace learning and assessment;

- Develop a picture of the different arrangements in which workplace learning and assessment is delivered;

- Understand what learning takes place in the workplace and how learning takes place in the workplace; and

- Identify what processes are used to undertake assessment in the workplace.

This project has two stages. The first stage takes a vertical slice across a range of industries from policy makers to learners to investigate the understandings and valuing of workplace learning and assessment, identify existing databases on workplace learning and assessment, and analyse available statistics and identify gaps in the data collection that would provide important information to policy advisors, training provides, and employers. The second stage is set within a small number of workplaces, where learning and assessment processes are investigated, and skills learned mapped against relevant competency standards.

1.3 Purpose and research questions

The WSQ, workplace learning and assessment research project aims to contribute to Singapore's CET system in three ways. First, by increasing awareness around workplace learning and assessment. Second, by highlighting the possibility of linking workplace learning and assessment to the WSQ framework. Third, by providing input into policy through the development of:

- Knowledge of WSQ, workplace learning and assessment arrangements;

- Perceived value of WSQ, workplace learning and assessment by different stakeholder groups; and

- Different models and guidelines for WSQ, workplace learning and assessment.

1.3.1 Research objectives

For stage one of the project, the objectives are to:

- Identify the dominant ways in which workplace learning and assessment is understood and valued, and analyse their implications;

- Identify the variety of workplace learning and assessment arrangements;

- Identify the statistical data collected about workplace learning and assessment; and

- Analyse any available data and identify what further statistical data would be useful to collect.

- The second stage will be set within two to three workplaces in order to:

- Recognise what is learned in the selected workplaces, and what assessment processes are used;

- Map 'what' is learned to the relevant WSQ framework;

- Identify ways in which learning and assessment is supported and constrained in the workplace; and

- Propose models for recognising workplace learning and assessment through the WSQ framework.

1.4 Scope of the project

10 WSQ frameworks were identified and the following stakeholders from each framework were interviewed:

1. Policy advisors from Singapore's Workforce Development Agency (WDA);

2. Training providers;

3. Human resources personnel/supervisors (hereafter referred to as supervisors);

4. Workers/trainees (hereafter referred to as trainees); and

5. Representatives from peak employer bodies (hereafter referred to as peak employers).

The full details of the criteria for selecting frameworks and stakeholders are set out in Section 3.1.

1.5 Structure of the report

This report has five chapters of which this is the first. The second chapter reviews the literature in relation to various competency-based training arrangements for learning in the workplace, ways of conceptualising and understanding workplace learning, and strategies used in learning in the workplace. This second chapter also reviews policy documentation to provide information about different arrangements for competency-based workplace learning and assessment. The following chapter sets out the methodology and methods used in the study, explaining the processes used to select the sample, undertake interviews, and analyse the data. The fourth chapter presents the findings of the study. Notable in this findings chapter is the limited data on WSQ assessment in the workplace; this is a result of limited assessment actually taking place in the workplace in the programmes investigated in this study. Also notable is the difference between what we present as workplace learning arrangements taking place in the programmes investigated in the study, and the way in which workplace learning is defined in the review of the literature. Many of the programmes investigated in this study are Professional Conversion Programmes (PCP) designed to help individuals change careers, but with limited or no links between classroom and workplace environments. Other programmes include highly simulated workplaces that attempt to capture multiple elements of an authentic working environment, as well as programmes where trainees spend actual time in the workplace and are actively supported by their trainers and supervisors. The final chapter presents the implications, makes recommendations, and concludes the study.

2.0 Reviewing the literature: What do we know about workplace learning and arrangements?

2.1 Introduction

The research questions provide the major structure for this literature review. Some additional aspects have been included as part of defining terminology and conceptualising the key ideas within the research questions. There are many ways of understanding workplace learning so the review commences with a section discussing various definitions and ways of understanding workplace learning. Following this section are a number of sub-sections discussing the ways in which knowledge is conceptualised and framed, the issues of transfer of learning, the strong theory-practice divide, and processes and strategies for learning in the workplace. This first part of the review draws on research articles and research-based book chapters. The second part of the review concentrates on workplace learning arrangements identified from policy documents in a number of countries. Partnerships for workplace learning are an important aspect of putting workplace learning arrangements in place and the review has a final section on partnerships drawn from research articles.

2.2 Defining workplace learning

Definitions of workplace learning vary quite significantly, from including classroom training to learning being totally embedded in everyday work and based on experience. Some definitions focus on where learning takes place, while others focus on the process of learning. For example, the Australian Government's Department of Education, Employment, and Workplace Relations' (DEEWR) website defines workplace learning as:

Learning or training undertaken in the workplace, usually on the job, including on-the-job training under normal operational conditions, and on-site training, which is conducted away from the work process (e.g. in a training room)

This definition emphasises where learning takes place, differentiates between learning and training, and suggests workplace learning can include learning and training away from actual work.

Whereas, Billett (2001, p. 21) notes that:

"Learning and working are interdependent. We learn constantly through engaging in conscious goal-directed everyday activities – indeed, as we think and act, we learn."

This very different understanding of workplace learning focuses on the interconnections between learning and the activity of work. It is assumed there is no issue about where the learning takes place, namely in the workplace through the everyday activities of work and production.

The different definitions reflect different perspectives about learning and work; for some, work and learning is not separate, rather learning is embedded in work, but others separate work and learning. Billett (2001, 2004, 2006) takes a socio-cultural understanding that the situated context (the culture and structure of the workplace, the type of work, the professional discourses, and the tools used to form the curriculum of workplace learning), mediates access to learning. Billett also highlights the role of individual agency; the worker themselves can elect to engage in opportunities or not. However, engagement is encouraged by factors such as recognition and valuing of work done, and access to support and guidance.

These two perspectives are perhaps at either end of a continuum of understandings of workplace learning. The DEEWR definition suggests a cognitive understanding of learning as individual cognition where stimuli from the environment enter the sensory memory through a process of perceiving its meaning, transfer it to working memory where we will organise and encode this information. Information is then retrieved from long-term memory and we integrate this with the 'new' information in our working memory (Eggan & Kauchak, 2001). At this end of the continuum, training would be considered important. The role of effective teachers and trainers is important for higher order learning (Eggan & Kauchak, 2001). The purposes of the different environments, work and classroom, are considered to be different (Butler & Brook, 1998). Classroom learning is more 'academic' where the intent is to challenge learners, move them beyond where they currently are, and to develop their learning to learn skills and their internal locus of control (ibid., p. 25). This perspective is challenged by those with a socio-cultural perspective. Paloniemi (2006, p. 440) suggests that "experience gained in authentic work practices is a prerequisite for competence construction and for the development of expertise". Just as in a classroom setting where the effectiveness of the trainer and the curriculum they are working with influences the quality of learning, so too does the quality of support in the workplace impact on the quality of learning (Vaughan, 2008). As with classroom learning, the kinds of activities the individual engages in, and how these individuals engage in the activities and construct knowledge from opportunities provided (Billett, 2001) mediate learning.

Marsick (1987) proposes that workplace learning is the way in which individuals or groups acquire, interpret, recognise, and assimilate information, skills, and feelings. Marsick's explanation is inclusive of individuals and collectives (groups), and of cognitive and emotional responses. Sandberg (2000, p. 57) frames his discussion around the need for the development of collective competence in the workplace, suggesting that "without a shared understanding of their work, no cooperative

interaction will emerge, and by then, no collective competence will appear in the work performance". Collective competence, he postulates is cultural; members are enculturated into the work and workplace. Systems of shared symbols are tools for developing collective competence.

Human resource development perspectives focus on outcomes for the individual (including career development) and outcomes for the organisation.

Involves the process of reasoned learning towards desirable outcomes for the individual and the organisation. These outcomes should foster the sustained development of both the individual and the organisation, within the present and future context of organisational goals and individual career development. (Matthews, 1999)

The alignment between organisational and employee outcomes is about development of both (Rylatt, 1994). Organisational culture and structure are clearly important in the achievement (or not) of these outcomes. 'Outcomes' may be understood differently for different organisations. Different types of workplaces and industries may require different approaches; "one size does not fit all" (Vaughan, 2008, p. 36).

Given this range of perspectives and therefore differences in understandings of workplace learning, it is not surprising that there is no universally agreed definition of workplace learning; it is generally accepted that learning takes place regardless (Chiang & Wang, 2008). The perspective taken in this study is that we combine the socio-cultural perspective that learning is mediated by context and the tools we use and have access to, with a constructivist perspective that we make meaning of our experiences. Making meaning or sense of experiences and context requires time, individual agency, and cognitive processing. When applied to learning in the workplace, it follows that learning is collective as well as individual: individual because it involves individual reflection time and cognition in interaction with others; collective, not only because of the necessity of interaction and dialogue with others, but also because learning in the workplace takes place in an organisation – a collective entity. Learning in the workplace is intrinsically bound up with productive processes, and the cultures and structures which support those processes. To this end, and for the purposes of this report, workplace learning takes place *by being part of* and therefore *engaging in the activity of work*. Thus, the opportunity for practice, to engage and receive guidance and support as well as contribute (Tynjälä, 2007; Billett, 2001) is at the heart of the concept of workplace learning discussed in this report.

The challenge for competency-based training provision is the nexus between what is often referred to as off-the-job and OJT. The term 'training' signifies a structured outcome-driven approach and an attempt in some way to 'map' what happens in the classroom to the workplace. This suggests that learning requires a 'teacher' or

'trainer' as you find in the classroom, when in reality, the workplace can be unpredictable in providing opportunities for learning. There are many possible ways in which learning can take place and people from whom you can learn. While the workplace may be 'unpredictable', it is in reality structured; the nature of the work, tasks, procedures, and the organisation of production shape that structure. These very structures and the cultures within organisations create affordances for learning or alternatively can create barriers to learning that may need to occur (Brown & Duguid, 1999; Owen, 1999). The structures already in the workplace for learning were recognised by Billet (2001) who introduced the concept of the workplace curriculum and outlined a model for a workplace curriculum. Fuller and Unwin (2002, p. 107) deliberately used the term "pedagogies" for the workplace, noting that experienced and inexperienced employees are involved in teaching and learning a wide range of knowledge and skills needed in the workplace.

To make the most of opportunities for learning that are richly embedded in the workplace, CET providers of competency-based training need to not only appreciate that these opportunities exist but have a deep knowledge of them, and build these arrangements for workplace learning into curriculum and assessment design. The theoretical continuum of learning discussed above has another dimension to it - our understandings of knowledge. Given that 'knowledge' is a key word in curriculum documents and in the literature, it is necessary to 'unpack' what we understand and mean when we use this word.

2.2.1 Knowledge and workplace learning

Boud and Garrick (1999) suggest that conceptions of workplace learning are flawed by a logic based on polarities about what is and is not knowledge, and by what counts and does not count as learning. The ways in which we conceptualise knowledge and what knowledge is to us influence the way we understand learning.

Knowledge has been categorised in many different ways. The analytical, static, 'objective' approach to knowledge and knowledge of parts, attributed to the scientific approach, contrasts with a perspective of knowledge gained from direct, bodily involvement in the acquisition of knowledge and knowledge of the whole (Schmidt, 1993). The latter perspective is a belief that knowledge needs to adapt to an environment (such as a workplace), is not disembodied facts, and not explicitly taught, rather it is the "veil through which we see and interpret the world, and interact with the world' (Sternberg, 1994, p. 223). This is similar to Schmidt's notion that knowledge is acquired through multiple senses; there is no dichotomy between mind and body. The separation of performance and 'underpinning knowledge' in competency-based training standards documentation values the former, scientific approach to knowledge, ignoring the mind-body relationship. This intertwining of knowledge, mind, body, and learning is discussed in Sections 2.2.2 and 2.2.3.

Expertise has been divided into declarative knowledge and procedural knowledge (Tynjälä, 2009). Declarative knowledge is considered to be factual, conceptual or theoretical knowledge, and can be expressed in words, figures, numbers or other symbols; it is also known as 'knowing-what'. Procedural knowledge is expressed in practical skills. This type of knowledge is often implicit and known as 'knowing-how'. This categorisation however ignores the need for knowledge that links the two kinds of knowledge together. A conceptualisation of expert knowledge developed by Bereiter (2002) combines these perspectives:

1. Statable knowledge: similar to declarative knowledge;

2. Implicit understanding: tacit knowledge acquired through experience;

3. Episodic knowledge: knowledge that comes from experience of previous cases and applied to reasoning and decisions;

4. Impressionistic knowledge: feelings and impressions expressed in intuitions. This type of knowledge requires considerable experience;

5. Skill: similar to procedural knowledge but inclusive of the cognitive components of skill and skill that comes with practice; and

6. Regulative knowledge: knowledge about one's own ways of doing and thinking, strengths and weaknesses as well as the principles and ideals of the profession.

This categorisation of knowledge suggests that knowledge is dynamic, fluid, and that much of what we 'know' comes with experience and learning in multiple ways and places. This contrasts with the kind of knowledge which vocational and professional education programmes claim to provide, described by Eraut (2004, p. 205) in the following way:

- Theoretical knowledge of concepts and theories to help learners explain, understand and critique occupational practices and arguments used to justify them and to appreciate new forms of practice;

- Methodological knowledge about how evidence is collected, analysed and interpreted in academic and occupational contexts, including procedural principles of the occupational field;

- Practical skills and techniques;

- Generic skills; and

- General knowledge about the occupation, its structure, modes of working, and cultural values.

While there might be little dispute that these types of knowledge are necessary, the ways in which they are conceptualised present knowledge as static rather than dynamic and interconnected. When knowledge is conceptualised in this way, it is easy - for learners to passively acquire the knowledge out of context. Another concern with such a conceptualisation is that it assumes this knowledge is transferable, that is, it is transferred to workplace contexts and applied. In fact, there is little evidence that these kinds of knowledge are transferable to the workplace from the classroom or academic institution (Eraut, 2004). Instead, Eraut puts forward a typology of knowledge found in the workplace. The typology covers working contexts, conditions, the role of experience, the capability to decide and act, given experience of working in the workplace and adaptation to a range of local conditions. Eraut (2004, p. 206) notes the connection between knowledge found in the workplace, and what he calls the "performance domain". This consists of the contexts and cultures in which the performer has to operate, the conditions of work (e.g. degree of collaboration, supervision, pressure of time, and availability of resources), and the situations which the performer may encounter (e.g. client types and demands, tasks, and interpersonal events). Eraut's (2004, p. 207) five knowledges found in the workplace are:

1. Codified knowledge acquired during initial professional training and further formal learning (codified academic knowledge of concepts, theories, methodologies) or in the workplace itself (job-specific technical knowledge, knowledge of systems, and procedures);

2. Skills needed for competence in a wide range of activities and for performing several work-related roles, notable technical, interpersonal, thinking and learning. These are acquired through practice with feedback;

3. Knowledge resources include materials, online resources, others in the workplace, external to the workplace and personal contacts;

4. Understanding of other people (clients, colleagues, situations, contexts, self understanding) and of self. This understanding informs action and decisions; and

5. Decision-making and judgement – these vary according to the conditions (e.g. rapid decisions with little time for analysis or consultation or deliberate, consultative decisions).

Eraut notes that this typology does not account for knowledge that results when several different kinds of knowledge are combined to achieve a complex task or performance.

One of the major differences between Eraut's typology, and vocational and professional knowledge is the way in which this knowledge is acquired and developed. Most of Eraut's typology is embedded in the experience of doing the

work. The exception is initial codified knowledge gained in pre-service formal learning settings.

The ways in which we conceptualise knowledge, and codify and embed this into curriculum documents and assessment values particular understandings and kinds of knowledge. For example, the kind of knowledge that appears to be valued in vocational and professional programmes (see Eraut's (2004) description) is knowledge as static, statable, declarative, even when applied to procedural (how to) knowledge. The ways in which we understand knowledge, and the kinds of knowledge we value most, influences how policy makers conceptualise and fund training programmes, how curriculum designers design learning, how trainers engage learners in relation to the learning materials and modes of delivery, and how learners learn.

When the vocational and professional typology of knowledge is used, we need to question the extent and ways in which learners transfer knowledge to a workplace setting. Eraut (2004) questions if the term 'transfer' is a valid description of the vocational and professional typology of knowledge, and its application to the workplace. This statement suggests it is important to understand the notion of transfer of learning as it is implicit in the structures of classroom learning, and its assumed application to work.

2.2.2 Transfer of learning

The argument that most knowledge from qualifications does not become usable at work until further learning takes place in the workplace is at the heart of the concept of transfer (Eraut, 2002). The concept of transfer has changed over time from being understood as something that did or did not happen, to being understood as a learning *process* to develop an understanding of a new context. This change in approach is reflective of a shift from a psychological theoretical perspective to a socio-cultural theoretical perspective.

Transfer involves both individual cognitive processes, enculturation into relevant communities of practice and level and types of support in the workplace (Tennant, 1999). In addition, transfer requires multiple dimensions across mental, material, social and cultural planes (Evans, 2009, p. 98). Eraut (2002, p. 69) describes the process as including the recognition of what prior knowledge is relevant to the current situation; transforming that prior knowledge so it fits the situation; then integrating the new assembly of knowledge and skills to create an understanding of the new situation and respond with appropriate action. Tennant (1999, p. 177) provides a list of specific strategies which he claims are likely to enhance transfer. These strategies cut across both classroom and workplace environments:

1. Learners are exposed to 'authentic' activities, with the opportunity to access the full range of learning resources;

2. Learners are exposed to multiple situations and multiple examples;

3. Attention is drawn to the potential for transfer by highlighting the generic nature of the skills being acquired;

4. The higher-order skills and principles being acquired are identified and made explicit.

5. A supportive climate exists in the transfer context (e.g. supervisor support, opportunity to use learning, peer support, positive personal outcomes, and encouragement of further learning);

6. There is a capacity to 'learn how to learn from experience', that is practice in analysing experience and developing strategies for learning;

7. There is a common way of talking and learners are actively engaged in learning through communicating; and

8. Learners have 'lifelong learning' skills and dispositions; the capacity to be self-directed and regulate their own learning.

The main factors prolonging prevention of transfer of knowledge to make it usable are likely to be:- developing an understanding of the context, how complex the knowledge is, and the need for substantial new learning in order to make connections and links to prior knowledge (Eraut, 2002). The process of transfer requires time, support, and considerable new learning. The challenges of transfer should not be underestimated. As indicated earlier, the separation of performance and 'underpinning knowledge' is a factor that works against the development of transfer conditions and ways of knowing. This theory-practice divide is one learners experience considerable frustration with.

2.2.3 The theory-practice divide

Overcoming the perceived gap between theory and practice can be challenging. In competency-based frameworks, such as the one in Australia, theory and practice are clearly separated in the specification of competencies, training delivery, and assessment regimes. Trainers and managers of registered training organisations (RTOs) employ terms such as 'underpinning knowledge' to clearly differentiate between theory and practice. However, the nexus between theory and practice can be managed in a number of ways. For example, in working with student nurses, Parboteah (2001, in Eraut, 2002) used knowledge maps as tools for facilitating links between theory and practice. These proved successful once lecturers modelled their use *in* the workplace. This short intervention led to students adopting a more reflective and critical approach to their practice. Eraut (2002) concludes from this

study that where there is a significant theoretical content, the capability to apply theory can only be fully developed in practice situations. The conditions to facilitate the integration of theory and practice include time and opportunities to discuss theoretical aspects, and for learners to see such discussions as part of their role (ibid., 2002). However, such conditions are rare in workplaces. Alternatives can include reflective off-the-job discussions of work-based experiences and assessment tasks that require the collection of information in the workplace.

2.2.4 Processes and strategies for workplace learning

Direct guidance of other workers, observing workplace practices, and doing the actual work are central to learning in the workplace (Billett, 2001). Billett came to this conclusion having undertaken extensive surveys and interviews with workers across a range of industries, including hospitality, transport, retail, warehouse, clerical, and secondary processing industries. Observing and listening, guidance from and talking with other workers, doing the work, and direct instruction (Billett, 2001; Collins, 2006; Unwin, et al., 2008), and engaging in self-reflection (Unwin, et al., 2008) are considered most effective for the development of workplace knowledge and skill, particularly high level procedural knowledge.

