

# **Workplace learning experiences of trainees engaged in Singapore's Workforce Skills Qualifications (WSQ) training**

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The inevitability and value of learning through engaging in the activity of work is now well accepted. Being in a real work environment enables learners to not only develop situation-specific knowledge and skills, but also experience the culture, politics, workflows, and time pressures that are part of the productive process. In the vocational education and training sector, efforts have been made to incorporate some form of workplace learning component into the qualification itself. Based on current research, the purpose of this paper is two-fold. First, it provides an overview of the extent and type of workplace learning found in Singapore's Workforce Skills Qualifications (WSQ) framework. Second, it examines the workplace learning experiences of WSQ trainees to identify what and how they learn at work, and the workplace affordances and individual agency that influence this learning.

## **Introduction**

The Singapore Workforce Skills Qualifications (WSQ) framework is a nationally recognised competency-based training system that was established in 2005 with the main aim of upgrading and re-skilling the workforce. This system, which caters to the training needs of 26 industry-specific sectors, is aligned to the National Vocational Qualifications and Australian Qualifications Framework. However, in contrast to its predecessors, workplace learning does not feature prominently in the WSQ. The disjuncture between learning in class and at work raises questions about how the idea of competence is understood, and becomes problematic when a holistic approach to competence (Le Deist & Winterton, 2005) that covers cognitive, functional, personal, ethical, and meta-competence (Cheetham & Chivers, 1996; 1998) is taken. Certain dimensions of competence (e.g. knowing how to behave and making professional judgements) can only be developed in context, and as argued by Sandberg (2000, p. 11), "competence is not seen as consisting of two separate entities; instead, worker and work form one entity through the lived experience of work". Taking this constructivist approach, it makes sense to better understand the development of competence through learning at work.

Unlike in educational institutions with formal classroom arrangements, qualified teachers, and assigned curricula, the productive activity of work is not considered to lead to learning outcomes. In reality, though, the structure and production of work shapes the workplace curriculum and learning experiences (Billett, 2004). The idea of workplaces as learning environments was also drawn on by Fuller and Unwin (2002, p. 107) when they 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 is richly embedded in the workplace, providers of competency-based training need to not only appreciate that these opportunities exist, but have a deep knowledge of them, and build in arrangements for such learning. With this in mind, an exploratory study was designed to investigate the prevalence and kinds of workplace learning arrangements within the WSQ framework. Following this, in-depth case studies of trainees' workplace learning experiences were carried out

to gain a better understanding of what and how they learn through work, and the role of workplace affordances and individual engagement in their learning. This paper draws on data from these two studies.

## Literature review

It is generally recognised that the development of competence for the workplace should include learning in the workplace, but the degree of commitment towards workplace learning in competency-based training systems is influenced by understandings of competence and knowledge. According to Eraut (2004a), vocational education and training programmes provide theoretical knowledge, methodological knowledge, practical skills and techniques, generic skills, and general knowledge about the occupation, its structure, modes of working, and cultural values. While there is little dispute that these types of knowledge are necessary, the ways in which they are conceptualised can present knowledge as static, rather than dynamic and interconnected. When this approach is taken, it is easy to require learners to passively learn out of context (i.e. solely in the classroom). Another concern is the assumption that the knowledge learners acquire is transferable to the workplace when in fact there is little evidence of this taking place (Eraut, 2004a). At the other end of the continuum is the perspective that knowledge is not a fixed “thing” that is acquired. Instead, knowledge generation is thought of as a “process” of solving problems or coming up with ideas in collaboration with others (who bring with them their own set of knowledge, experiences, and perspectives) when the need arises (Gilbert, 2005).

Paloniemi (2006, p. 440) also suggested that “experience gained in authentic work practices is a prerequisite for competence construction and for the development of expertise”. One way of understanding expertise is by dividing it into declarative and procedural knowledge (Tynjälä, 2009). Declarative knowledge is considered to be factual, conceptual or theoretical, 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 and is often implicit; it is also known as ‘knowing-how’. However, this differentiation ignores the need for linkages between the two. A conceptualisation of expert knowledge developed by Bereiter (2002) brings together 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.

Bereiter’s (2002) list presents knowledge as dynamic, and proposes that much of what we ‘know’ comes with experience and from learning in multiple ways and places. Competency-based training need not be limited to the workplace, although some form

of workplace learning is necessary if trainees are to relate what they learn in the classroom to specific work contexts. Eraut (2002) concluded from his study that where there is significant theoretical content, the capability to apply theory can only be fully developed in practice situations. Within the WSQ framework, the clear differentiation between theory and practice in competency standards, training delivery, and assessment regimes hinders such applications. This 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.