Reflection time is required but reflection is not solely an individual cognitive process. Of necessity is dialogue with others as part of the reflective process to make sense of experience. This process can also evolve into conscious enquiry, which includes behaviours such as being able to ask relevant questions, sharing observations, seeking alternative perspectives, challenging, and seeking clarification through working with others (Owen, 2001).

'Just doing the work' is more complex than it sounds. Billett (2002) explains that in a 'real' environment, workers are required to undertake 'goal-directed' activities that require problem- solving. That is, workers have to consider new and effective ways of naming and addressing the problem, and then through practice, improve, and modify their approach. By doing the work, concepts can be richly associated with the activity, "thereby assisting the purposeful organisation of their knowledge" (ibid., p. 75). The more complex the tasks, processes, and systems within which the work is done, the more necessary it is to access a wide variety of tasks, experiences, and levels of responsibility in the workplace. This is because as complexity increases, what is required is greater than any individual can manage (Weick, 2001). Thus, practice and experience are necessary and valued aspects of workplace learning (Paloniemi, 2006; Billett, 2001).

Guidance and talking with other workers generally takes the form of matching appropriate tasks to the individual, explanations, and monitoring. Over time, this leads to increasingly more accountable tasks being undertaken by a new worker. Those involved in guiding workers involve them in shared problem-solving, and

understand and respond to their needs, which is similar to the strategies used in modelling, coaching, and scaffolding (Billett, 2001).

The ways in which knowledge and skills are developed in workplace learning require learners to use their knowledge (e.g. facts, skills, strategies, norms, values, ways of thinking, and strategies) to make decisions, consider and plan actions, define and solve problems, and check accountability of self and others (Moore, 2004). In social settings, of which work is one, we read situations and interpret the behaviours of others based on our knowledge, and respond accordingly. In this way, we constantly apply and refine our understandings and practices.

The strategies identified in this section are not without their problems. Billett (2001) identified a number of challenges, such as gaining access to experts and activities in the workplace, and the difficulties of learning conceptual knowledge through everyday work experiences. The effectiveness of these strategies is dependent on far more than an individual's skills in providing guidance and structuring the work of their peers or subordinates. Rather, it is dependent on the culture and structure of the work and workplace, as discussed earlier. Another important factor in the effectiveness of workplace learning and strategies employed is the motivation and learning history of the individual. Vaughan (2008, p. 33) notes that a "learning career" is developed over time and changes as experiences of learning and experiences of oneself as a learner change. Factors such as self-confidence, literacy and language barriers, sense of agency, and knowledge and skill in learning to learn in different ways and environments, are just some of the factors that are part of the mix of learning in any setting.

Arrangements for providing opportunities to develop experience, to practice, to "know" in mind and body the nature of the ways of learning in different workplaces are explained in the following sections.

2.3 Work, and workplace learning arrangements

Workplace learning is a valued component of VET because the learning that takes place in genuine work environments involves not only a trainee's daily work tasks, but also the culture, politics, power relations, and work processes that operates within an organisation. This real context enables trainees to make productive contributions, and helps employers to make informed recruitment decisions based on the trainees' performance. The many different forms of workplace learning arrangements (e.g. apprenticeships, cadetships, practicum, etc.) are set up to provide learners with opportunities to experience the 'real' environment and to practice under 'real' conditions. However, many of these workplace leaning arrangements are predicated on traditional work and working relationships. Traditional forms of VET workplace learning such as apprenticeships and

traineeships are based on the assumption that the work environment is stable, and that there is an employee-employer relationship.

However, in today's global economies, work environments not only in new emerging industries but also in traditional industries can be uncertain, unpredictable and dynamic. For example, Burton-Jones (1999) conceptualised labour supply of the contemporary work organisation as including dependent contractors, independent contractors flexi-hire (e.g. temporary workers) and mediated services (e.g. outsourcing). Non-traditional working arrangements place different requirements on those doing the work, and hence of the educational systems supporting the development of workers. As far back as 1995, Manfred noted that workers require broad, transferable and flexible skills. Workers working across multiple organisations (e.g. self-employed such as adjunct trainers, those working in firms offering services to multiple organisations) are being required to manage relationships situated within a variety of organisational cultures and market contexts, apply their knowledge across different organisational processes, strategies and cultures (Owen & Bound, 2001). The demands on workers, whether employed in traditional industries and under traditional arrangements or non traditional work and arrangements, are increasingly complex. Smith and Marsiske (1997 cited in Moy, 1999) note that job performance requires technical, procedural strategic and practical knowledge, knowledge organisation and metacognitive strategies and the ability to apply these to on-the-job performance. The contradiction is that the changing nature of work suggests there is a need for workplace learning components in formal qualifications and many of these workplace components are based on traditional arrangements.

To what extent does or can competency-based systems, such as the WSQ, address increasingly complex, dynamic needs? The advantage of locating competency-based training in a workplace is that it enables individuals to apply their training directly in the context of the job at hand. However, such environments can also be a disadvantage. Workplaces are not necessarily set up to accommodate a workplace training focus; the rigorousness of workplace assessment can be a key concern (Owen & Bound, 1998). To what extent are vocational training systems set up to develop skills can be transferred across settings? In a study of the learning of workers in contractor alliances Owen and Bound (2001) found that it is important for providers of competency-based training to recognise that networking and learning by doing is important for those involved in finding their own work with others. These authors also found that communicating ideas and information, planning, organising, working with others and cultural understanding were critical for the success of those working in contractor alliances. These workers are constantly seeking feedback, reflecting and learning through their experience of engaging with others. One means of providing these opportunities is through blended learning delivery including on-line delivery for interaction, sharing of stories and experiences. The facilitation of such provision has

considerable implications for providers and trainers, a focus that is beyond the scope of this project. While being aware of increasingly complex needs, we focus below on three typical structural arrangements for including workplace learning as part of a qualification.

2.3.1 Industrial attachments

In order to give students the opportunity to apply what they have learned in the classroom, and a better picture of what their future jobs entail, they are sent to companies from the same industry for a short period of time. For the duration of their attachment, students are paid by the host companies and are expected to complete coursework. At the National University of Singapore's (NUS) Faculty of Engineering, students are encouraged to engage in Enhancement Programmes (EP) as part of their university degrees (www.eng.nus.edu.sg/undergrad/epmc/ep.html). Industrial attachments (24 weeks) and vacation internships (12 weeks) are two types of EPs that lead to course credits. Students can source for placements by themselves or through the university. Workplace supervisors will support these students, track their progress, and evaluate their work. During the attachment or internship, students record their weekly activities in log sheets and write a report once every six weeks according to the given guidelines (e.g. the company's training schedule and the student's training progress). Reports are then submitted to workplace supervisors for endorsement and clearance before they are sent to mentors at the University for grading.

2.3.2 Practicum

Practicum or professional practice is another form of workplace learning arrangement. The initial teacher preparation programmes at Singapore's National Institute for Education (NIE) involve academic, curriculum, and educational studies modules but the core aspect of each programme is the practicum, or the period of time student teachers spend teaching in actual classrooms (http://eduweb.nie.edu.sg/practicum). The number of teaching slots student teachers have to fulfil depend on the year level of the classes they teach in (e.g. 20 to 24 half hour periods for primary school classes). At the host school, student teachers are assigned Cooperating Teachers (CTs) who mentor and guide them throughout their attachment. The CTs monitor the progress of students by checking their lesson plans and observing them while they teach. Student teachers can also seek advice and assistance from NIE Supervision Coordinators (NSCs). At the end of the practicum, feedback from the CTs and NSCs are taken into consideration as part of the student teacher's final assessment.

2.3.3 Apprenticeships

Within the VET sector, apprenticeships (and traineeships) are typical arrangements that have been put in place to ensure learners gain extensive practical experience in the workplace. Generally, apprenticeships refer to training in trade-based occupations, and traineeships refer to training in vocational areas. However, as the two arrangements are similar, the terms "traineeships" and "apprenticeships" are often used inter-changeably. The apprenticeship model that was first developed in Germany involves a combination of training in school and at work. It relies on a three way contract between apprentices, training providers, and employers, and the actual arrangement that is negotiated between the three parties varies across countries and industries. As explained below, some apprentices may stay in school for a specified period of time before embarking on their training with a host company. Other apprentices may alternate between attending training at school and working in a host company.

Germany has a two-track or dual VET system and apprentices move between one or two days at a training school, and three or four days at a host company (Spiewak, 2008). The idea is for schools to equip students with the necessary theoretical background and for companies to provide them with opportunities for hands-on work experience. The cost of the programme is shared by the government who funds the schools and companies who pay the individuals a wage for the duration of their programme (Spiewak, 2008). Within this system, there has been debate over the relevance and effectiveness of the predominately one-company model when there is need for a connected, mobile, and flexible workforce (Grollmann & Wittig, n.d.). It has been suggested that the answer to this concern is not a broad programme delivered by vocational schools or cross-company training centres because this type of training (which may involve practical tasks in simulated environments) removes trainees from actual work environments. Instead, there is a push for trainees to learn in different workplaces through co-operative learning partnerships between companies, and for this arrangement to be the norm rather than the exception (e.g. occurring only when the host company is unable to cover the entire curriculum).

In Australia, apprenticeships and traineeships are managed by the government funded initiative, Australian Apprenticeships (www.australianapprenticeships.gov.au). Employers, apprentices, and RTOs enter into a legally-binding training contract that details the apprentice's training. This training can lead to national qualifications in the Australian Qualifications Framework (AQF). The roles of employers and apprentices are outlined in the National Code of Good Practice for Australian Apprenticeships. While employers are required to enrol their apprentice with a RTO, and provide workplace supervision and support, apprentices are expected to fulfil their training and work responsibilities. Employers pay apprentices a wage for the duration of the apprenticeship, which usually

increases as they progress through their training plan. The government has also introduced funding schemes to provide employers and apprentices with financial assistance (e.g. for apprentices aged 25 or over, and apprentices with disabilities). Within the Australian Apprenticeships model, there are Group Training Organisations (GTOs) that employ apprentices and hire them out to host companies for work experience. This arrangement of giving apprentices a wide range of workplace learning opportunities as they rotate from one company to the next is an implementation of the requirements identified in Germany for a well-rounded workforce. In addition, it allows smaller companies without the necessary resources to recruit apprentices.

Like Australia's Australian Apprenticeships, the United Kingdom has the National Apprenticeship Service (NAS) (www.apprenticeships.org.uk) that funds training programmes developed by Sector Skills Councils (e.g. National Vocational Qualifications (NVQs). There are many similarities between the NAS and Australian Apprenticeships systems with minor difference in implementation, such as NAS's online vacancy system for potential employers and apprentices. Employers who are keen on having apprentices discuss their needs with a learning provider, and can recruit their own apprentices by posting their advertisement on NAS's online vacancy system. Individuals who are interested in the apprenticeship programme can log into this online system to search for vacancies posted by employers and providers. Learning providers are responsible for negotiating the apprentice's training plan with the apprentice and employer, and tracking the apprentice's learning. As apprentices are usually employed on a full-time basis, they spend most of their training at work with the support of a nominated manager and take time off work (one day or a block of days) to attend classes by at the provider's premises. Throughout their apprenticeship (one to four years), apprentices are paid by the employer, though the cost of training is subsidised by the government based on the apprentice's age and industry sector (e.g. the cost of training for apprentices aged 16 to 18 is fully funded).

2.4 Workplace assessment

In considering assessment of learning in the workplace for the purposes of gaining a qualification, it is useful to consider the purpose and value of such assessment: the answers to these questions, impact on the assessment tools and processes used. When assessment takes place in the workplace based on the everyday performance of an individual and evidence is readily available, there is little cost to the learner (Eraut, 2002) and something to gain in the form of a qualification. However, once formal examinations are introduced you are no longer assessing workplace learning; rather you are assessing codified, explicit knowledge. The challenge is to use assessment tools that are of value to the learners as part of their

learning, of value to the workplace and to the institutions undertaking assessment, and accrediting assessment outcomes.

Assessment tools such as portfolios, work-based projects and action research have been found to impact positively on changes in work practices, thus contributing not only to the growth and development of the individual learner and their gaining of a qualification but also the workplace itself (Eraut, 2002). Part of the reason for this is that such assessment tools provide "a valuable reflective dimension and provide formative as well as summative evaluation for the learner" (ibid., p.70). The use of examinations and tests, for example, are generally an assessment of codified knowledge, of learning that is explicit; it is easy to gather evidence of this learning. However, assessment of tacit knowledge that can be described as the hidden part of the iceberg of 'knowing', that is, knowing how to use theoretical knowledge (Eraut, 2004, p. 220) is not as easy as assessing codified knowledge. There is a need to recognise and value the relationship between theory and practice in an integrated way that is explicit in assessment processes and assessment tools. The dangers of being too prescriptive are spelt out by Eraut.

[T]here is now a ... danger of important work-related knowledge being squeezed out of professional and vocational qualification by over-restrictive specifications of competence fuelled by a political culture that increasingly looks for quick-fix solutions. Nowhere is this more evident than in the growing desire for contextually insensitive modes of external assessment that reassert the hegemony of formal workplace knowledge in the name of rigour. For authentic, work-based learning the influence of many assessment regimes might be better described as 'rigor mortis'. (Eraut, 2002, p.76)

Eraut's warning is a reminder of the need for flexibility in assessment systems. His comments also remind us of the nature of workplace learning, and that learning in the workplace is situated, that theory and practice are integrated. Equally it is problematic to assume that assessments should be entirely contextualised to the workplace if the purpose of a national qualifications system is portability and recognition of qualifications. The purpose of assessment, of assessment processes and systems and their implementation will have unintended consequences that those engaged in a system need to be aware of.

The following section provides some details of competency-based systems and their arrangements for assessment in Australia's AQF, the United Kingdom's NVQ and compares them with the Singaporean WSQ.

2.4.1 Workplace assessment arrangements

In official documents produced by Australia's AQF and the United Kingdom's NVQ, there is an explicit emphasis on assessment in the workplace. For example, the NVQ resource pack (2008, p. 8) states that:

> "Assessment is normally through on-the-job observation and questioning. Candidates produce evidence to prove they have the competence to meet the NVQ standards. The assessor tests candidates' knowledge, understanding and work-based performance to make sure they can demonstrate competence in the workplace. In many cases the 'assess train assess' model will be employed. Assessment usually takes place when the candidate is ready. On the whole there is no need for attendance at college and written tests are kept to a minimum (depending on the type of NVQ)".

Similarly, assessors for AQF qualifications are required to complete units under the Training and Assessment Training Package (http://www.ntis.gov.au/Default.aspx?/trainingpackage/TAA04), and units that cover the development of assessment tools (TAAASS403B) and assessment of trainee's competence (TAAASS402C) acknowledge the value and importance of conducting assessment outside the classroom (and inside the workplace). For example, assessors need to design and develop their own assessment tools to collect evidence that determine a trainee's competency, and they are encouraged to "contextualise" and consider "the context in which the assessment will take place". Under the heading "assessment methods", some examples of techniques that are recommended include direct observation of real work/time activities in the workplace or a simulated environment, and third party feedback of testimonials/reports from employers and supervisors.

Interestingly, even though Singapore's WSQ framework draws on the NVQ and AQF in terms of being a system that is based on "open-access, competency-based training and assessment, industry-driven standards development, and an agreed set of national standards" (ACTA-CU 1 Interpreting WSQ, 2009, p. 20), it appears that the WSQ has not fully adopted the workplace learning assessment arrangements available in the NVQ and AQF. For example, the ACTA-CU 6 on conducting assessment does state that evidence of a trainee's competency may be collected through the "observation of workplace performance" (ACTA-CU 6 Conduct Assessment, 2009, p. 70). However, the types of evidence gathered and the assessment methods used are determined by pre-existing assessment plans. The lack of flexibility given to assessors to develop their own assessment plans and tools means they are required to keep to what is stipulated in the assessment plans given to them, even if this means classroom-based assessment. The language used in official WSQ documents does not make for or encourage the possibility of workplace assessment.

2.5 Partnerships for workplace learning arrangements

The prevalence of workplace learning and assessment arrangements within the VET sector has resulted in a greater need for strong partnerships between training providers and companies in the industry (and sometimes a third party that co-ordinates this relationship). Collaboration between trainers and employers helps trainees to integrate what they learn in the classroom and at work, and vice versa. In the following sections, we examine what successful provider-employer partnerships involve, and the benefits and challenges of such partnerships.

2.5.1 What successful provider-employer partnerships involve

Successful provider-employer partnerships develop over time and depend on the strength of the training culture that exists within particular industry sectors. In addition, as with any type of relationship, good communication between training providers and employers is one key factor in determining the success of workplace learning partnerships. In a study of provider-employer partnerships in Australia, respondents highlighted the importance of open, honest and regular communication as this enables both partners to work together effectively (Callan & Ashworth, 2004). Active communication also assists in facilitating links between theoretical lessons in the classroom and practical experiences in the workplace, especially if the curriculum focuses on work-based learning (Deitmer & Heinemann, 2009). One main aspect that needs to be communicated is the roles and responsibilities that each organisation need to fulfil. In her report on fully on-the-job training, Wood (2004) noted that the onus was on providers to explain what they expected from employers, ensure that employers have the capacity to teach trainees, and offer employers advice and support in the form of additional training and resources. To help manage channels of communication, some providers and employers have turned to training co-ordinators (or a third party) to act as a go-between.

Assessment tools and other forms used to gather evidence can also either support and enhance the provider-employer relationships, or be sources of frustration and miscommunication. An example of such documentation outside of this study and outside of competency-based training systems but provides a useful example is the documentation used for teaching professional practice at the University of Tasmania (www.educ.utas.edu.au/profexp). The roles and responsibilities are clearly set out for the pre-service teacher, the "colleague teacher" in the school (equivalent to a workplace supervisor), and the University lecturer. This documentation is supported by running workshops for colleague teachers to build shared understanding and strengthen relationships, and University lecturers are required to visit pre-service teachers at the schools to which they have been "posted". At one stage, an assessment rubric was in use, setting out standards for each year in which professional experience is undertaken against the national standards adapted for the purposes of the rubric. This allowed colleague teachers to indicate if they

considered the pre-service teacher to be at, above or below the relevant standard for each of the criteria while also providing a "road-map" for the pre-service teacher.

2.5.2 Benefits of provider-employer partnerships

Partnerships between providers and employers benefit both groups in different, but equally important ways. The sharing of knowledge and expertise helps training providers to tailor their programmes to meet the needs of the industry, and this gives employers a pool of competent employees with the necessary skills. Research on employers' perceptions of their own engagement with further education colleges in England found they were mainly concerned with the relevance of the training programme, "it should be linked to workplace practices, up to date and reflecting the changing needs of the sector and its workforce" (Hughes & Smeaton, 2006, p. 12). Employers who are positioned as co-training partners can also be involved in the development of curriculum material, and contribute to teaching and learning in classrooms (e.g. as guest speakers) and at the workplace (e.g. as assessors). For partnerships in which training providers conduct in-house training for a company, there is the opportunity for staff from both organisations to engage in collaborative learning, and through this process, trainers are able to keep up to date with the latest trends in the industry, and employees are able to develop new skills (e.g. training and assessing other employees) (Callan & Ashworth, 2004). Another benefit for these training providers is that they gain positive recognition within the industry sector, and this can increase their training operations (Callan & Ashworth, 2004).

2.5.3 Challenges for provider–employer partnerships

The main challenges of provider-employer partnerships relate to the quality of trainees' workplace learning, and this is where having clearly defined roles and responsibilities can be useful. However, even if employers know what they are supposed to do, they may not understand how to go about supporting trainees or have adequate skills and resources to do so. While training providers can offer the necessary information, this alone does not ensure that work-based learning is of a high quality. This is because some employers are more interested in taking in labourers instead of learners (Schofield 2000). In the Australian apprenticeship model, some employers have apprentices because of the financial incentives they receive from the government, and are not interested in supporting teaching and learning practices in the workplace. Training providers can play their part by only choosing to work with genuine employers and follow up to see if they are meeting training requirements or if training is actually taking place.

2.6 Summary

This literature review has examined different theoretical perspectives of workplace learning and provided a discussion on the notion of knowledge because our understandings of learning are influenced by what we consider "knowledge" to be. We highlighted the tendency for vocational education and training curriculum documents to place value on knowledge as a static entity rather than a fluid process, and that this impacts upon what and how trainees learn. We went on to discuss the importance of ensuring that trainees are able to transfer what they learnt in the classroom into the workplace, and how this process is hindered by the separation of theory and practice. Examples of the types of learning processes and strategies used in the workplace, and of different workplace learning and assessment arrangements were provided. Finally, we gave an overview of provider-employer partnerships, a key aspect of integrating workplace learning into vocational education and training. In the following sections, the ideas explored in the literature review are applied to our research project on workplace learning and assessment in relation to Singapore's WSQ framework. The following chapter will describe how the research was undertaken.

3.0 Research project: What we did

3.1 Method

This project relied heavily on a qualitative approach and drew on existing quantitative data.

 Semi-structured interviews were used to help:

1. Identify the dominant ways in which workplace learning and assessment is understood and valued, and analyse their implications; and

2. Identify the variety of workplace learning and assessment arrangements.

These interviews were conducted with five different stakeholder groups (policy advisors, training providers, supervisors, trainees, and peak employers), capturing perspectives from a vertical slice of personnel allowed for a range of different experiences and perspectives on workplace learning and assessment.

As part of identifying different workplace learning arrangements, we also approached policy advisors from WDA's Quality Assurance Division (QAD), and training providers for data to:

1. Identify the statistical data collected about workplace learning and assessment; and

2. Analyse any available data and identify what further statistical data would be useful to collect.

3.2 Sample

A purposeful sample of 11 WSQ frameworks was selected from a population of 24 frameworks (see Table 1). We based our sample on a WSQ report prepared by WDA's QAD on 22 February 2010. It showed that for the period between October and December 2009, there were 24 WSQ frameworks and 487 unique Approved Training Organisations (ATOs). There are four different types of ATOs:

1. Public ATOs offer training to the general public (35%);

2. In-house ATOs offer training to their own employees (34%);

3. Public and in-house ATOs offer both public and in-house training (21%); and

4. Continuing Education and Training (CET) centres offer public training, and additional services such as employment advisory and placement. CET

centres are also expected to monitor the workers' training and placement activities according to the reporting requirements (10%).

Table 1. 24 WSQ frameworks and their corresponding ATOs

WSQ frameworks	Public ATOs	In-house ATOs	Public and in-house ATOs	CET centres	Total
Aerospace	3	7	2	1	13
Community and Social Services	15	0	18	5	38
Creative Industry	9	1	4	6	20
Employability Skills	41	2	14	4	61
Finance	9	8	0	5	22
Floristry	3	0	1	0	4
Food and Beverage	33	51	11	3	98
Generic Manufacturing	19	19	8	4	50
Healthcare Support	4	4	6	2	16
Human Resource	4	1	5	1	11
Infocomm Technology	11	1	4	4	20
Landscape	2	1	0	1	4
Leadership and People Management	8	6	11	0	25
Precision Engineering	14	12	2	4	32
Process Industry	5	3	7	3	18
Retail	16	19	7	2	44
Security	19	2	6	1	28
Service Excellence	30	14	14	11	69
Textile and Fashion Technology	1	0	0	0	1
Tourism	39	44	19	4	106
Training	16	1	12	1	30
Wafer-Fabrication	0	6	0	0	6

Workplace Safety and Health (Marine)	4	1	6	0	11
Workplace Safety and Health (Professional)	7	0	4	4	15

*note: The total number of ATOs adds to more than 487 because an ATO may support more than one WSQ framework.

The 11 WSQ frameworks (Aerospace, Community and Social Services, Creative Industry, Finance, Food and Beverage, Landscape, Precision Engineering, Process Industry, Retail, Security, and Training) were selected based on three main criteria:

1. First, the frameworks are supported by at least one CET centre each. We were particularly interested in WSQ programmes delivered by CET centres because they are required to undergo a rigorous accreditation and continuous improvement review process to maintain the standards and quality of their delivery;

2. Second, except for training, all of the frameworks are industry-specific rather than generic. This is important because workplace learning arrangements are influenced by the context of the industry in which they exist; and

3. Third, in order to capture a variety of industries but operate within the limits of the project's resources where there were a number of frameworks from the same or similar industry, we only selected one as a representative.

For each framework, semi-structured interviews were conducted consecutively with their corresponding policy advisors, training providers, supervisors, and trainees. Different sampling procedures were used to identify respondents.

3.2.1 Policy advisors

Policy advisor respondents were key personnel from WDA divisions responsible for each framework (see Table 2), WDA's QAD, and Incentives and Policy and Management Division (IPMD).

Table 2.   Respondents (policy advisors)

WDA divisions	WSQ frameworks	Policy advisors
Creative and Professional Services	• Community and Social Services • Creative • Finance	0*
Healthcare, Retail and Business Services	• Landscape • Retail • Security	1
Manufacturing and Construction	• Aerospace • Precision Engineering • Process Industry	2
Quality Assurance	• Training	3**
Tourism	• Food and Beverage	2
Total	11	8

*Note: Policy advisors from the Creative and Professional Services Division have not participated in this research project to date.

**Note: Policy advisors from the Quality Assurance Division commented on a range of WSQ frameworks.

3.2.2 Training providers

Following interviews with the eight policy advisors, contact was made with CET training providers from the 11 WSQ frameworks. Based on the list of CET centres on WDA's website (http://app2.wda.gov.sg/wsq) that was accessed in February 2010[1], we identified the training providers that delivered WSQ training programmes with some form of workplace learning arrangement. This was done by conducting

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[1] The list was verified again in March and April. Our understanding is that the list is constantly being updated by WDA.

Internet searches and making telephone enquiries on the courses that they delivered. We also sent our final sample list to policy advisor respondents for confirmation. Our aim was to conduct interviews with at least two CET training providers from each WSQ framework. However, this was not possible when:

1. The CET training provider declined or did not respond to our request for participation;

2. Policy advisor respondents advised us against contacting them; or

3. The WSQ framework was only supported by one CET centre.

From the 11 WSQ frameworks, we approached 17 different training providers. Five of them declined, mainly because they could not set aside time for the interviews. For the remaining 12 training providers who agreed to participate in this project, we visited each of their sites, and interviewed the person who had a general overview of the WSQ training programmes (see Table 3).

Table 3.   Respondents (training providers)

WSQ frameworks	Training providers
Aerospace	1
Community and Social Services	2
Creative Industry	2
Finance	0*
Food and Beverage	1
Landscape	1
Precision Engineering	1
Process Industry	1
Retail	1**
Security	1
Training	1
Total	12

*Note: The training providers we approached for the Finance WSQ framework declined to participate in this research project. As a result, we dropped the framework from this research project.

**Note: The training provider we approached for the Retail WSQ framework was not a CET centre, but an in-house ATO. This sampling decision was made as in-house training providers have facilities that allow for close links between classroom and workplace learning.

3.2.3 Supervisors and trainees

The supervisors and trainees involved in our research project were contacted through snowball sampling. At the end of our interviews with training providers, we asked them for the names of companies with staff who had completed or were close to completing their WSQ programmes. These companies were either contacted by the training providers or the researchers on this project. From each company, we aimed to interview one supervisor (someone from the HR department or who has managerial duties), and two trainees (see Table 4).

Table 4.   Respondents (supervisors and trainees)

WSQ Frameworks	Companies	Supervisors	Trainees
Aerospace	1	1	2
Community and Social Services	1	1	1
Creative Industry	1	1	0*
Food and Beverage	2	2	4
Landscape	2	2	2
Precision Engineering	0**	0	0
Process Industry	0**	0	0
Retail	1	1	2
Security	2	2	3
Training	1	1	2
Total	11	11	16

*Note: The trainee for the Creative Industry company resigned before we could schedule an interview with her.

**Note: At this stage, we have been unable to gain access to companies from the Precision Engineering and Process Industry frameworks.

3.2.4 Peak employers

Four peak employer bodies (Chambers of Commerce for the three main ethnic groups, and an employer federation) were selected and approached for this research project. In each organisation, we spoke to the person who had a good overview of the organisation's operations (e.g. the Chief Executive Officer or the Secretary-General).

3.3 Interviews

All respondents were interviewed using semi-structured interviews (see Appendix A). In the early stages of interviewing, minor modifications were made to questions based on respondents' responses and feedback (e.g. language was refined, questions were re-worded, and more prompts were included). Interview questions elicited responses on each respondent's personal as well as their organisation's understanding of and stance on workplace learning and assessment in relation to the WSQ framework. While questions about work roles and processes were contextualised for the five different respondent groups, everyone was asked the same questions about their thoughts on learning and workplace learning (e.g. definitions of learning, workplace learning, OJT, how and where they learned useful knowledge, skills, attitudes, and preferred ways of learning).

3.3.1 Policy advisors

Policy advisors provided us with a broad overview of the WSQ programmes their divisions supported, specifically the ones with workplace learning arrangements. They also discussed how workplace learning is understood and valued within their industry sectors, the challenges they face in incorporating workplace learning into WSQ programmes, and provided suggestions as to how they could incorporate workplace learning into the WSQ framework.

A meeting was also arranged with two QAD policy advisors from Skills Connect, an online management system that ATOs access to upload information on the WSQ programmes they deliver. The data captured in Skills Connect help to ensure that all programmes meet WDA's accreditation requirements and is also used for audit purposes. ATOs submit information for the following compulsory fields:

1. Course title, objective, and content;

2. Certification title, and type (statement of attainment, and qualification);

3. Competency standard(s) covered (competency standards, recommended training hours, and recommended assessment hours);

4. Accreditation scope (assessment only, training and assessment, and training only);

5. Framework/industry conceptualised (e.g. Tourism);

6. Declaration of trainer/assessor(s) (name, and identification number);

7. Area of training (computer-related, management and supervisory, technical production and engineering, technical services, trade and craft, productivity and quality related, and others);

8. Target training group (in-house, and public), group occupation (managerial, non-supervisor, and supervisor), and audience;

9. Location of training (mutual benefit organisations, and mutual benefit branch);

10. Mode of training (full time, and part time);

11. Language medium provided (Chinese, English, Malay, Tamil, and others);

12. Course administrator's name, designation, and contact number; and

13. Duration components.

Before their programmes can be accredited, ATOs are required to provide a breakdown of their training hours. The three official categories for training hours are: classroom, OJT, and e-learning. For the purposes of this project, a QAD policy advisor extracted information about WSQ programmes and their corresponding training hours from the Skills Connect database, and input the data into four Excel spreadsheets, one for each year from 2006 to 2009. After analysing the Skills Connect data, we approached two IPMD policy advisors to gain a better understanding of the relationship between funding policies and modes of training delivery.

3.3.2 Training providers

Training providers were asked for details about the WSQ programmes they delivered, especially customised programmes for workers in actual work environments. We wanted to understand the links between lessons in the classroom and training in the workplace, the types of support trainees received in the workplace, and if the work completed by trainees in the workplace was recognised and assessed. We were also interested in their perceptions of how well established the idea of workplace learning is within their own industries. At the end of our interviews, we requested curriculum documents (e.g. trainer and learner guides) to check if they spell out any links between classroom and workplace learning. Lastly, we handed training providers a list of Skills Connect data fields and asked if they collected any other data outside of what WDA requires from them.

3.3.3 Supervisors and trainees

Supervisors and trainees described their roles in the organisation and involvement with WSQ programmes that had workplace learning components. Supervisors from companies that hosted or were hosting trainees on their attachments were able to give details on how they supported workplace learning. The majority of trainees we interviewed had completed their WSQ programmes, and were able to reflect on the link between their classroom lessons and work attachments, and how relevant the WSQ programme has been for their current jobs.

3.3.4 Peak employers

Representatives from peak employer bodies were approached to gain an overview of their perspectives on workplace learning and identify any policies they may have in this area. Their policies on workplace learning are important because they have the potential to influence the training arrangements adopted by member organisations.

3.4 Analysis

Both qualitative and quantitative data were collected from stakeholders, and they were analysed differently. Qualitative data were transcribed and coded, and quantitative data were presented in Excel spreadsheets and filtered for the required fields.

3.4.1 Qualitative data

Different cuts of the interview data were taken to check for similarities and differences across WSQ frameworks and stakeholder groups. All interviews, except one because the respondent declined, were audio taped and transcribed. The researchers individually coded a sample of interviews, came to a consensus on the codes and tested it on another sample of interviews before coming up with the final coding schedule (see Appendix B). All interviews were coded against this schedule in NVivo, software that assists with qualitative data analysis. In addition, case studies for completed frameworks were written to identify the main workplace learning and assessment arrangements within each industry (see Appendix C).

3.4.2 Quantitative data

The Skills Connect data from QAD had six different fields: the ATO's name, the WSQ programme's name and code, the frameworks/industries of these programmes, the mode of delivery, and the number of hours for each delivery. The database contained information for all WSQ programmes that had been accredited from 2006 to 2009. We filtered the fields for each mode of delivery (e.g. OJT, and

classroom) and counted the number of entries in each category to gain a better picture of the number of programmes under each delivery, and the frameworks/industries these programmes belonged to.

At the end of their interviews, all 51 respondents were asked to order a series of cards with different learning strategies from their most to their least preferred way of learning. The cards included ways of learning applicable to the classroom and workplace. Their preferences were entered into an Excel spreadsheet and were ordered numerically. The numbers attributed to each strategy were added up and the totals were ranked again to give an overall picture of respondents' general preferences.

3.5 Limitations of the project

It should be noted that as an exploratory study, this research project did not aim to be comprehensive in its identification of all forms of workplace learning within the WSQ framework. Instead, this study is indicative of what exists. Our sample within each framework, while providing sound and thorough vertical data, did not extend horizontally across the frameworks beyond one or two examples.

4.0 Workplace learning, OJT and classroom learning: What we found

4.1 Introduction

The findings presented in this chapter are from the quantitative and qualitative data collected from stakeholders. The implications of these findings are discussed in the final chapter. This chapter commences with findings from Skills Connect statistical data that details the extent to which different modes of delivery, including OJT and classroom training, are used. This is followed by a section describing the different arrangements for learning in the workplace and the support for workplace learning within the frameworks investigated in this study. Lastly, the ways in which workplace learning is defined and valued, and the types of learning and assessment processes in the workplace precede the final section, challenges in WSQ workplace learning.

4.2 Skills Connect statistical data

Skills Connect collects data on three official modes of delivery: classroom, OJT and e-learning. As explained in the previous chapter, the data is for all accredited WSQ programmes from 2006 to 2009. A noticeable aspect of the data is that the field for training delivery does not contain e-learning but captures additional information on practical/practicum, course training (excluding assessment) and supervised field training hours. A breakdown of the number of WSQ programmes for each mode of delivery by year is shown in Table 5.

Table 5.   Number of WSQ programmes in each category (data from Skills Connect)

Year	Classroom	OJT	Practical/ practicum	Course training (excluding assessment)	Supervised field training
2006	1574	4	59	NA	NA
2007	1850	8	42	2	NA
2008	1805	4	24	29	1
2009	17552	NA	NA	NA	NA
Total	22781	16	126	31	1

*Note: This table excludes programmes that have no hours allocated.

A striking feature of the Skills Connect data is that the majority of WSQ training is classroom-based. According to this data, there had only been 16 programmes with OJT from 2006 to 2009, 126 with a practical/practicum component, and one with supervised field training. The WSQ programmes with workplace learning components come from the following frameworks/industries:

1. Manufacturing, Reflexology-Related Services, Retail, Service Excellence, Spa Services, Tourism, Training and Adult Education;

2. Practical/practicum – Call Centre, Commercial and Industrial Cleaning, Community and Social Services, Departmental Store, Domestic Household Services, Eldercare Service, Food courts, Hairdressing, Hotel, Information Technology, Life Insurance, Marine, Nursing Home, Patient Care Services, Real Estate Sales, Reflexology-Related Services, Security, Spa Services, Tourism; and

3. Supervised field training – Aerospace.

Compared to previous years, there is a huge increase in the number of WSQ programmes accredited in 2009. This can be attributed to the Skills Programme for Upgrading and Resilience (SPUR) funding scheme that was introduced during the economic recession. The aim was to provide training for workers through new WSQ frameworks (e.g. Wafer-Fabrication) and programmes (e.g. PCP) to help them transit to new ones. Two possible reasons for the emphasis in these statistics on classroom delivery are1) funding allocation and 2) issues with reporting.

The exclusive delivery of classroom training in 2009, and as the major mode of delivery in previous years, may be due to the way funds are allocated. There is no difference in how various modes of delivery are funded (e.g. one hour of classroom training is funded at the same rate as one hour of OJT). However, funding is capped at a given number of hours per programme and is outcome-based (e.g. results in employment for the trainee). With this in mind, some training providers may be more inclined to focus solely on classroom-based training as there is a perception that OJT requires more hours, and takes a longer time to deliver "outcomes" (e.g. paper qualifications for employment).

Another possible explanation for the low numbers in OJT delivery is that even if training providers offer OJT, practical/practicum or supervised field training, they are not reporting this. Firstly, there are no formal definitions for the different modes of training delivery, for example, the term "OJT" is thought to be generally understood by training providers because it is "widely used" (policy advisor). However, the Advanced Certificate in Training and Assessment (ACTA) WSQ programme (ACTA-CU 1 Interpreting WSQ, 2009, p. 37) does give a definition:

> On-the-job training typically tries to mimic the normal working situation of the learners. It can be conducted at or away from the work site. It usually uses the actual tools, equipment, documents or materials that learners use at work.

Some of the training providers we interviewed did not consider their delivery to be OJT because they were under the impression that OJT had to take place within an actual workplace. This was the case even if they were delivering training that fitted with the ACTA definition stated above. For example, conducting pseudo workplace learning in a simulated environment located the training centre. The following quote typifies the way in which many training providers talked about OJT.

> I think most companies would actually adopt the non-structured OJT, meaning to say a person who comes in, then after that, they are put on the job, and they have somebody who is more senior or more experienced, and they work together.

Secondly, some training providers that offer PCPs with workplace attachments explained that they did not report on this aspect of the training because it is

separate from the WSQ. For them, the WSQ programme ends when trainees receive their WSQ qualifications, and this usually happens before trainees start their attachments, so there is no relationship between classroom delivery and the OJT experience. Thirdly, even though it is compulsory for training providers to fill in their training hours in Skills Connect when they register their course for accreditation, they do not have to adhere to their entries because they are allowed and encouraged to contextualise their training according to the trainees' needs.

Training providers were generally puzzled as to why WDA required so much data from them, "troublesome, it's too detailed, a few [fields] are not necessary" (training provider). For example, one training provider commented that she did not understand why they had to provide their assessors' National Registration Identity Card (NRIC) numbers. One policy advisor explained that "when the spec[ification] of Skills Connect was first drawn and submitted for the making of the system, it was like, let's just collect some basic information that would not in a way infringe into the privacy of the learners". Besides programme evaluations by trainees and trainers, the training providers we interviewed did not collect any other data outside of what Skills Connect required, "I would defy anybody to find a field that hasn't already been covered by WDA" (training provider). Also, the lack of definition of OJT contributes to pervasive thinking that classroom learning is more 'effective' than workplace learning, and it becomes self-reinforcing that classroom is the preferred delivery and assessment mode.

4.3 Arrangements for workplace learning

Case-studies were written for the seven frameworks (Aerospace, Community and Social Services, Food and Beverage, Landscape, Retail, Security, and Training) in which we were able to interview a vertical slice of stakeholders; from policy advisors to workers (see Appendix C). These case studies set out the different arrangements for WSQ programmes and workplace learning. The case studies were sent to the respective stakeholders and changes were made based on their feedback. The comments they gave included clarifying the use of certain terms, elaborating on the rationale behind different classroom or workplace arrangements and responding to statements made by other respondents.

In addition to the case-studies with specific details about the workplace learning and assessment arrangements found within each industry (see Appendix C), we also looked across the industries and identified four common arrangements. Each arrangement was adopted by at least two training providers from different WSQ frameworks (see Table 6).

Table 6.   Types of workplace learning and assessment arrangements and their corresponding WSQ frameworks

Main arrangements	WSQ frameworks
Work attachments with no formal link to classroom learning (the programme has a classroom and a workplace component but these are perceived as entirely separate from each other).	• Security • Precision Engineering
Work attachments with some link to classroom learning (classroom and workplace components where there is a link between classroom and workplace).	• Community and Social Services • Food and Beverage • Retail • Training
Highly simulated workplaces (carrying out authentic tasks in physical spaces that mimic the workplace, using tools used in the workplace and some attempt to mimic working relations such as team work, and individual work).	• Aerospace • Creative Industry • Landscape • Process Industry

| Structured workplace visits (trainees visit actual workplaces and observe how employees carry out daily tasks and observe the working environment and work flow). | • Community and Social Services
• Retail |

*Note: Some frameworks use multiple arrangements. This table highlights the main arrangement(s) used by each training provider.

4.3.1 Work attachments with no formal link to classroom learning

Figure 1.　　No link between classroom and workplace learning
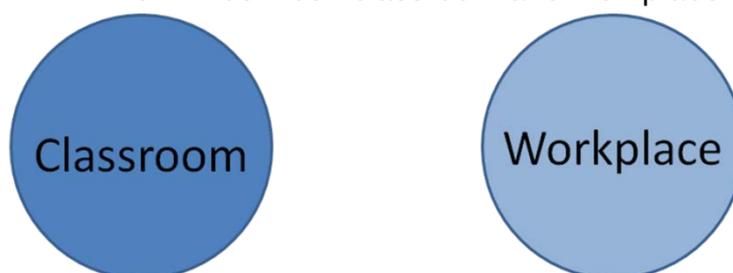
While some WSQ programmes require trainees to complete both classroom and workplace learning, these two components in programmes classified in this section are thought of as separate parts as, "we have yet to revamp our WSQ to include the OJT part, I think that is quite lacking in the WSQ module currently" (policy advisor). The Security and Precision Engineering WSQ frameworks have Train and Place PCPs that do not formally link what takes place in the classroom with what happens at the work attachment site, and vice versa. Trainees in this scheme usually spend a specified amount of time in the classroom, complete their assessments and obtain their qualifications before moving into actual workplaces. One policy advisor commented that "[for] our current PCP programme, the attachment is not built into the WSQ" (policy advisor). She went on to explain that in some instances, trainees who do not successfully complete their mandatory attachments will not obtain a Statement of Attainment for this particular aspect of the programme.

Individuals in the Security and Precision Engineering PCPs have to undergo training in the classroom before they start their industry attachments. During their OJT, trainees periodically return to their CET centres for additional classes. The assumption is that trainees will bring to the classroom any problems they faced in the workplace, and discuss these concerns with their trainers and peers, "learning by doing the work at the industry attachment, and discussing, and problem solving with others" (training provider). However, there are no formal arrangements in place to ensure the work and classroom link is established.

Trainee security guards reflected there was little or no connection between what they learned in the classroom and what they experienced during their OJT , "many things that I have learned in the class which is practical workshop stuff, is not

applicable" (trainee). These trainees acknowledged that they picked up "the gist" or "a very brief form" of their job scope from classroom lessons but this was inadequate. For example, their CET centre has a patrolling route located along the classroom corridor that is "not so real", compared to a route in an actual workplace that would be "very real for [trainees]" (policy advisor). Security trainees noted that more often than not, they had to learn new systems with minimal support from their attachment supervisors.

Both security and engineering trainees are also only assessed within the confines of the classroom or laboratory environment. When the career consultant from the engineering training centre contacted attachment supervisors to find out about the trainee's progress, the feedback they receive did not have an impact on the individual's assessment. According to a policy advisor, "there is definitely room for improvement in terms of aligning the classroom and the OJT part".

4.3.2 Work attachments with some link to classroom learning

Figure 2.   Links between classroom and workplace learning
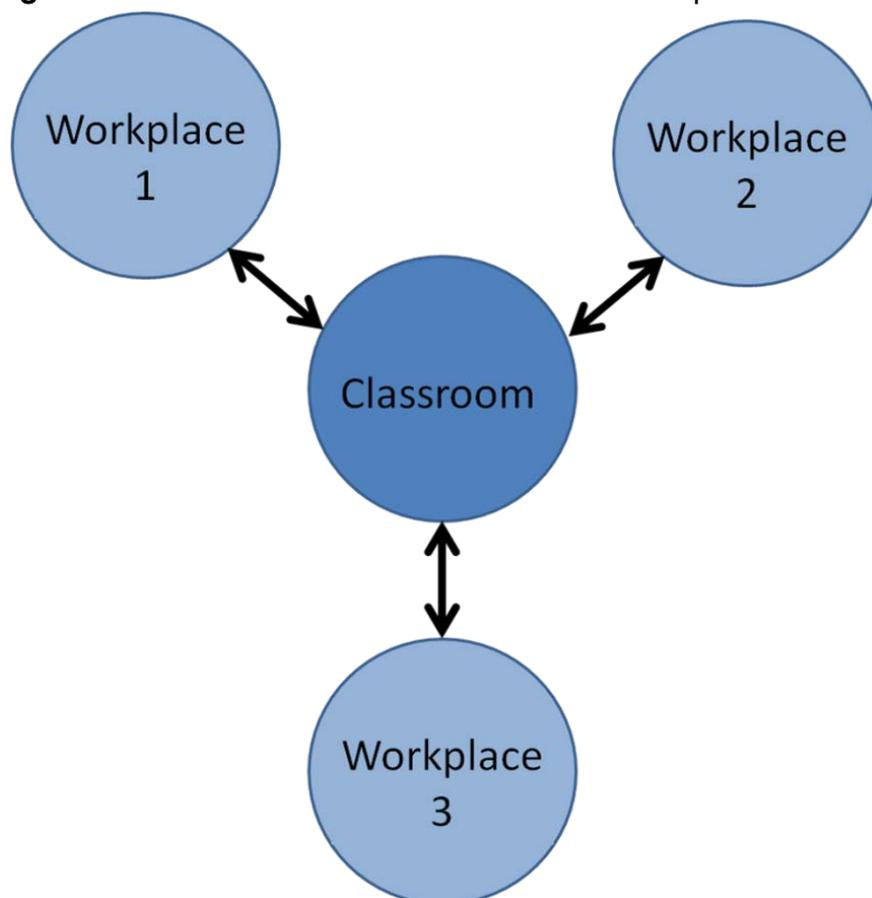
According to one policy advisor, when the "objectives and learning outcomes [of classroom and workplace learning] are mapped properly and aligned, then it can be quite a powerful tool in terms of inculcating whatever skills that are required onto the learners". Some training providers have attempted to align their class and work

components through links in the form of formal curriculum documents, and communication between the training provider and workplace supervisors. A policy advisor believed that it would be ideal if workplace learning was structured so as to ensure that both trainees and their supervisors know what is expected of them. Currently, "[trainees] don't really get an assigned mentor, except for your direct reporting [supervisor], and it's very much [learning through] your day-to-day work, instead of having a standard checklist to say what are your learning objectives or task list that you fulfil" (policy advisor).

Trainees in the Community and Social Services, Food and Beverage, Retail, and Training WSQ frameworks have to train in actual workplaces as part of their training and qualifications. This workplace component is sometimes referred to as workplace/industry attachment, OJT or apprenticeship, and they involve formal arrangements that help trainees establish links between what they learn in the classroom and at the workplace. These links are put in place by training providers in different ways. First, training providers select their attachment partners based on whether or not they are able to provide opportunities for students to learn. Second, training providers brief supervisors on their roles and responsibilities. A training provider for the Community and Social Services framework explained that their trainers will go to the attachment sites to meet with the staff members, and give them an overview of the course curriculum, and a checklist of "what are the areas of competency that respondents are supposed to demonstrate, and the skill sets, and so on" (training provider). Third, trainers provide supervisors with information about the trainee's learning needs, "if [trainers] feel that the trainees don't have the confidence or need some help or guidance, then we'll inform the supervisors to maybe pay some attention [to them at the workplace]" (retail training provider). This is a two-way link in a partnership arrangement between the training provider and supervisors.

In some workplaces, supervisors took it upon themselves to directly relate what trainees do at work to what they learnt at school. For example, one Food and Beverage trainee noted that during his attachment, he was able to apply the skills he had picked up in the classroom (e.g. after a pastry module at school, he would work in the pastry kitchen). This was only possible because the in-house chefs at his workplace rotated his duties according to the units he was taking. Trainees from the Training WSQ framework also found their attachments useful because of the support and guidance they received from their supervisors. Their supervisor noted that he would sit down with them and discuss ways in which they can apply their knowledge at work *:*

> [the] ACTA programme is very timely and very practical oriented if you give them additional training, compared to people going just purely for the training, people going for training with attachment, definitely the one with attachment is the best if you ask me (supervisor).

Besides the supervisors, training providers also work with trainees to help them see the relevance of and connection between their class and work components. Trainees are expected to keep a written record of what they learnt during their OJT. For example, trainees in some of the Community and Social Services, Food and Beverage, and Training WSQ programmes record and reflect on their workplace experiences in learning journals or log books. Their entries are signed off by their workplace supervisors and are checked by the training providers. One of the training providers in the Community and Social Services framework also noted that they set aside time to debrief trainees at the end of each day. These sessions give trainers the opportunity to address any questions they may have, "[trainees ask], 'How come what I learn in the classroom isn't [the same as what I learn in the workplace]? How come they teach me in this way? So who is right? Who is wrong?'" (training provider). The feedback is used by the training provider to improve their attachment programme, "what areas our students find useful, the areas our students find that perhaps, [supervisors] can give them more opportunity"(training provider). The Food and Beverage training provider also noted that they publicly award supervisors who have been outstanding (e.g. Mentor Chef Award) and terminate partnerships with those who do not provide adequate support.

For some trainees, the work that they do during their attachment is recognised and assessed at the work sites. A trainee in the Community and Social Services industry recalled that his supervisors observed and assessed how he planned and organised an outing for patients to a sensory place, "they see the efficiency, the time taken and how you handle contingency". Retail (cashier) trainees are also assessed in the store based on a checklist given to them when they start their 22 hours of OJT. According to their training provider, "we're actually doing both [classroom and workplace assessment] now, supplementing one and the other" (training provider).

The arrangements described in this section are similar across the four frameworks of Community and Social Services, Food and Beverage, Retail, and Training. However, there is one notable and important difference between the frameworks. This difference is the amount of time trainees spend at their attachment sites:

1. Community and Social Services – 19.5 to 35 days, depending on the course;

2. Food and Beverage – four days of apprenticeship over 12 months for the Diploma, and six months of apprenticeship over 24 months for the Advanced Diploma;

3. Retail – 22 hours of training at the store; and

4. Training – training period is not specified by the training provider, it is negotiated between the partner organisation and the trainee, but the

expectation is that trainees are at the host company at least once a week during non- training days.

4.3.3 Highly simulated workplaces

Figure 3. Links between learning in the classroom and a highly simulated workplace
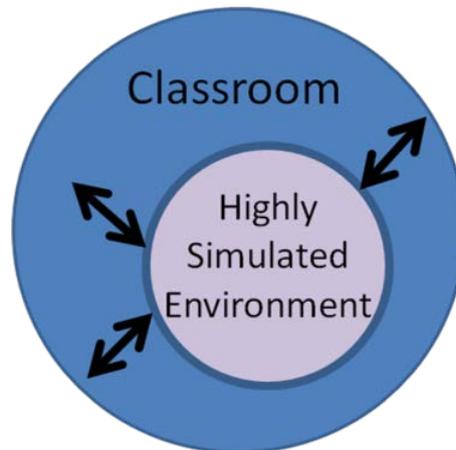
The CET centres for the four frameworks (Aerospace, Creative Industry, Landscape, and Process Industry) in this research project have highly simulated workplaces. These sites serve as pseudo workplaces. Reasons given for using simulated environments include issues around safety, productivity, and intellectual property. The simulated workplace environments try to mimic actual workplaces to varying degrees in four different ways: physical environment, tools and materials used, work activities undertaken, and work relationships and processes practised.

Firstly, the physical environment of the simulated site is very similar to, if not the same as, the work environment. The Aerospace training provider has a hangar, "basically most hangars are uncomfortable places to work with, so they try to simulate the environment that we'll be working on" (trainee). The Landscape training provider has outdoor fields and parks reserved for maintenance work, "that actually gives them a good feel of the working environment, it's not a secluded area or anything like that" (training provider). The Process Industry training provider has a fully operational live plant that only starts up when trainers and trainees enter the premises to run processes, and the products that are generated return to the tank through a closed feedback loop.

Secondly, trainees use the same tools and materials that they would most likely use at their new jobs. For example, trainee aerospace technicians work on real aircraft engines instead of models and trainee landscape technicians learn how to safely use the appropriate tools for different tasks.

Thirdly, trainees learn and carry out authentic work activities. Overall, trainee aerospace technicians found their programme relevant because they have been

able to apply what they learnt (e.g. clearing paperwork, handling tools, and identifying, labelling, and stripping engine parts). Nevertheless, the activities that trainees engage in have a limitation in that they are carried out for learning purposes and do not have real consequences so "it's not the same [as work that takes place on-the-job], the feeling is quite different" (training provider).

Lastly, the simulated environments provide trainees with the opportunity to gain a better understanding of the work relationships (e.g. individual or collaborative tasks) and processes that are valued in their industry. Trainees at one of the Creative Industry's CET centres have to complete a digital story from scratch by working on pre-assigned teams. This decision was made because "when you join a company, you're not quite sure who your team-mates are going to be, what we try to model is exactly what... or as close, as much as possible, to what the industry is kind of offering" (training provider). Trainees also learn about the importance of keeping production hours to a minimum by working with Monopoly money, and paying for the amount of time they spend on their computers. For this "Professional Practice" exercise, experts from within the industry are brought in to support and mentor trainees.

Besides assessment in the classroom, assessment also takes place in the simulated environments while trainees are carrying out tasks. In the Creative Industry, assessment is conducted by professionals from the industry. While the training provider briefs them on the WSQ assessment process and procedure, he also ask that they assess the trainees "based on [their] industry experience" (training provider). This enables trainees to gain a better sense of what is expected of them when they work for actual companies.

4.3.4 Structured workplace visits

Figure 4. Links between learning in the classroom and through structured workplace visits
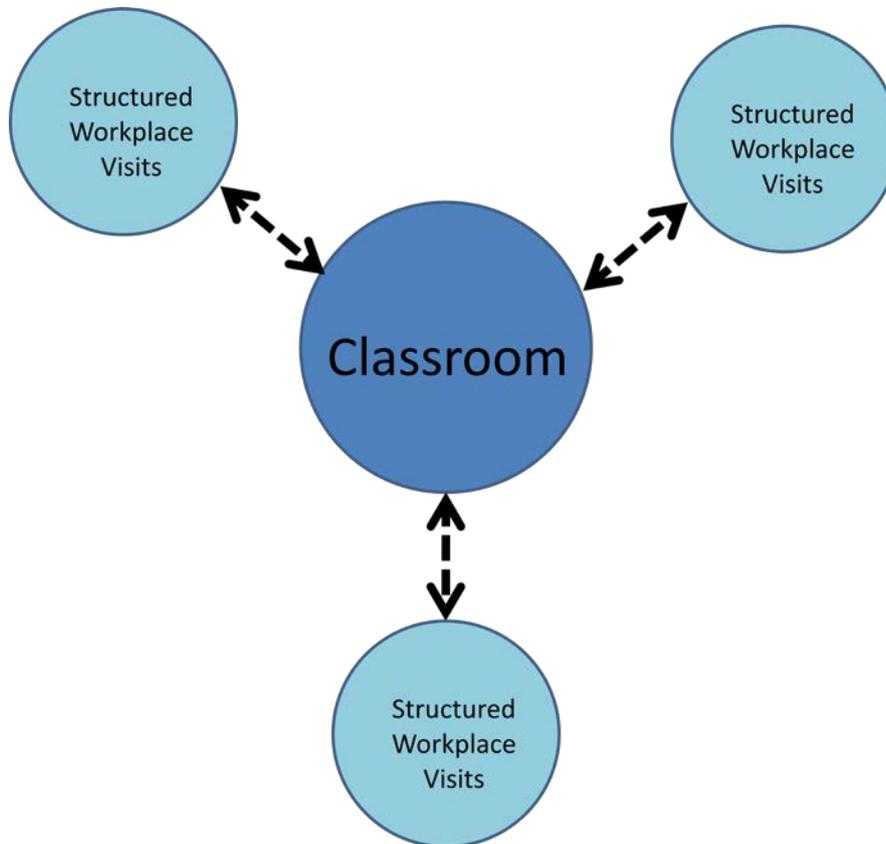
For training providers who are unable to secure actual work attachment for trainees, another alternative to having highly simulated workplaces is structured workplace visits. The in-house training provider for the Retail WSQ framework located their training centre above one of their stores and this intentional decision was made to give trainees the opportunity to observe real-life work processes. Trainees are brought to the store and "we show them the things that the employee will do in the supermarket training areas" (training provider). The training provider for one of the Community and Social Services framework also organises workplace visits for trainees. The trainees go to different facilities, and hear from a staff member with an overview of what the job entails. After the visit, trainees are given questions to reflect on, for example, describe the service, analyse the direct care skills needed, identify pressure points or difficulties in the setting, how their skills and attributes would match up, and gaps they need to work on to become good workers in the setting. These questions are followed by role-play in the classroom based on different scenarios. These activities are put in place "to drown-proof them" so that trainees would be prepared when they are sent out for an attachment or get a job in the industry.

4.4 How stakeholders define and value learning, workplace learning and OJT

All respondents acknowledged and spoke about the importance of learning at work. Whether they called this workplace learning, OJT or differentiated between the terms made no difference to their acknowledgement of the inevitability of learning in the workplace, and the importance of practice and experience in real contexts. This section is a descriptive account of how stakeholders defined and discussed the terms, learning, workplace learning, and OJT. These terms seem to be understood in various ways with little consistency amongst the same and different stakeholder groups. This data are from questions about how respondents would define or describe learning and OJT and a third question is about their views on two different perspectives of workplace learning. The data were coded against three separate nodes we labelled as definitions of learning, workplace learning and OJT, and another node we labelled as the valuing of different kinds of learning. Discussing the ways in which respondents described and understood each of the terms - learning, workplace learning and OJT - allows us to identify differences and similarities within and across the different stakeholder groups. Respondents' responses about how they understand workplace learning and OJT fell into two major categories: whether they understood either term as structured or unstructured learning in the workplace.

4.4.1 Policy advisors

Amongst policy advisor respondents, there was no consistent definition of workplace learning or OJT. Instead, policy advisors tended to use workplace learning and OJT interchangeably, but meant different things by the same term. One policy advisor considered OJT to be

> a very structured form of training but very relevant to the workplace... there are clear objectives and performance indicators put in place... because the company would want to have some ROI, return on investment.

This policy advisor describes OJT as a structured process. Other policy advisors used the term 'workplace learning' to describe a similar structured process, "there will be somebody who will be there with a certain end-point or outcome in mind that you need to perform up to as to the outcome". There is considerable overlap in these descriptions but different terminology is used to describe the same thing. Classroom learning was considered by some policy personnel to be part of workplace learning. The small number of policy advisors who considered workplace learning or OJT to be unstructured typically described learning as learning by doing your work.

Policy advisor respondents used language that implied learning is an individual process, "you get new information" or "to enhance your own skills, your own

knowledge, so you become better at what you're doing". Many described learning as a process of "making sense" or "making a change in perspective, change in thinking, change in doing". The conceptualisation of learning as something the individual does is interesting in juxtaposition to workplace learning/OJT as structured. The mix of learning ' something new ' and learning as a process individuals undertake appears to be somewhat at odds with learning at work which of necessity requires dialogue with others as well as individual cognition or reflection.

4.4.2 Peak employers

Peak employers considered workplace learning or OJT to be unstructured:

> Like for my staff here, they are on-the-job, learning on the fly, because there is no course to teach them [how to solve non-standard problems].

> Workplace learning is very informal... you put the staff [in] the workplace, and let him swim in the deep blue sea, then he learns.

This suggests that learning in the workplace is considered to be unstructured because there are no teachers and structures in place to guide learning. These respondents commented that OJT was learning about specific areas of a job and about application. One respondent commented that he could see no difference between OJT and workplace learning, noting that the Chinese use the terms 在职训练 (zài zhí xùn liàn) for OJT, and 职场试习 (zhí chàng shì xí) for work place learning. "Loosely speaking it can mean the same thing." A tighter translation for these terms is 'in employment learning' and 'workplace practice' respectively. If OJT and workplace learning are linguistically understood to be similar this is one explanation for the way in which many people use the terms OJT and workplace learning interchangeably.

In describing learning, these employers emphasised improvement, using economic analogies such as "adding value", "making a better life", and learning as "a kind of development". One respondent suggested learning involves interaction with people and another described learning as the "undertaking of a set of workplace processes". Generally, peak employers understood learning as both individual and collective, and as having both an individual and collective impact.

4.4.3 Training providers
Most training providers talked about OJT rather than workplace learning. Some considered OJT to be structured, while others described OJT as unstructured learning in the workplace. Comparisons were made between OJT and classroom or "normal training", noting how similar these could be, because they were both structured. One training provider noted that OJT is very "Tayloristic", and another

discussed OJT as having "very specific and narrow expectations of what is expected of the employee".

Two training providers had quite different ways of understanding and valuing learning in a workplace. One training provider commented that OJT "sounds like sink or swim". This same training provider offers a structured and simulated project-based environment for learners. The other training provider commented that individuals learn a lot on the job as "you get access to a lot of information [and] help", and that this requires "a lot of self-initiative". This issue of having the skills and attitude required to make the most of workplace learning, hinted at by the previous training provider's comment about "sink or swim" is discussed further under the heading, Learning Processes in the Workplace.

Like policy advisors, training providers typically defined learning as "acquiring new skill sets, new knowledge", and as improvement. Training providers also spoke about the process of learning, of understanding, and the importance of experience.

4.4.4 Supervisors

Supervisors tended not to differentiate between OJT and workplace learning. The use of observation, supervision, and learning by doing were mentioned. Companies that appeared to have an organisational learning culture commented that workplace learning is "a higher one [than OJT]", that is, workplace learning is an umbrella under which one kind of structured learning – OJT – sits. Unlike the peak employer bodies, there was some mention of learning in the workplace as having some form of structure, through supervision and/or having competencies signed off. This latter form of OJT was most evident in organisations where the safety of workers and the public was paramount.

Compared to policy advisors, peak employer and training provider respondents, supervisors considered learning a more dynamic process. While they too referred to learning as the acquisition of new skills, they also spoke about learning as a process that helps "to deal with a changing environment", of the need to "continue to change because the business is changing", and about how learning happens through the application of knowledge and skills. The purpose of learning was identified by some as "an asset to oneself" and as "enabl[ing] increased productivity". These explanations of learning suggest learning is considered to be dynamic, and both an individual and a collective process.

4.4.5 Trainees

Trainee respondents talked about "putting what you learn [in the classroom] into practice", learning from seniors, being mentored, guided, learning through discussion and problem solving in the workplace, and demonstrating their competence. This suggests a structured view of learning in the workplace. Like

other stakeholders, trainees and workers typically identified learning as something "new", and like their human resource managers and supervisors, as application and practice. They also used economic language such as learning makes "it more productive" and "it adds value to my skills and knowledge".

4.5 Valuing of learning in the workplace

The ways in which stakeholders define and understand learning in the workplace, whether they call it workplace learning or OJT or differentiate between these terms, is a reflection of the ways in which they value this kind of learning.

All respondents made a comment about the importance and value of workplace learning, "workplace learning is important, it's necessary" (peak employer); the workplace is where you learn "better and more effectively" (training provider), and a place "for you to sharpen and push beyond the normal" (policy). It is inevitable that learning takes place, "you always learn something in the workplace" (worker), "at the end, it's the workplace which is important, not the school" (supervisor), and "there's a lot to pick up and there are a lot of things we cannot learn from books or a classroom" (peak employer).

A number of respondents commented on learning in the workplace as involving more than cognition; in this real environment, learning involves emotions and the physical as well as cognition. For example, a policy advisor suggests it is important to go to the workplace to "feel what the work is like". A worker echoed this comment, "when you go to the company then you can really feel it". In the Community and Social Services sector, meeting and working with clients whose behaviours are unexpected and unpredictable are very different from classroom learning, and requires the new worker to make adjustments as they overcome the initial shock of seeing, hearing and being in close proximity to unexpected behaviours, "the emotion part ... there's a certain adjustment needed" (supervisor). Supervisors and training providers in particular commented on the importance of being in the workplace to "feel' what it is like to do this kind of work. This was particularly notable in the Security, Landscaping, Aerospace and Community and Social Services frameworks. In 40% of interviews, the term "hands-on" was used by respondents from the Aerospace, Food and Beverage, Landscape, Security and Community and Social Services frameworks, in this order. The term was mainly used by workers and supervisors and only by three training providers - Food and Beverage, Aerospace, and Community and Social Services frameworks. These training providers place considerable emphasis on learning in the workplace, and this is reflected in their arrangements as discussed in the workplace arrangements section and case studies (see Appendix B).

The workplace was considered important because what you learnt was contextualised; it was where you could practise and apply what you learned in the

classroom. When respondents spoke about unstructured learning in the workplace, whether they called it OJT or workplace learning, it is best summed up in the following quote from a training provider, "on-the-job it's the practice ground; it's difficult to rehearse, it's difficult to schedule". Challenges of learning in the workplace are discussed in Section 4.8.

The workplace provides an opportunity to "practise" (a word used by many respondents), it is where you can experience the workplace standards and processes (training provider), and where you encounter what the expectations are (policy advisors, training providers, and employers). One respondent, a supervisor from the Security industry was adamant about learning in the workplace being the most important type of training for security guards.

The strength and consistency of the perceived value and importance of learning in the workplace across all stakeholders were at odds with the reporting of solely classroom-based delivery in 2009 (see Section 4.2). The following section reports on respondents' perceptions of classroom learning.

4.6 The place of classroom learning

Respondents did not only talk about learning in the workplace, but also about the relationship between learning in the workplace and the classroom indicating the valuing of classroom learning in association with workplace experience. The following quotes from three supervisors from the Landscape, Community and Social Services and Training sectors reflected the relationship between classroom and workplace learning.

> They learn more than what they learn in books and they can actually understand more [of] what they learned in books... they have to be able to experience both sides [classroom and workplace learning].

> [The] most essential knowledge has to come in a classroom setting... once it comes to application, it's on the job or in the workplace, and that's the only way you can learn.

> If you take away the classroom, it's a long process. If you already have the knowledge from your classroom training, it makes the job of the supervisor much easier in guiding them.

These respondents place great importance on learning concepts, theories, and "knowledge" in the classroom and then having the opportunity to apply what has been learnt. A policy advisor commented that an advantage of classroom learning is that you are away from the pressures of the workplace and have time to learn. Some stakeholder groups indicated they considered it important to have classroom learning first and the opportunity to apply what has been learnt. Others commented

that there are things you cannot learn in the classroom or commented on the limitations of classroom learning.

> You cannot learn it in the classroom ... one of the technicians here taught us how to do all this (trainee).

> But we also learned it in WSQ in a very brief form; it is brief because every site might have a different way of doing things (trainee).

> In a classroom we can only teach them that much without the actual hands-on experience (training provider).

> For a craft, you cannot learn a craft in school, it's impossible (training provider).

These quotes from the Security, Community and Social Services, and Food and Beverage sectors were also reflected by those from other sectors such as Training, "the classroom is just only a piece" (worker). It is the nature of the workplace and the learning opportunities within it that was important for all respondents.

Classroom learning and its relationship to requirements of workplaces was considered by most trainees to be relevant to varying degrees. Workers in the security industry commented that "some of it is relevant, like doing a chart for manpower, where we need to know how to deploy our men, and traffic control and asking for backup". Workers from the Landscape framework considered their classroom learning to be very much connected to their workplace requirements. For example, at their training site, they did pruning, planting, removal of plants and were made aware of different types of hazards; all of these skills they used at their current workplace. In addition, at their training site, they learned what it was like to do this kind of work, for example working under the sun and the rain.

A community services worker also felt that the WSQ course prepared him "more than enough". Aerospace workers spoke not only of the technical knowledge and skills they learnt at the training site, but also because theirs was a highly simulated workplace, they were able to experience typical working arrangements such as working in teams, "we work together and then we share the problems with each other first, then we share with the instructor".

However, this message of learning in the formal training environment being readily transferable was not universal amongst workers interviewed. A security worker for example, commented that the scenarios and case studies were not relevant, and they would like to have had professional security guards to talk with. This suggestion is one way of linking classroom learning with learning in the workplace. The following section presents findings on the ways in which providers and workplaces structured support for learning, the ways in which stakeholders talked about participating in learning in the workplace and their preferred ways of learning.

4.7 Support, participation and preferred ways of workplace learning

The types of support provided are presented in Section 4.7.1. This is followed by an analysis of the ways in which respondents learn in the workplace. Respondents talked about this when addressing the critical incident question about something that went well in their work and how they learnt the skills required to achieve the positive outcomes. Preferred ways of learning, the final part in this section, is based on a list of learning strategies respondents were asked to rank. The last two parts of this section provide further confirmation not only of the valuing of workplace learning, but some indication of the ways in which workplace learning happens for these respondents.

4.7.1 Workplace learning support

The workplace learning support for trainees comes from their workplace supervisors as well as their own classroom trainers. While training providers may expect workplace supervisors "to ensure the students are really undergoing on-the-job training; that it is task based; it is relevant to what we teach within the school", the reality is they may not have the spare time, and necessary qualifications and experience needed to train and assess trainees. In order to address such issues, a Community and Social Services training provider sends classroom trainers into attachment sites to provide assistance and conduct de-briefing sessions for trainees to discuss their learning, and to clarify any queries they may have.

Support from well-informed and well-prepared workplace supervisors is also important. The Training WSQ training provider observed that while some trainees have worthwhile experiences being trainer aides or co-trainers, "most companies are not that adventurous". The supervisors in these companies do not go beyond allowing trainees to sit in and observe their lessons. However, one supervisor explained that as he had completed the ACTA programme, he was able to help trainees apply their theoretical knowledge to actual work tasks and noted that trainees had made a direct contribution to his company. This supervisor made an effort to build on his trainees' existing skills, "each one comes with a set of skills and they are good in certain things, so I really identify [what they are] and then use it". For example, he gave a PCP trainee with an education background the opportunity to design curriculum, and a PCP trainee with an engineering background checklists for observations. Another way workplace supervisors can support their trainees is by giving them the opportunity to practise the skills they have acquired through a variety of work tasks. In the Landscape industry, this was a challenge because smaller companies only offer specific services and even though larger companies offer a greater variety of services, there is still no guarantee of job rotation. However, in one Food and Beverage organisation that sends their own

employees for training, the supervising chefs rotate the trainees' work schedules according to their training timetables. This allowed trainees to apply what they learned immediately (e.g. after a pastry module at school, a trainee would work in the pastry kitchen).

Support from supervisors can also continue after trainees complete their WSQ programmes. For example, one Landscape supervisor explained that when trainees returned to the company, they are paired with a more experienced worker who mentors them, "[for] approximately one month, the mentor will be there with him [and] when he gets the hang of it, he's on his own". During this period, trainees are expected to learn and work at the same time. This same arrangement also takes place, albeit in a more structured form, in the Aerospace organisation we visited. For a period of nine months after trainees attain their WSQ qualifications, they are attached to "trainers", technicians with a lot of experience and qualifications, and learn from them through shadowing. Trainees are also expected to record what they have learned in their log book. At the end of their in-house training, trainees are assessed before they can become full-fledged technicians.

Organisations with trainees can play their part by supporting supervisors. The Retail in-house training provider highlighted that their supervisors are encouraged to build communities of practice "to share the best practices, because if the supervisors do [things] the wrong way, or do not do the good practice, then they may give the wrong advice to the subordinate". This is done through a leadership programme where supervisors are given the time and space to discuss how different concepts (e.g. goal-setting, time management, and delegation) can be applied in the workplace.

4.7.2 Ways of participating in learning in the workplace

Most respondents reported that they employed individual strategies when they learning the workplace; only a few made reference to structured experiences of learning in the workplace. References to structured processes of learning in the workplace included being mentored and guided (training provider), a buddy system (supervisor), planning together, taking any problems to the supervisor (worker). A training provider from the Community and Social Services framework reported that in their programmes, after being in the workplace, trainers and trainees would engage in discussions and problem-solving exercises.

Typical unstructured experiences of workplace learning for all stakeholders included trial and error, using a variety of resources, actively reflecting, observing and absorbing, going to superiors for help, discussing, problem solving and getting ideas from colleagues, and most of all learning from making mistakes. One training provider commented that workplace learning is a natural process, you even may not be aware you are learning.

The magic about this workplace learning, through working or hands-on, is you will automatically put in different knowledge that you have learned from the previous time onto one project without really realising it or really like try to remember to do it, it just automatically comes up.

However, the need to learn the standards and expectations was something that a number of respondents commented on. Clearly, this is a highly contextualised requirement, different for each workplace. The degree to which respondents consciously sought out this knowledge was partially related to their motivators and skills for learning in the workplace. A training provider considered that:

If you go into the workplace and you're telling me it's boring and you're not learning anything, that means you're not doing anything... that means you do not understand this is your playground

A supervisor commented that:

You learn by yourself if you want to learn, you ask questions, I'm not going to teach you anything otherwise, it's about motivation.

A trainee observed that:

There are people that come to the workplace and learn nothing because they're not thinking, they're seeing what others are doing, but they're not processing it.

These observations and comments suggest that not everyone enters a workplace 'knowing' how to make the most of learning opportunities. Knowing what and how to observe, knowing how to ask questions, who to ask questions of, how to manage the gap between classroom learning and work are issues which may require some attention. As discussed in the literature chapter, the gap between classroom learning and the workplace may be too great and may not be readily bridged.

4.7.3 Preferred ways of learning

As part of their interviews, respondents ordered 12 cards with different learning strategies. The various learning strategies were applicable to the classroom and for the workplace. The following list sets out respondents' preferred ways of learning from most to least referred.

1. Mentoring

2. Coaching

3. Observing and listening

4. Demonstration

5. Everyday work activities (just doing it)

6. Talking (dialogue) with customer(s)

7. Talking (dialogue) with others in the organisation

8. Reading

9. Classroom learning

10. Networking with others outside your organisation

11. Watching a video(s)

12. E-learning

Respondents preferred to learn through mentoring and coaching. One trainee believed that "mentoring is a very good way of giving knowledge, because the mentor has more knowledge and more experience than the mentee". A training provider also reflected that she has had success with "unconscious" mentoring, watching and modelling after someone "because of a keen respect for the way the person does certain things". Another training provider noted that the coaching she receives from her immediate boss has been "very useful to fill the gaps". The two strategies of mentoring and coaching usually, but not always, refer to the teaching and learning relationship between workplace supervisors and subordinates, "to learn from someone who's been in the business, and to learn from their wisdom" (policy advisor). Some respondents described these coaching and mentoring in different ways, and included observing and listening, demonstration, and everyday work activities (just doing it) in their discussion.

> Coaching is teaching other people, but mentoring is like teaching plus demonstration plus showing and explaining as you go along, it's a bit more detailed (trainee).

After you have been coached, you have to observe and listen by your own, and in that sense, how you do that is by everyday work (trainee).

When respondents' responses were grouped according to their roles, training providers, employers, and trainees had similar preferences. Their three most preferred strategies were:

1. Training providers – demonstration, coaching, and mentoring;

2. Employers – observing and listening, demonstration, and mentoring;

3. Trainees – coaching, mentoring, and observing and listening.

Policy advisors and peak employers included talking (dialogue) with customer(s) and others in the organisation in their list. Their two most preferred strategies were:

1. Policy advisors – mentoring, talking (dialogue) with customer(s), and everyday work activities (just doing it); and

2. Peak employers – talking (dialogue) with others in the organisation, mentoring, and talking (dialogue) with customer(s).

The importance of communicating with "customer(s)" varied according to the respondents' role and the industry they were from. For training providers who identified trainees as their customers, there was a need to understand their needs and concerns in order to make improvements to the WSQ programmes they delivered. However, trainee chefs and aerospace technicians did not learn much from their customers, the recipients of the food they cook, "customers just want to eat, they don't want to talk about how you cook", or the engines they repair, "we don't really talk with our customers". This was not the case for individuals in the service industry (e.g. retail, community and social services, security, and landscape) who had to constantly engage with customers as part of their jobs, "if we know what customers want, we actually provide better service, and we will get less problems and less trouble, and we will be faster in our work" (trainee).

Overall, respondents did not seem to rate reading, classroom learning, networking with others outside their organisation, watching a video(s), and e-learning highly. Some respondents grouped reading, classroom learning, watching a video(s), and e-learning together because they were thought of as similar activities.

I think classroom learning, watching videos, e-learning – to me they're all the same level because they're the use of different media to present information in front of me (training provider).

Watching a video is a little bit more like reading, but you see graphics; reading is mostly text, you can see some pictures but no animation. E-learning... is a little bit more structured, and also classroom teaching is

structured learning. So the rest [of the learning strategies] are: you see how other people do it [and] you talk to people (training provider).

However, even when e-learning is structured, some respondents had concerns about this strategy having "too many variables to ensure learning takes place" (training provider). One peak employer respondent commented that there are no limits to e-learning, "[the Internet is] really a black hole... you go in there [and] you can never come out". Contrary to respondents' comments about classroom learning discussed in Section 4.6, when asked specifically to rate learning strategies where classroom learning was one option, respondents considered classroom learning much more negatively.

The only learning strategy in our list that could not take place during work was classroom learning. Respondents generally felt that the effectiveness of classroom learning depended on the content of the course and the teaching techniques used. One trainee noted that classroom learning can be very good if "you have case studies – real scenario based – and you role play that". A training provider also explained that he would "turn off" if he is given a textbook to flick through, and is taught word for word. Respondents also discussed classroom learning in terms of its link to the workplace, "we spend days at school learning recipes by heart, what for, you don't need it" (supervisor).

4.8 Challenges of WSQ workplace learning

Although the value of learning in the workplace is undisputed, there are a number of challenges for CET providers in terms of putting in place effective workplace learning practices. The challenges include securing attachments, and managing partnership arrangements to ensure quality opportunities for trainees. The structure of the work and the workplace itself determines approaches and opportunities for learning. For example, one worker commented that some of their peers in the programme had experienced boring, repetitive work; others commented on the limited range of tasks, the lack of opportunity to try more advanced tasks in particular workplaces and the resulting sense of discouragement.

Securing attachments for trainees can be problematic; it "depends on the partner organisation and their commitment, it's not so easy to get a commitment" (training provider). Possible reasons for the lack of commitment among employers are industry specific. The creative industry is concerned with intellectual property, "no one will share with you what exactly they do in a production company", therefore a trainee at an attachment site is "like a horse with [blinkers], you don't see too much" (training provider). Aerospace organisations are also only keen to train their own employees, "they are not very open, and they are not interested in training [individuals who may end up working for their] competitors" (training provider). In the community and social services sector, organisations are reluctant to give

management trainees access to confidential finance or human resources information, or to even allow them onto their premises due to "duty of care" (training provider). Likewise, the security training provider explained that employers are unwilling to attach trainees to officers because all guards are required to have licences.

Across the different industries, one of the main frustrations for training providers is that many organisations claim they cannot afford to invest the time, resources, and money needed to support and supervise trainees as they need to maintain their own businesses. Even the in-house retail training provider observed that their workplace supervisors go above and beyond their own duties to monitor and guide trainees, and trainees may make mistakes while they work and train on-the-job. However, he also noted that the implementation of the training programme has also led to a community of practice of supervisors; a further indication that the organisation is serious about training. WDA offers two types of wage compensation for businesses on a co-payment basis; absentee payroll for employers who send their staff for training to compensate for any loss in productive hours, and training allowance for employees to encourage them to attend training programmes (WDA manual on funding, 2008, p. 34).

Ensuring that the learning at attachment sites is of a high standard can be a challenge for training providers. Such arrangements require trainers, trainees and workplace supervisors to have a shared understanding of their individual roles and responsibilities. A training provider for the Community and Social Services WSQ framework noted that they brief workplace supervisors on the course curriculum and give them a checklist of the competencies trainees need to demonstrate. However, as observed by the training provider for the Food and Beverage WSQ framework, issues may still arise when supervisors do not fully understand what on-the-job training involves. These supervisors may either provide trainees with inadequate supervision, or have too high expectations of them. Two other factors for training providers to consider relate to the workplace supervisor's abilities, "the supervisor is required [to be] competent to pass on the knowledge" (policy advisor), and willingness to help trainees practise their skills across a variety of work tasks. Some trainee chefs reflected that during their apprenticeships, they carried out repetitive tasks or were treated as "casual labour". For example, one trainee did not have any hands-on experience with bread-making because his employer could not find someone to replace him at the cookie-making section.

4.9 Summary

While the official statistical data from Skills Connect suggest that various forms of workplace learning (e.g. OJT, practical/practicum, and supervised field training) are not utilised within the WSQ framework, our interviews with stakeholders highlight that this might not be the case. From the 10 WSQ frameworks examined in this study, we identified the workplace learning arrangements found within (see Appendix B) and across the frameworks. Some WSQ programmes (e.g. Train and Place PCP) have mandatory workplace attachments without formal links to classroom learning, while others have established formal links through curriculum documents, and communication between the training provider and workplace supervisors. Trainees who undertake workplace learning require support from well-informed and well-prepared workplace supervisors who are willing to give them the opportunity to practise the skills they have acquired through a variety of work tasks. To ensure that trainees make the most of their attachments, a Community and Social Services training provider sends classroom trainers into attachment sites to provide assistance and conduct de-briefing sessions. Other forms of pseudo workplace learning include simulated environments and structured workplace visits. Even when training providers cannot secure actual work attachments for trainees due to issues around safety, productivity, and intellectual property, they try to complement their classroom lessons with some form of workplace learning.

While there is limited consistency in terms of the language used to describe learning, workplace learning or OJT within stakeholder groups, there are some similarities across stakeholder groups. Learning was described in all stakeholder groups as something new – new skills, and new knowledge. The use of economic language in all stakeholder groups, except policy advisors, is indicative of the way in which learning is valued and, in particular, learning in the workplace. Learning in the workplace (whether it is called OJT or workplace learning) can be either structured or unstructured but involves practice, experience and the application of classroom learning.

Most of the workplace learning processes that our stakeholders experienced appear to be unstructured and workplace learning (though inevitable) was not something that everyone knew how to do. Despite this, respondents generally favoured learning strategies that are likely to take place within workplaces (e.g. mentoring, coaching, observing and listening, and demonstration). It is interesting to note that even though classroom learning was not rated highly, respondents still felt it was important under the right circumstances.

Lastly, although the value of learning in the workplace was echoed by all respondents, there are a number of challenges to putting in place effective workplace learning programmes within the WSQ framework. In the next chapter, we provide suggestions to help make such arrangements more feasible.

5.0 Implications and conclusion

5.1 Introduction

The final chapter of this report draws on the findings of the research undertaken to address and explore its implications against the research questions:

1. Identify the dominant ways in which workplace learning and assessment is understood and valued, and analyse their implications;

2. Identify the variety of workplace learning and assessment arrangements;

3. Identify the statistical data collected about workplace learning and assessment; and

4. Analyse any available data and identify what further statistical data would be useful to collect.

5.2 Valuing and understanding of workplace learning and assessment

Both the value of workplace learning and the idea that learning is an inevitable part of work was undisputed amongst respondents. A number of them also explicitly made reference to the need for workplace learning to be an integral part of WSQ programmes. Respondents' comments and observations are strongly supported by the literature on learning and its application to work; the workplace is where individuals not only acquire but interpret, recognise, and assimilate information, skills, and feelings (Marsick, 1987). Knowledge in the workplace, such as understanding of other people, decision-making and judgement, knowledge resources, thinking and learning in the workplace (Eraut, 2004) are factors respondents spoke of and referred to when they commented that certain things can only be learnt in the workplace. Being in the workplace enables workers to consider different ways of naming and working out problems, and through practice, improve and modify their approach while at the same time cognitively organise knowledge (Billett, 2002). Recognising the relevancy of prior knowledge, transforming that prior knowledge so it fits the situation, then integrating the new assembly of knowledge and skills to create an understanding of the new situation and respond with appropriate action (Eraut, 2002) while being able to access support from class peers and trainers has a number of benefits:

- It assists with the development of self-confidence and self-efficacy;

- Learners have an opportunity to practice and receive guidance;

- Learners have an opportunity to make a decision on whether or not this industry sector is for them – provided workplace learning components are built in early in the programme;

- The likelihood of transfer of knowledge is heightened; and

- Trainers receive constant feedback on the 'real' effectiveness of their training as they support their learners in the workplace.

Although the extent of workplace learning is limited, the range of workplace learning arrangements in place (see Section 4.3) further testifies to the value of workplace learning in relation to the WSQ framework. The possibility of integrating workplace learning and WSQ was highlighted by a policy advisor who gave the example of the Singapore Zoo. They had requested for their in-house programme for animal keepers to be developed into a WSQ programme, providing the opportunity for employees to gain nationally recognised qualifications. As supervisors at the Zoo have the subject matter expertise, during the time that trainees are doing OJT, they are assigned to a supervisor who will mentor them, oversee the tasks assigned to them and ensure that they meet the agreed objectives of the OJT. According to the policy advisor, the WSQ framework has led to a system of training that enhances and supports the work of the Zoo.

5.3 Funding arrangements

For CET providers, putting in place high quality workplace learning arrangements is challenging (see Section 4.8). Traditional arrangements require partnerships with industry which requires good quality mechanisms, and employers need to be willing to provide these opportunities. The OECD's *Learning for Jobs* report claims that this means "good quality assurance mechanisms, balanced by effective incentives for employers" (Field, Hoeckel, Kis & Kuczera, 2009, p. 61). The authors of this report found that countries use a variety of incentives to encourage employers to provide opportunities for learning on the job. These include direct subsidies, special tax breaks and training levies. At the moment, WDA's funding scheme (e.g. absentee payroll where employers who send their employees for training are compensated for their lost production hours) does not promote the concept of workplace learning. Instead, it further reinforces the idea that "in order for learning to take place, the worker has to be plucked out of the workplace to attend [the programme]... learning is a separate process from working, when actually to some of us it could occur together" (training provider). However, giving employers a subsidy for every trainee they take in may not be the answer. The OECD report went on to highlight that such subsidies may have little or no influence on a company's decision to train someone (Field et al., 2009, p. 73). Perhaps, a better alternative would be to develop communities of practices in industries where the potential financial benefit of having

trainees in the organisation is a part of the shared story. The same OECD report describes a 2004 Swiss survey which found that for two-thirds of host companies, the productive outputs apprentices generate exceed the gross cost of not having one. The Swiss apprenticeship model is based on relatively low apprentice salaries, trained apprentice supervisors and a national curriculum, instead of subsidies for host companies. These traditional arrangements for workplace learning can involve other forms and arrangements for connecting classroom and workplace learning, as identified in section 4.3. Other forms of workplace learning arrangements, such as workplace visits, industry guests, the use of project work and so on, could be rewarded and/or recognised accordingly. As the governing body of WSQ programmes, WDA can play their part by highlighting the value and necessity of workplace learning and assessment, not only to trainees, but also to training providers and industry employers.

5.4 Workplace learning arrangements

The four main types of workplace learning arrangements that are explained and illustrated in Section 4.3 are: a) work attachments with no formal link to classroom learning, b) work attachments with some link to classroom learning, c) highly simulated workplaces, and d) structured workplace visits. The range and combination of arrangements used by training providers depend on a variety of factors, including the type of work trainees will do, the level of institutional infrastructure in each sector at any one point in time and the employment arrangements. For example, while trainees in the Creative Industry need to learn different computer programmes and complete projects within specified deadlines, trainees in the Community and Social Services sector need to learn how to approach different clients and reflect on their practices. Regardless of the type of arrangement utilised, links should be made between what takes place in class and at work.

The key elements of workplace learning within the WSQ framework are: a) having actual workplace contexts, b) participation in authentic work tasks, c) individual agency in the extent of engagement in learning processes, and d) active involvement of the training provider. The value of allowing trainees to practice what they learnt in class through engaging in real-life work activities and experience the lived realities of employees in their industry was noted by stakeholders. There is also value in providing opportunities for trainees to learn in multiple workplaces, in order to gain a range of workplace experiences. Having more than one workplace learning experience is being pushed for in Germany as there is a need for a well-rounded workforce (see Section 2.3.3). Some training providers (e.g. Food and Beverage, and Community and Social Services) have already included multiple attachment sites in their WSQ programmes. As trainees move from one workplace to another, they are able to build on the knowledge and skills they learn in class and

at their previous work site. Trainers and supervisors can assist with this process by making comments in journals and log books about the trainees' learning. These documents would accompany the trainee to the next work site and the comments can be picked up by the next supervisor, who would then be in a better position to support the trainee.

Another component of workplace learning relates to the individual's own motivation to participate in the learning process. While some stakeholders mentioned individual agency (see Section 4.7.2), it is beyond the scope of this stage of the project to examine this aspect of workplace learning and assessment. However, stage two of the project will take a closer look at individual learning processes. Lastly there is the place of training providers in facilitating and supporting trainees and supervisors in the workplace. Trainers and supervisors need to work together to help trainees establish links between what they do in class and at work (see Section 5.3), and training providers need to ensure that these links are developed and maintained. The onus is also on training providers to provide trainees with guidance while they learn in the workplace. As shown in the Community and Social Services framework, trainers meet with trainees while they are on their attachments and engage them in discussions about what they have learnt, and their work experiences.

Recommendation 1*:* That a commitment be made to include workplace learning as part of WSQ programmes, and that a definition of workplace learning be developed as part of the WSQ framework documentation.

Recommendation 2: That both financial and non-financial arrangements for the provision of learning in the workplace for WSQ programmes be investigated.

5.5 Enacting workplace learning

As Chiang and Wang (2008) note, there is no universally agreed definition of workplace learning, so it is no surprise that the terminology used by respondents to describe learning in the workplace included both OJT and workplace learning. These two terms were sometimes used interchangeably and sometimes used to describe different things. In everyday talk, this is not an issue. However, for policy advisors, curriculum designers, trainers, and HR personnel responsible for change and development in organisations, it is important to have a shared understanding of workplace learning. A shared understanding in the form of a conceptual framework includes a much more precise and consistent use of terminology and frames the purpose, structure, planning, delivery, and support of learning in the workplace.

For example, a definition of workplace learning as: learning that takes place by being part of and therefore engaging in the *activity of work* through opportunities for

practice, and receiving guidance and support as well as contributing. This definition indicates the purpose of workplace learning is to provide practice opportunities, interact in and with work activities, receive guidance, and have opportunities to contribute. Such a definition of workplace learning has implications for standards and curriculum design for trainers and providers.

The ideal is for workplace learning components to be in actual workplaces. However, this may not be possible for a number of reasons, including the nature of relations with industry employers, the maturity of the industry in sharing and collaborating, and the skill levels of workplace supervisors. There are some commonly recognised ways in which workplace learning takes place and can be effectively supported, although as noted from our data, preferences for ways of learning can vary according to the individual's work and level of responsibility. Workplace learning can take place through observing, watching, listening, guidance from and dialogue with peers and supervisors, problem solving together, accessing a variety of resources, trial and error through doing the work, and making mistakes. Structured approaches include mentoring, coaching, and being assigned to a supervisor. These different ways of workplace learning can be built into WSQ programmes with or without access to traditional apprenticeship style arrangements.

The structured workplace visits arrangement discussed in Section 4.3.4 offer possibilities for learning to observe in the workplace, and thus the development of learning to learn skills applicable to workplaces. Although not evident in our data, there are additional ways in which workplace visits can be used, for example, asking learners to develop a Standard Operating Procedure (SOP) for a particular task, and facilitating a discussion about the barriers and enhancers of implementing that SOP. Other possibilities for including workplace experiences where partnerships with companies are not in place could include having guests from within industry as is done in the Creative Industry framework. Having these guests recount typical problems, asking learners to address these and discuss their possible solutions with the guest (who could provide further details about why something would or would not work, and encourage learners to continue to seek alternatives), is one way of tapping into industry resources and building relations with industry. Planning, designing and implementing projects is another typical approach that brings a little flavour of the workplace to a classroom setting. It is not uncommon, for example, for educational institutions to require their learners to find an organisation where they can volunteer their services to undertake a project for the organisation. The possibilities are only limited by the imagination of the provider, their trainers, the learners and the resources they operate within. These suggestions do not provide learners with the real time pressures of workplaces, place them in the reality of workplace politics and power plays, or provide them with access to the creative pedagogies of workplace peers and supervisors. However, they do begin to

address issues of transfer that are within the control of those conducting classroom learning.

Where there are industry partnerships, possibilities include the use of log books for learners to record their work tasks and have their entries signed off as having been completed to an accepted standard. The learner can also comment on their relevance to the classroom units they are undertaking to their work tasks, the workplace supervisor can comment on the level of commitment and attitude of the learner, and the provider can monitor the journey of the learner and the quality for the employer partnership. Other examples, from the Community and Social Services framework, include project work and reflective journals. The latter was also used in the Training framework. A Community and Social Services trainee spoke about planning and implementing an outing for a group of residents where he encountered the real time impact of organising activities and responses from his clients. Reflective journals have been used to varying effect. The success of this tool is often highly dependent on the way it is structured. Not everyone likes to record experiences reflectively. Reflection is not only a skilled activity; it is intuitive to some and not to others. Another tool used in the Community and Social Services framework was discussions between trainees and their peers and trainers in the workplace; this strategy provided additional support and guidance for learners, relieving some of the pressures placed on supervisors. Again, the possibilities are endless and limited only by the imagination of the stakeholders.

Recommendation 3: That a number of WSQ programmes be selected to trial the inclusion of workplace learning. This would involve the development of learning tools, assessment practices that integrate classroom and workplace learning, and assessment tools for gathering evidence. Further, that the learning experience of all stakeholders involved in these trials (e.g. standards and curriculum developers, trainers, trainees, workplace supervisors, and HR personnel) be captured to ensure lessons learned in the trials can be made the most of.

Further research: That the trial be evaluated from its commencement.

Recommendation 4: That leading practice examples of tools used to facilitate learning in the workplace and leading practice examples of tools that support transfer of learning be identified and publicised in the WDA and CET community.

5.6 Learning how to learn in the workplace

Another facet of learning in the workplace, evident in the data, was the reference to knowing how to learn in the workplace. As noted in Section 4.7.2, one trainee astutely observed that some people are "not thinking, they're seeing what others are doing, but they're not processing it". The need for knowing how to make sense of workplace experiences, perceive opportunities and make the most of them came through in the critical incident questions, and discussions around what workplace learning is.

Smith, Wakefield, and Robertson (2001) found that vocational education learners do not "typically use learning strategies, nor access other learning materials, that extended their knowledge beyond that provided by the programme structure. They did not form their own structures through their learning". While it is not wise to generalise this statement to all vocational education learners, it nevertheless is an issue for curriculum design as much as it is for trainers and their enactment of curriculum. Moore (2004, p. 331) suggests that curriculum analysts need to enquire into the extent to which learners actually engage and use particular forms of knowledge and skills. As our trainees indicated, the personality, motivations and skills of the learner (Billett, 2001; Vaughan, 2009) are aspects of the degree to which learners engage in learning in the workplace.

Our analysis of respondents' most and least preferred ways of learning showed that some learning strategies may be more important for certain industries and job roles than others (see Section 4.7.3). For example, communicating with customers may not be important for Aerospace technicians who work with engines, but is a crucial aspect of a Retail cashier's role. With this in mind, curriculum developers need opportunities to identify the learning strategies that trainees need to engage with, and incorporate these into the training and assessment guides.

Recommendation 5: That training for writers of curriculum standards include ways in which WSQ trainees learn in the workplace.

Further research: That a study be undertaken to better understand the learning strategies actually used by WSQ trainees.

5.7 Workplace assessment arrangements

Assessment to some degree has been discussed above. However, because assessment has such an influence on the nature and extent of learning, it is important to give specific consideration to assessment in relation to the WSQ framework. Where there were examples of workplace assessment arrangements, there are indications of highly effective leading practices which require further investigation and sharing. For example, in certain industries, trainees are required to document their training progress in log books and this was used by trainers and supervisors as evidence of their competence. In the Food and Beverage framework, the provider commented that log books were also a means of receiving feedback from trainees about the quality of their OJT experience and therefore were used to monitor the quality of the partnership arrangement. This is an interesting example of an assessment tool serving multiple purposes. Allowing for authentic competency-based assessment in the workplace can also contribute to the development of links between classroom and workplace learning. In addition, involving workplace supervisors in the training and assessment process help to build up their own abilities as trainers and assessors, an attribute that one training provider noted as lacking in his industry, and thus a barrier to implementing successful workplace learning arrangements.

In a competency-based system where workplace learning is integral to the qualification, assessment in the workplace is fundamental to the way in which competence is defined and understood. For example, in Australia (an important source of the origin of the WSQ) there is reference to the definition of competency as covering "all aspects of workplace performance" and "workplace competency requires the ability to apply relevant skills, knowledge and attitudes consistently over time and in the required workplace situations and environments" (TAA04, Training and Assessment Package),whereas, the Singapore's Advanced Certificate in Training and Assessment (Module 1, p.29) notes that the "competency standards articulate the skills, knowledge and attitudes needed to perform a job task and describe the acceptable levels of performance." OJT, in the same Module, is described as being able to be "conducted at or away from the work site" (p.37). The differences between these two understandings of competency is in part a difference between encouraging and expecting a work placement on the one hand and on the other hand, not expecting workplace component(s) and even discouraging such arrangements through an indication that OJT can take place off-the-job. However, where there are limited opportunities for trainees to be in an actual workplace, alternatives such as the ones discussed in Section 5.5 are always possible.

5.8 Implications of workplace learning for providers and trainers

Our trainee's observation that not everyone knows how to learn in the workplace and references to "feeling" the work have implications not just for curriculum designers, but also providers and trainers. For providers, it is further evidence of the importance of building in workplace learning into their programmes and has considerable implications for their management of trainers. For trainers, their training practices in the classroom may change and they will also be required to interact with industry directly. Moore (2004) adds two other dimensions to the ways in which workplace learning is experienced: the workplace environment and the communities of practice of which the respondent is a part of outside work and school. He suggests the curriculum analysts need to examine the various factors that shape the experience of knowledge use by learners in a workplace.

While the WSQ programmes we examined in this study had some form of "workplace learning", a number occurred outside the confines of actual work sites. Examples of such arrangements include varying forms of highly simulated workplaces and structured workplace visits. Workplace learning (and the different forms it may take) was valued by the stakeholders we interviewed because it gives trainees an opportunity to practise what they have learnt in the classroom in real contexts and for this to be effective, it is crucial that links between classroom and workplace training are established. Such links need to be made explicit in curriculum documents after consultation with trainers and supervisors about the design and structure of the learning programme.

Training providers and employers need to move beyond co-existence and co-operate with each other for the benefit of trainees. Collaborative efforts between two types of organisations may be challenging but can be achieved through regular communication, knowledge creation, information flow, the development of shared understandings, and putting in place co-ordination processes (Bound, 2007). As noted in the literature review of provider-employer partnerships in Section 2.5, communication, including clarification about the roles and responsibilities of each party, helps to ensure that everyone is on the same page and is working towards common goals. Leading practice arrangements identified in this study come from the Community and Social Services and Food and Beverage frameworks. Training providers from these two frameworks made conscious efforts to ascertain that the industry employers they partnered had the resources and support needed to help trainees in their learning. For example, one of the training providers in the Community and Social Services framework took the initiative to meet with workplace supervisors to inform them about the competencies that trainees should demonstrate and followed through by sending trainers to the attachment sites to ensure that trainees had opportunities to practise different skill sets. The literature

on workplace learning arrangements also points to the necessity of having not just one, but multiple host employer organisations for trainees in order to give them a wide breadth of experiences (see Section 2.3.3). The Community and Social Services and Food and Beverage training providers have recognised the importance of this, and are currently sending their trainees to more than one attachment site for greater exposure in different work contexts. Similarly, workplace visits to multiple workplaces provide exposure to different ways of organising work, different routines and workplace structures. Guest lecturers from multiple workplaces offer the potential for insights into different workplace cultures, problems and solutions.

Recommendation 6: That curriculum designers work together with trainees, workplace supervisors and trainers in their development of the curriculum.

Recommendation 7: That stronger links are formed between training providers and industry employers. Both parties need to understand the value and benefits of workplace learning. WDA can help to foster these links by arranging information sessions, and putting in place programmes that encourage the development of such links.

5.9 Implications of statistical data collected in Skills Connect

The Skills Connect data do not seem to accurately reflect the different modes of training delivery that training providers utilise. We suggest that this could be due to a number of reasons. For example, training providers may be more inclined to deliver classroom-based training because of the perception that it leads to quicker 'outcomes', and thus more funding (see Section 4.2). Another possibility for the mismatch between the Skills Connect data and the realities of WSQ delivery is that training providers are unclear about what the different terminologies (e.g. classroom, OJT, practical/practicum, and supervised field training) mean as there are no formal definitions for the different modes of training delivery. In addition, as training providers are encouraged to contextualise their programmes to meet the trainees' learning needs, they may not adhere to the information they enter into Skills Connect when they first register their courses for accreditation. Based on the interviews with policy advisors and training providers, we put forward the following recommendations for the collection of data in Skills Connect.

Recommendation 8a: For the accurate collection of data on different forms of workplace learning and assessment arrangements by providing definitions on the official modes of training delivery, and making comparisons between the training delivery accredited, and the actual training delivered.

Recommendation 8b: Inform training providers of the rationales for why each data field is required, and show that the information they provide is valued by sending them copies of reports generated from the Skills Connect database (e.g. quarterly WSQ reports).

5.10 Conclusion

This study highlights that workplace learning is valued by policy advisors, peak employers, training providers, supervisors and trainees across the 10 different WSQ frameworks. As such, the establishment of an agreed definition of workplace learning, that takes into account understandings of knowledge, learning and assessment tools used in the classroom and at the workplace, and the different ways in which trainees learn (including the strategies that are relevant for specific industries and job roles), would provide greater clarity in the development and delivery of programmes.

Understandings of what learning in the workplace refers to vary. This is not surprising and is expected, but does highlight a need for a system-wide agreed understanding of learning in the workplace and consistent use of terminology, to assist those working across the system to use and share a common language.

The ways in which the type of work structures learning in the workplace requires different approaches to workplace learning arrangements and the support structures for these arrangements. In addition, assessment tools for the gathering of evidence of competency should be designed to make the most of learning in the workplace. Management of partnerships to produce high quality learning opportunities for trainees is a key aspect for the success of WSQ's workplace learning and assessment. The purpose of the partnerships may vary from partners as part of an apprenticeship model, for workplace visits, project work, industry guests, or a combination of these and other innovative examples.

Collecting statistical data on WSQ learning in the workplace is critically important. This data need to be targeted to address policy needs, capture changing trends, and provide data from which provider, employer, and trainee needs can be identified. The gathering of qualitative data is also important, in order to complement and make sense of the quantitative data by providing a deeper understanding of its meaning.

The conclusion of stage one of this research project positions us to move into the second stage. Stage two will be conducted through in-depth case-studies in two to three workplaces, providing an opportunity to gain a better understanding of the learning and assessment arrangements within each organisation, and map the competencies trainees learn against WSQ standards. This research will be undertaken from August 2010 to February 2011.

6.0 Recommendations

For policy:

- That a commitment be made to include workplace learning as part of WSQ programmes, and that a definition of workplace learning be developed as part of the WSQ framework documentation.

- That both financial and non-financial arrangements for the provision of learning in the workplace for WSQ programmes be investigated.

- For the accurate collection of data on different forms of workplace learning and assessment arrangements by providing definitions on the official modes of training delivery, and making comparisons between the training delivery accredited, and the actual training delivered.

- Inform training providers of the rationales for why each data field is required and show that the information they provide is valued by sending them copies of reports generated from the Skills Connect database (e.g. quarterly WSQ reports).

For practice:

- That a number of WSQ programmes be selected to trial the inclusion of workplace learning. This would involve the development of learning tools, assessment practices that integrate classroom and workplace learning, and assessment tools for gathering evidence. Further, that the learning experience of all stakeholders involved in these trials (e.g. standards and curriculum developers, trainers, trainees, workplace supervisors, and HR personnel) be captured to ensure lessons learned in the trials can be made the most of.

- That leading practice examples of tools used to facilitate learning in the workplace and leading practice examples of tools that support transfer of learning be identified and publicised in the WDA and CET community.

- That training for writers of curriculum standards includes ways in which WSQ trainees learn in the workplace.

- That curriculum designers work together with trainees, workplace supervisors and trainers in their development of the curriculum.

- That stronger links are formed between training providers and industry employers. Both parties need to understand the value and benefits of workplace learning. WDA can help to foster these links by arranging

information sessions and putting in place programmes that encourage the development of such links.

Further research:

- That the trial of including workplace learning in a number of WSQ programmes be evaluated from its commencement.

- That a study be undertaken to better understand the learning strategies actually used by WSQ trainees.

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Appendix A – Interview schedules

Policy advisors

1	"Workplace learning equals no learning." "Workplace learning is people learning by doing their work, discussing and problem solving with others, watching and listening. It is NOT about formal classroom learning." **Which one of these statements do you think you are closer to? Why?** Prompts: • What does the term "workplace learning" mean to you? • If I use the term "learning in the workplace", is this different to workplace learning? How? Why? • Do you think classroom learning is different from workplace learning? How?
2	How would you define or describe learning?
3	When we talk about OJT (on-the-job training), what does this mean to you? Prompts: • Do you think that there is a difference between OJT and workplace learning? • Do you think that there is a difference between training and learning?
4	In what circumstances do you think the best learning takes place?
5	Let's think specifically about the WSQ and how it happens in the workplace. If I am an HR Manager and I want to organise some WSQ training in the workplace, what do I do? Does doing this get you the type of training and learning you want? Could it be better? Do you prefer this type of training and learning? Why?
6	Do you know of any assessment for WSQ that takes place on the job? Can you provide an example? Prompts: • How is the assessment undertaken? Who undertakes the assessment? What is the relationship between provider, employer, and employee?
7	Have you ever imagined what an ideal alignment between WSQ, and workplace learning and assessment would be like? What do you think the implications are of the existing/current arrangements? Where do you think this will or is leading to?
8	Think about your industry as a whole. Is workplace learning well established in your industry? When did it start?
9	Is there any data captured about these arrangements for workplace learning?
10	**Critical Incidence Questions** I now want to focus on your own learning. So these next questions focus on you in your role now. Thinking about your own job/work, consider when you had a high moment recently (when things went really well) • What happened? What knowledge, skills, and attitudes do you think you need to be successful? How did you acquire this knowledge? Consider when you had a low moment (when things went badly) • What happened? How did you address the situation? How did you know what to do?
13	Can you please order the cards from your most preferred way of learning to least preferred way of learning? • Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning, Classroom learning, Networking with others outside your organisation, Talking

	(dialogue) with others in the organisation, Talking (dialogue) with customer(s), Other

Training providers

1	Tell me about the WSQ training programmes you deliver that have a workplace learning component. (Name/Number of the WSQ programmes) What is the link between classroom and workplace learning? How are trainees supported? What connection do you have with the trainee's workplace supervisor? Each workplace is different, so how do you know apprentices receive quality support?
2	Tell me about the assessment processes for these WSQ training programmes. Who undertakes the assessment? Can we have a copy of the assessment tools you use? Is it possible for us to take a look at the curriculum documents for these particular WSQ training programmes?
3	What are the advantages/disadvantages of the model you use? What advice would you give WDA about structuring workplace learning into WSQ programmes?
4	Do you ever get requests from the industry to run WSQ programmes in their workplace? Tell me about these (probe for classroom learning and workplace mix).
5	"Workplace learning equals no learning." "Workplace learning is people learning by doing their work, discussing and problem solving with others, watching and listening. It is NOT about formal classroom learning." **Which one of these statements do you think you are closer to? Why?**
6	What is "learning" to you? What does the word "learning" mean? How would you define or describe learning?
7	When we talk about OJT (on-the-job training), what does this mean to you?
8	Think about your industry as a whole. Is workplace learning well established in your industry?
9	**Critical Incidence Questions** I now want to focus on your own learning. So these next questions focus on you in your role now. Thinking about your own job/work, consider when you had a high moment recently (when things went really well) - What happened? - What knowledge, skills, and attitudes do you think you need to be successful? - How did you acquire this knowledge? Consider when you had a low moment (when things went badly) - What happened? - How did you address the situation? - How did you know what to do?
10	Can you please order the cards from your most preferred way of learning to least preferred way of learning? Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning, Classroom learning, Networking with others outside your organisation, Talking (dialogue) with others in the organisation, Talking (dialogue) with customer(s), Other

Supervisors

1	Tell me about your role here in this organisation? (e.g. how long have you been in this role, what does the work involve?)
2	**For HR Personnel** Can you tell me what WSQ programmes with a workplace learning component your employees attend? Who attends the units/courses? (Criteria for selection) How is the workplace learning component assessed? How does your organisation evaluate the units/courses? (Value for money)
3	**For Supervisors** What WSQ programmes with a workplace learning component are you supporting or have supported? Can you tell me how the workplace learning part is organised? And how is it assessed? Have you had access to any formal training to help you in undertaking your role in developing others? (need specifics – course, who delivered it, where, etc.) What about informal training (e.g. support and suggestions from others)? Have you found this training useful? Do you have suggestions for additional support for people in your role?
4	The next few questions ask about your thoughts about workplace learning. "Workplace learning equals no learning" "Workplace learning is people learning by doing their work, discussing and problem solving with others, watching and listening". It is NOT about formal classroom learning" **Which one of these statements do you think you are closer to? Why?** Do you think the learning that takes place at work deserves recognition in the form of qualifications (e.g. WSQ qualifications)?
5	What is "learning" to you? What does the word "learning" mean to you? How would you define or describe learning?
6	Are you familiar with the term "on-the-job training (OJT)"? What does OJT mean to you?
7	In which setting (e.g. in the workplace, in the classroom, undertaking projects in both classroom and workplace etc.) do you think the best learning takes place? Which setting do you find most effective for workers?
8	Think about your industry as a whole. Is workplace learning well established in your industry? Why do you think this is the case?
9	**Critical Incidence Questions** I now want to focus on your own learning. So these next questions focus on you in your role now. Thinking about your own job/work, consider when you had a high moment recently (when things went really well) - What happened? - What knowledge, skills, and attitudes do you think you need to be successful? - How did you acquire this knowledge? Consider when you had a low moment (when things went badly) - What happened? - How did you address the situation? - How did you know what to do?
10	Can you please order the cards from your most preferred way of learning to least preferred way of learning? Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning,

	Classroom learning, Networking with others outside your organisation, Talking (dialogue) with others in the organisation, Talking (dialogue) with customer(s), Other

Trainees

1	Tell me about your role here in this organisation? (e.g. how long have you been in this role, what does the work involve?)
2	What WSQ unit/course (with a workplace learning part) are you taking or have taken? Why did you decide to take it/them? Can you tell me how the workplace learning part is organised? And how is it assessed? How you are supported in your workplace learning? How does the classroom learning help or not help with the workplace learning?
3	The next few questions ask about your thoughts about workplace learning. "Workplace learning equals no learning" "Workplace learning is people learning by doing their work, discussing and problem solving with others, watching and listening". It is NOT about formal classroom learning" **Which one of these statements do you think you are closer to? Why?**
4	What is "learning" to you? What does the word "learning" mean to you? How would you define or describe learning?
5	Are you familiar with the term "on-the-job training (OJT)"? What does OJT mean to you?
6	In which setting (e.g. in the workplace, in the classroom, undertaking projects in both classroom and workplace etc.) do you think the best learning takes place?
7	**Critical Incidence Questions** I now want to focus on your own learning. So these next questions focus on you in your role now. Thinking about your own job/work, consider when you had a high moment recently (when things went really well) - What happened? - What knowledge, skills, and attitudes do you think you need to be successful? - How did you acquire this knowledge? Consider when you had a low moment (when things went badly) - What happened? - How did you address the situation? - How did you know what to do?
8	Can you please order the cards from your most preferred way of learning to least preferred way of learning? Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning, Classroom learning, Networking with others outside your organisation, Talking (dialogue) with others in the organisation, Talking (dialogue) with customer(s), Other

Peak employers

1	"Workplace learning equals no learning" "Workplace learning is people learning by doing their work, discussing and problem solving with others, watching and listening". It is NOT about formal classroom learning" **Which one of these statements do you think you are closer to? Why?**
2	What do you think is the thinking behind having classroom-based learning, as opposed to perhaps a mix of classroom & workplace learning?
3	What is "learning" to you? What does the word "learning" mean? How would you define or describe learning?
4	When we talk about OJT (on-the-job training), what does this mean to you?
5	In which setting (e.g. in the workplace, in the classroom, undertaking projects in both classroom and workplace etc.) do you think the best learning takes place?
6	Would you like to see the learning that takes place in the workplace recognised as a WSQ qualification? Why? / Why not? **What do you think would need to be put in place to make this happen?**
7	Do you have any policies around workplace learning? (examples and copies of)
8	**Critical Incidence Questions** I now want to focus on your own learning. So these next questions focus on you in your role now. Thinking about your own job/work, consider when you had a high moment recently (when things went really well) What happened? What knowledge, skills, and attitudes do you think you need to be successful? How did you acquire this knowledge? Consider when you had a low moment (when things went badly) What happened? How did you address the situation? How did you know what to do?
9	Order the following from most preferred way of learning to least preferred way of learning. Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning, Classroom learning, Networking with others outside your organisation, Talking (dialogue) with others in the organisation, Talking (dialogue) with customer(s), Other

Appendix B – Coding schedule

1. Workplace learning arrangements

- Workplace learning – assessment, conditions, support, and challenges

- Training and placement – link and no link

- Simulated environments – physical environment, tasks, tools and materials, and working relationships

- Recommendations

2. Learning and workplace learning

- Valuing (or not) – workplace learning, classroom learning, and WSQ programme

- Transfer of learning – near, far, and barriers

- Definitions – learning, workplace learning, and OJT

3. Case data

- Respondent's role

- Industry details

- WSQ programme details

- Motivation for WSQ programme

4. Learning strategies (preferences)

- Mentoring, Coaching, Demonstration, Observing and listening, Reading, Everyday work activities (just doing it), Watching a video(s), E-learning, Classroom learning, Networking with others outside your organisation, Talking (dialogue) with others in the organisation, Talking (dialogue) with customer(s)

Appendix C – Case Studies

Appendix C consists of case-studies in seven WSQ frameworks, arranged in alphabetical order.

Case Study 1 – Aerospace WSQ Framework

Respondent(s)	Number(s)
Policy advisor	0*
Training provider	1
Company	1
Supervisor	1
Trainees	2

*Note: The policy advisors we interviewed did not comment specifically on the Aerospace WSQ framework.

This CET centre for the Aerospace WSQ framework offers certificate, diploma, and degree programmes that have a workplace learning component in the form of a highly simulated workplace. Diploma and degree trainees are also attached to actual workplaces for about a third of their programme. For this project, we focused on the entry-level certificate that caters to the learning needs of technicians, and those who are new to the aerospace industry. The three month certificate has both classroom and work-based modules. Trainees complete their theory lessons in class, and practice on actual engines in a hangar, "we bought an aircraft that is operational… we train them as though they are supposed to maintain this aircraft into flying conditions" (training provider). Their learning environment is similar to the one at work. For example, trainers adopt the relationships (e.g. teamwork), activities (e.g. systematic and detailed checks and records), and practices (e.g. observing and asking questions) found in the workplace.

Overall, the trainees we interviewed found their programme relevant because they have been able to apply what they learned (e.g. clearing paperwork, handling tools, and identifying, labelling, and stripping engine parts). However, there are some differences between what trainees experience at the CET centre's hangar and at their current workplace. For example, the engines they service at work are much bigger, and they operate out of workshops instead of hangars. In addition, practical tasks at the highly simulated workplace are only carried out for learning purposes and do not have real consequences, "it's not the same [as work that takes place on-the-job], the feeling is quite different" (training provider).

Trainees informed us that after they completed their certificate, they had to return to their host company for a further nine months of in-house training. The rationale behind this is that while the certificate programme gives a comprehensive introduction to the aerospace industry, "the best learning for these trainees is [to] actually come back here and do [the] work, the on-the-job training itself"

(supervisor). Trainees are expected to work and learn at the same time, "we can't stop all production and start learning" (supervisor). They are given an engine manual, and are attached to more experienced technicians who guide them, and supervise their work. Trainees also keep a detailed record of what they learn in a log book, "step-by-step, and the methods… then [the supervisors] will sign that if we are confident of doing it" (trainee). Besides the supervisor, the inspector or section head has to acknowledge that the trainees have completed the recorded trainings. The log books enable the company to keep track of a trainee's progress, and trainee can use the entries in the log book for reference in the future.

Both the training provider and supervisor explained that the culture of learning while on-the-job has been established within the aerospace industry. Work in this industry is thought of as a "vocation", where emphasis is placed on ensuring that trainees can demonstrate their competence through practical tasks, "you need to work on it, you can't just sit in a classroom and look at a diagram" (supervisor). The lack of people with expertise in this industry also means that companies "have to depend on people on the ground to actually work on it" (supervisor), so trainees have to pick up new skills as they work.

The training provider recommended aligning the training and assessment processes of the WSQ with the Civil Aviation Authority of Singapore's (CAAS) requirements. This would mean that once trainees are certificated competent in certain WSQ modules, this is recognised by the CAAS, and they do not need to go for additional training and assessment. He noted that while the WSQ focuses on skills, and the CAAS is more concerned with safety, it would be good if these two regulatory bodies meet and "harmonise". At the moment, trainees in the diploma programme have to complete maintenance modules (e.g. Basic Aircraft Maintenance Skills and Aircraft Maintenance Experience) for the CAAS as well as for the WSQ (e.g. Perform Aircraft General Maintenance Activities).

Case Study 2 – Community and Social Services WSQ Framework

Respondent(s)	Number(s)
Policy advisors	2
Training providers	2
Company	1
Supervisor	1
Trainee	1

The two CET centres for the Community and Social Services (CSS) WSQ framework provide training in different areas[2], and most of their programmes involve workplace learning components. Both training providers emphasised that having practical experience is essential because their programmes are competency-based, "without the actual hands-on experience, you really can't tell whether they do it correctly or not, whether they demonstrate the correct skill sets or not" (training provider). One training provider was of the view that it is only when trainees are in the actual work environment with practitioners that they can be guided in the "right" way of doing their job. While the other training provider felt that having a formal structured industry attachment is ideal, he also considered industry visits, and classroom simulations to be examples of practical activities that contribute to competency-based outcomes.

The first training provider focuses on Senior Services. All of their programmes (Certificate, Higher Certificate, Advanced Certificate, and Professional Diploma in CSS (Senior Services)) have both classroom training (between 15 and 41.5 days) and workplace attachment (between 19.5 and 35 days). Depending on the units they take, trainees may be attached to nurses or management staff in community based hospitals, nursing homes, and day-care centres. These workplace supervisors are briefed by trainers on the course curriculum, and are given a checklist of the competencies trainees need to demonstrate. However, the training provider acknowledged that the training of trainees may not be a priority for workplace supervisors who have their own tasks to complete. To address this concern, trainers and assessors also go into the attachment sites to identify learning opportunities for trainees. During their attachments, trainees follow structured schedules, and at the end of each day, they attend a debriefing session conducted by their trainers. The sessions give trainees the opportunity to ask questions and raise any issues they may have, and trainers pass on the feedback they receive to

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[2] We acknowledge that the CSS WSQ framework covers a variety of sub-sectors, and some are not included in this case-study. In addition, we understand that the Early Childhood Care and Education (ECCE) and Student Care (SC) sub-sectors are no longer part of the CSS framework.

attachment partners. Feedback may include, "what areas our students find useful, the areas our students find that perhaps, [supervisors] can give them more opportunity" (training provider). One trainee reflected that his work experience was valuable because "the more you train in the classroom, the more you would know about [your job], but you have not seen the real thing... it's the emotional part I think, there's certain adjustment needed". His supervisor agreed that even though basic skills are taught in the classroom, this has to be followed by on-the-job training because their job involves "a lot of interpersonal relationships, handling your clients, how do you manage your clients, how do you not get affected by their behaviour".

The second training provider has classes for Disability Services, Student Care, Youth Care and Outreach, Protection and Rehabilitation, and Senior Services. While the majority of competency units for their Higher/Advanced Certificate and Professional/Specialist Diploma programmes require industry attachment, their Graduate Certificate/Diploma programmes do not involve attachments. The training provider found securing formal industry attachments for trainees challenging. For instance, some organisations are reluctant to allow students onto their premises because of duty of care or because they do not have the resources needed to help support trainees. To work around these constraints, the training provider organises workplace visits for trainees. They visit different facilities, and hear from a staff member with an overview of what the job entails. Trainees are given questions to reflect on, for example, they describe the service provided, analyse the direct care skills needed, identify pressure points or difficulties in the setting, how their skills and attributes would match up, and gaps they need to work on to become good workers in the setting. These questions are followed by role-plays in the classroom based on different scenarios. The training provider explained that these activities are put in place "to drown-proof them" so that trainees would be prepared when they are sent out for an attachment, or get a job in the industry.

Both training providers conduct assessment in the classroom and at the attachment sites. The assessment can be conducted by trainers and assessors who go into the workplace, or by workplace supervisors. Supervisors are usually asked to provide a "recording with no value judgement that a student has completed a task... some evidence that they've actually participated in the workplace" (training provider). One training provider noted that asking supervisors to determine the competency of trainees may be unrealistic because the CSS industry does not have "armies of well qualified and experienced people who can make good value judgements about students in training". However, one policy advisor believed that the people on the ground, especially the senior staff members, are experienced and capable enough to make sound judgements of the trainees' performances.

A training provider explained that at the moment, training is not a priority for individuals working in the CSS sector because there are no mandatory

competencies and qualifications. In addition, organisations have not engaged with the WSQ framework not because they are opposed to it, but because they do not know anything about it. According to the other training provider, organisations do not send their staff for training because they cannot afford to lose any of their limited manpower, and because most of their staff members are foreign workers who do not qualify for training subsidies.

Case Study 3 – Food and Beverage WSQ Framework

Respondent(s)	Number(s)
Policy advisor	0*
Training provider	1
Companies	2
Supervisors	2
Trainees	4

*Note: The policy advisors we interviewed did not comment specifically on the Food and Beverage WSQ framework.

This CET centre for the Food and Beverage WSQ framework offers the Diploma in Culinary Arts, the Diploma in Pastry and Bakery Arts, and the Advanced Culinary Placement Diploma. All three programmes have a workplace learning component in the form of an apprenticeship. Trainees who are enrolled in the diplomas (17 months) rotate between two days of classroom learning and four days of apprenticeship. Trainees who take the advanced diploma (two years), complete six different modules. Each module involves one month of classroom learning and three months of workplace training, "[where] they'll apply what they've learned in school" (supervisor).

At the training centre, students learn through lectures and hands-on practical work in the centre's kitchen. Part of their learning involves weekly lunch presentations where classes take turns to cook and explain certain cuisines and processes to the rest of the school. Those in the diploma spend the first of five terms learning the fundamentals (e.g. hygiene, knife skills, interacting with guests). During this time, trainers ensure trainees understand they are joining the hospitality industry, and that their work is considered a profession, "you get certified, you get qualified, you get compensated, and you have great growth within the industry" (training provider). They are also introduced to the working culture of the kitchen, "we make it very clear, this is not a one man show... it's always the group [because that is how a kitchen works]" (training provider). The trainees we interviewed generally felt that what they learned in the classroom was relevant to what they did at work (e.g. learning how to recognise fresh fish, and learning about different dietary requirements).

From term two onwards, trainees are attached to one Asian and one Western restaurant for six months each. The apprenticeship helps trainees to "understand the real process and the theory, what will happen when we apply this or that" (trainee). Some trainees may learn Western techniques while they are on their Asian attachment and vice versa, but the training provider did not see this as a big problem because they should have grasped the fundamentals of cooking by then. Trainees had mixed feelings about their attachments. Some had positive experiences, "learning different things every day". A trainee who was completing his

advanced diploma noted that after his monthly training, he was able to apply what he learned immediately (e.g. after a pastry module at school, he would work in the pastry kitchen). This was possible because the in-house chefs at his workplace planned the trainees' work schedules according to their school timetables (supervisor).

However, other trainees commented that at their attachment sites, they carried out repetitive tasks or were treated as "casual labour". For example, one trainee did not have bread-making experience because his employer could not find someone to replace him at the cookie-making section. Despite choosing their attachment partners based on certain guidelines (e.g. whether they provide opportunities for students to learn), and informing them of what trainees learned at school, the training provider explained that making sure all trainees actually undergo on-the-job training was a challenging task. For example, employers who do not fully understand what on-the-job training involves may not provide trainees with adequate supervision, or may have too high expectations of them. Attachment sites are monitored through partner visits as well as through the trainees' weekly log books and monthly feedback forms (training provider). Besides their apprenticeships, trainees are able to gain a better understanding of their role in the industry through homecoming seminars (e.g. talks by guest speakers, and industry updates), and forge links with professional chefs through talent matches, a time where students have interviews with potential employers.

Even though trainees spend the majority of their time in actual workplaces, they are only assessed at the training centre, "our assessment is skill and knowledge based, so we assess the skill and the knowledge within the school" (training provider). The training provider noted that they are in the process of negotiating a way in which their apprenticeships can be better recognised within the WSQ system. This is important because workplace learning seems to be particularly valued in the food and beverage industry, "what happens in the classroom is very theoretical, but in the workplace, you learn a lot of practical things from your senior [colleagues]" (trainee). One supervisor went as far as commenting that "you can become a great chef without going to school, at the end, it's the workplace which is important, not the school" (supervisor).

Case Study 4 – Landscape WSQ Framework

Respondent(s)	Number(s)
Policy advisor	2
Training provider	1
Companies	2
Supervisors	2
Trainees	2

This CET centre for the Landscape WSQ framework offers the Certificate and Higher Certificate in Landscape Operations, the Advanced Certificate in Landscape Supervision, and the Diploma in Landscape Management. For this research project, we focused specifically on the entry-level certificate programme that was designed for landscape technicians, and those who are new to this industry. According to the training provider, the majority of trainees in this programme do not have any landscaping experience, "so with that training, at the end of the day, they are fully equipped, [only then do] they go into the company to start work". One supervisor noted that when trainees complete their training and return to the company, they are paired with a more experienced worker who mentors them, "[for] approximately one month, the mentor will be there with him [and] when he gets the hang of it, he's on his own".

Throughout their one and a half months of training, trainees alternate between learning in the classroom (e.g. through trainer briefings and watching videos), and in a highly simulated workplace (e.g. fields and parks). As most modules are performance based, trainees only spend a small amount of time in the classroom where "they learn just the fundamentals of the programme, then they actually go on site and the trainer teaches, demonstrates, and the candidate repeats, and practises" (training provider). The perception that going "on site" mimics on-the-job training is not shared by everyone, with one policy advisor pointing out that trainees are not engaging in on-the-job training at the outdoor sites because they are not technically working. However, what trainees experience at these sites is similar to if not the same as what they experience at the workplace. First, their physical space (e.g. working under the sun and without shelter from the rain) "gives them a good feel of the working environment" (training provider). Second, trainees use actual tools and materials for real-life tasks. Trainees reflected that "what we learned there [at the CET centre], we are doing the same thing here [at the workplace]." Third, like trainers, supervisors also work with trainees through demonstrations, "I will show it to them – this is the way to do [things] and you follow my way" (supervisor).

Like the training, the assessment process for each module involves practical as well as oral components for competencies that cannot always be observed (e.g. what trainees should do if their equipment is faulty during operations). The training provider felt that instead of assessing trainees at the end of each module, it would

be ideal if assessment takes place after trainees return to their companies, "they should be given the opportunity to continue the practice in their workplace, and then after maybe three months or six months down the road, then you can actually see whether or not the person is really competent". He was aware that this would only be possible if trainees rotated their job scope (e.g. practice pruning, mowing, planting and transplanting, and plant, pest and disease recognition). However, in the landscape industry, job rotation does not happen to a large extent because smaller companies only offer specific services, and even though larger companies offer a greater variety of services, there is still no guarantee of job rotation. One policy advisor commented that while the training provider's suggestion would help to assess the impact of training, retaining the trainees' statement of attainments (SOA) until after they have had actual work experience is not practical. First, as there is a relatively high turnover rate, trainees might have left the landscape industry after six months. Second, training providers might not have the resources and tracking capability needed to recall trainees for assessment. Third, besides gaining new knowledge and skills, trainees are also motivated by the hope of getting a job or a pay rise when they receive their qualifications, thus a delay in the assessment process might reduce their motivation for training. Last, trainees might not see the need to listen attentively in class if they know that they will only be assessed six months later.

The CET centre's emphasis on workplace instead of classroom learning can be traced back to the history of training in the landscape industry. The training provider informed us that "it has always been on-the-job". It has only been in recent years that structured training for the landscape industry started to become more formalised and recognised in the form of WSQ qualifications. As such, it has taken the training organisation a while "to really change the mindset of the employers that, yes, it's important to send [the] staff [for training] and/or to have skilled workers" (training provider). The workers themselves also need to understand the value of attending WSQ programmes. For example, one supervisor had the impression that the curriculum focused on safety precautions. As such, he did not think it was relevant for his job because they did not have time to do things the "proper way". Despite his concerns, he wanted to attend the programme because "if you've got a piece of paper [qualification], you can earn more, but for me, it's if you work hard, you earn more". He added that he would go for the programme if he could afford the time to do so. This lack of time at work was also a reason why employers were reluctant to send their workers for training, "they just can't afford the time to get them out of site" (training provider). Some employers have managed to work around this issue by sending their supervisors for training, and asking them to run in-house training sessions for other workers. While the CET centre does not monitor these in-house lessons, workers can be assessed by the training provider and gain certification through an assessment-only pathway.

Case Study 5 – Retail WSQ Framework

Respondent(s)	Number(s)
Policy advisors	3
Training provider/Company	1
Supervisor	1
Trainees	2

For the Retail WSQ framework, we approached an in-house ATO[3]. The training provider we interviewed reflected that being a company-based training institute enables them to contextualise and customise what and how their trainees learn. This helps to ensure that they are "really supporting and aligning what [they] are doing to the business" (training provider). They offer three WSQ programmes at the certificate level (point of sales, fresh food (produce) handling, and fresh food (seafood) handling). We focused on the WSQ Perform Point of Sales Operations Training.

The first phase of the training involves five days of classroom-based lessons in a training centre that is conveniently located above one of the organisation's stores. According to the training provider, this intentional decision was made to give trainees the opportunity to observe real-life work processes. During the first two days, trainee cashiers go through an induction programme for new trainees where they "learn about the policies of [the organisation], the history, and things like that" (trainee). This is followed by three days of cashiering training that takes place in a simulated environment. Trainees learn how to operate their cash registers, scan and pack items, and interact with customers. The trainees we interviewed noted that their trainers were able to provide them with useful situational examples, e.g. what they should do if a customer wants to make a payment through more than one means. They also expressed interest in their classroom learning and described it as "fun" and "engaging". After their classroom-based training, trainees are assessed in the simulated environment on how well they work with their cash registers, interact with customers (through role-play), and understand the organisation's policies.

The second phase of the training involves 22 hours of on-the-job training and assessment. Trainees are posted to one of the organisation's stores where they work under the guidance of a supervisor. Information regarding the trainees' classroom learning is communicated to workplace supervisors, "if [trainers] feel that the trainees don't have the confidence or need some help or guidance, then we'll inform the supervisors to maybe pay some attention [to them at the workplace]" (training provider). The on-the-job training aspect of the WSQ programme is one that has been identified by stakeholders as being important and necessary. One

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[3] This ATO is a large retailer. The workplace learning arrangements for retailers in smaller shop spaces with fewer resources would be different from what is described in this case study.

policy advisor pointed out that they encourage on-the-job training by funding it to the cap of the notional learning hours. However, on-the-job training can be resource intensive. Supervisors take time out from their own schedules to support and monitor trainees, and not surprisingly, for trainees who work while training on-the-job, they might not perform to the level that is expected from a fully trained trainee (policy advisor). Another policy advisor noted that even with good learning attitudes, trainees may have difficulty coping with the technical requirements and rigours of a retail job. In order to address these issues, on-the-job training in the retail industry is sometimes conducted "during the less peak hours, off peak hours, so as not to affect too much of the overall operations" (policy advisor).

During their on-the-job training, trainees are given a checklist of what they are expected to do, and this list is linked to their assessment performance criteria. At the end of their training period, they are assessed by their supervisors (who have undergone Advanced Certificate in Training and Assessment (ACTA) modules). However, there are some challenges associated with conducting assessment at the workplace. For example, unlike in the classroom, the assessment cannot be done one-on-one and without interference (training provider). In addition, the assessment process can be time consuming, especially if the trainee does not demonstrate the required competencies with the first customer, "[supervisors] probably have to wait for a few customers in order to complete [the] assessment" (training provider).

The training provider explained that in the past, they only offered on-the-job training. However, as their organisation started hiring more staff members to support their growth and expansion, they realised the need to have a centralised training centre "to give better support to the trainees, so that when they go to the store, they at least have some standard kind of information, guidance of the policy, the standards" (training provider). The organisation's supervisor agreed that staff members who undergo training before they start work have a better idea of what is expected of them. She went on to describe her current working environment as one that is supportive, a place where colleagues help each other out. The training provider also mentioned that they have a leadership programme for their supervisors because "we have a lot of knowledge at the ground level which we can tap on". The aim of the programme is to give supervisors the opportunity to share leading practice examples. Supervisors discuss "concepts like goal-setting, time management, delegation, [and] the following week they come back [and] share with the team how they've applied [the concepts at the workplace]" (training provider).

Case Study 6 – Security WSQ Framework Case Study

Respondent(s)	Number(s)
Policy advisor	2
Training provider	1
Companies	2
Supervisors	2
Trainees	3

This CET centre for the Security WSQ framework offers the Certificate in Security Operations, the Advanced Certificate in Security Supervision, and the Diploma in Security Management. In order to be a licensed security officer, trainees must pass two modules (Handle Security Incidents and Services, and Provide Guard and Patrol Services) at the certificate level. One policy advisor felt that trainees complete the modules because they are compulsory "rather than what I call the intrinsic motivation to learn… I will say the culture of continuing learning, and lifelong learning is still not prevalent in Singapore". Some trainees have also been "forced" to attend the diploma programme because of new requirements imposed by the police (training provider). Interestingly, a policy advisor highlighted that these new requirements have not been implemented.

The training provider offers courses with workplace learning components as part of their Train and Place Professional Conversation Programme (PCP) for the Advanced Certificate and Diploma. The nine month PCP is for individuals who want to switch careers, and it involves both classroom and workplace learning. Trainees complete the classroom component (four months) before they start their placements in actual workplaces (five months), "so you first get [the] knowledge, then you must be on the ground to feel what actually it's all about" (trainee). After obtaining their WSQ qualifications, trainees are bonded to their host company for a further nine months.

In the classroom, trainers try to supplement their lessons with real-life scenarios and props. One trainee appreciated the opportunity to discuss different possibilities with others in the classroom. However, another trainee commented that the real-life examples were not particularly relevant because the curriculum was developed by ex-police and military officers without experience in the security industry. A policy advisor disagreed and explained that as the programme is validated by the security industry and the Industry Skills and Training Council (ISTC), it should be relevant.

Compared to the training conducted in the workplace (e.g. night clubs and hospitals), the PCP's classroom component does not accurately reflect what trainees experience in the workplace (training provider). Therefore, the training provider questioned the rationale behind only exposing trainees to the life of a security officer during the second half of the WSQ programme. He observed that

some trainees found their placements challenging, "they say, 'I didn't know they worked 12 hours, I didn't know I had to this, I didn't know I had to do that', so some fall out, there's a big attrition rate". Besides ensuring that trainees have a clear understanding of what their jobs entail, work placements also give employers the opportunity to find out if a trainee would be a good fit for the company (supervisor). Throughout their five month placement, trainees return to the classroom periodically for more training, and it is the sharing of workplace experiences during these sessions that one trainee valued the most.

In the past, security officers were assessed at their actual job sites, but disruptions to work flows and the need to be licensed while on-the-job has shifted the assessment process into the classroom, "so now assessments are done here in a scenario where it's a very prop-like situation" (training provider). Trainees are assessed by retired police personnel from the Police Welfare Co-operation for security reasons (policy advisor). One issue with the current assessment process is that the assessors do not have the necessary industry experience and knowledge (especially for the Diploma programme) (training provider). Another issue is that the assessment is conducted in English (supervisor). A policy advisor explained that security officers "must" be able to speak, read and write in English. While translators are allowed to be present during the assessment process, trainees have to complete their own security log book entries and reports in English (policy advisor). One Supervisor felt that this assessment process excludes non-English speaking security officers from the workforce. She blamed the shortage of security officers on the WSQ programme, "training can be tailored to these people who have been security officers for a very long time, then at least they can carry on working and that will also give us more manpower". However, a policy advisor added that including other languages will not help to alleviate the manpower shortage as this problem is also caused by other reasons, including poor working conditions and the low profile of the job.

The training provider, supervisors, and trainees we interviewed all agreed that training programmes for the security industry should focus on helping trainees gain experience in actual workplaces. However, after two rounds of the PCP, this programme was discontinued by the Workforce Development Agency early this year. Some of the reasons for this include, a low response from potential trainees (especially among professionals, managers, executives, and technicians), a mismatch between what trainees learn in the classroom and what they do on-the-job, a lack of support from employers who are reluctant to invest time and effort into interacting and communicating with their staff because of the high attrition rate, and the industry's preference to promote workers from within the organisation instead of hiring new workers from the PCP.

Case Study 7 – Training WSQ Framework

Respondent(s)	Number(s)
Policy advisor	0*
Training provider	1
Company	1
Supervisor	1
Trainees	2

*Note: The policy advisors we interviewed did not comment specifically on the Training WSQ framework.

This CET centre for the training WSQ framework offers a variety of programmes, including the Advanced Certificate in Training and Assessment (ACTA). The expectation is that it is compulsory for anyone who wants to develop curricula, deliver programmes, and conduct assessments within the WSQ framework to attend the ACTA programme. The programme consists of the following competency elements:

1. Define the parameters of a training programme;

2. Design a training programme;

3. Develop a training programme; and

4. Evaluate a training programme.

Trainees can choose modules on how to conduct training in a classroom setting (Design and Develop a WSQ Facilitated Training Programme, and Prepare and Facilitate Classroom Training) and/or on-the-job (Design and Develop an On-the-job Training Programme, and Prepare and Conduct an On-the-job Training Programme), "we do train trainers to train via OJT [on-the-job training]… the broken down five step coaching kind of mentoring process" (training provider). However, even with the latter, all training competency units are taught, learned, and assessed in the classroom.

The training provider explained that only their Professional Conversation Programme (PCP) has a workplace learning component. Trainees who complete their ACTA as part of the three or four month (depending on the trainee's qualifications) PCP are attached to a host company during the duration of their training, "in the hopes that this attachment will actually lead to workplace learning" (training provider). When trainees are in the workplace, they are assigned to training supervisors, and will sit in their classrooms to observe how they conduct WSQ training. One trainee who had no prior knowledge and experience in the area of adult learning found the time he spent at his host company beneficial, "when I got to observe the class, it help[ed] me to see the whole picture, how everything in theory is put in place [during the lesson]". He added that his Supervisor also allowed him to deliver and make improvements to parts of the curriculum. His host

(and now, work) company's rationale is that the best learning takes place when trainees are given the opportunity to apply and practice what they have learned after each module, "rather than waiting for [on-the-job] training after [they] complete the programme" (supervisor).

Besides observing how their supervisors conduct training, trainees are required to record and reflect on what they have learned in their learning journals. We were shown some journals, and as noted by the training provider, trainees have responded to the concept of journaling in different ways. Some students detailed their emotional responses (e.g. excited and inspired) to events and activities, how they have been able to apply what they learned, and their own areas for improvement. However, others "just can't articulate what is it they're meant to be doing and what is it they're meant to be recording in their learning journals" (training provider). These would-be trainers used passive language to give basic descriptions of what they saw and did (e.g. who the trainer and trainees were and what they did). As a result, this CET centre has decided to provide trainees with more guidance by structuring the journals, for example, including headings within each entry.

With regards to the WSQ framework, the training provider recommended moving away from rigid competency standards that spell out the competencies that are required and how they must be proven. At the moment, trainees are rewarded for demonstrating their competency in an artificial environment, but workers who are able to show their competency through everyday work activities cannot be declared competent. The training provider added that for the second approach, workplace supervisors need to be able to recognise the different types and levels of the skills they want their workers to have.