Besides providing opportunities for the application of theory, other possible learning outcomes at work relate to task performance, awareness and understanding, personal development, teamwork, role performance, academic knowledge and skills, decision making and problem solving, and judgement (Eraut, 2004b). The processes and strategies central to the development of workplace knowledge and skill include observing and listening, guidance from other workers, and doing the actual work (Billett, 2001a; Unwin, et al., 2008). The idea of ‘just doing the work’ is more complex than it sounds. Billett (2001b) explained that in a real work environment, workers are required to undertake goal-directed activities that involve problem-solving. That is, they 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). Thus, practice and experience are necessary and valued aspects of workplace learning (Billett, 2001a; Paloniemi, 2006). While the workplace can facilitate learning through ensuring opportunities and support for practice and experience, individuals still have to choose to actively engage in their own learning, and make decisions on what and how they learn. It is the dual factors of workplace affordances and individual agency that determine the quality of workplace learning (Billett, 2001a).

## **Research method**

Data was collected over three consecutive phases. First, we drew on existing statistics in Skills Connect, an online management system that training providers use to input information on the WSQ programmes they deliver, to obtain a better picture of the amount of workplace learning within the WSQ framework. Second, we conducted semi-structured interviews with a vertical slice of personnel (eight policy advisors, 12 training providers, 11 workplace supervisors, and 16 trainees) across 10 industries (aerospace, community and social services, creative industry, food and beverage, landscape, precision engineering, process industry, retail, security, and training). Based on the findings from the first two phases, we identified leading practice examples of workplace learning, and went into four workplaces to analyse training guides and staff development policies, conduct interviews with supervisors and trainees, and observe the trainees while they worked. The trainees we selected were training to become hotel chefs, aerospace technicians, coffee baristas, and healthcare assistants. As data collection for the final phase is currently underway, this paper will only cover findings from interviews and observations with trainee chefs.

## Findings and discussion

### *WSQ and workplace learning*

Classroom training, on-the-job training (OJT), and e-learning are the three official WSQ training pathways, but the Skills Connect database also captures additional information on practical/practicum and supervised field training. The following table shows the number of accredited WSQ programmes under each mode of delivery.

Table 1: Delivery of WSQ programmes

Year	Classroom	OJT	e-learning	Practical/ practicum	Supervised field training
2006	1574	4	0	59	0
2007	1850	8	0	42	0
2008	1805	4	0	24	1
2009	17552	0	0	0	0
Total	22781	16	0	125	1

A striking feature of Table 1 is that an overwhelming majority of training takes place in the classroom. From 2006 to 2009, there have only been 16 programmes with OJT, 125 with practical/practicum, and one with supervised field training. It should be noted that the Skills Connect database contains information from curriculum documents submitted during the accreditation process, rather than what actually takes place at the training centres.

### *WSQ and workplace learning arrangements*

The training providers from the 10 WSQ frameworks used a range and combination of workplace learning arrangements. Their choices depended on a variety of factors, including the type of work trainees will do, the level of institutional infrastructure in each sector, and the employment arrangements. For example, while trainees in the creative industry need to learn how to use computer programmes and complete projects within tight timeframes, trainees in community and social services need to learn how to approach difficult clients and reflect on their practices. We categorised the different arrangements into three broad groups.

First, work attachments with no formal links to classroom learning. These WSQ programmes usually come under the Train and Place model. They consist of classroom lessons followed by workplace attachments, but both are perceived by trainers and trainees as being entirely separate from each other. Trainees spend a specified amount of time in the classroom, complete their assessments there, and obtain their qualifications before they move to the workplace for mandatory attachments. Trainee security guards who were in the midst of completing their attachments reflected that they only picked up “the gist” or “a very brief form” of their job scope from the classroom, and commented that this was inadequate. For example, their training centre has a patrolling route located along the classroom corridor that is “not so real” when compared to a route in an actual workplace that would be “very real [for trainees]” (policy advisor).

The next arrangement offers trainees pseudo workplace learning experiences. As some training providers are unable to secure actual work attachments due to reasons such as

safety concerns and intellectual property rights, they set up simulated work environments or organise structured work visits. Trainers expose trainees to authentic activities across multiple situations, ensure they have access to learning resources, draw their attention to the transferability of skills, and provide them with a supportive learning climate. These strategies have been highlighted by Tennant (1999) as being useful in enhancing the transfer of learning.

Simulated work environments mimic actual workplaces in three ways. First, the physical place is the same as, if not very similar to, the real work setting. For example, the aerospace training provider has a hangar, the landscape training provider has outdoor parks, and the process industry training provider has a fully operational live plant. Second, trainees use the same tools and materials they would use in their prospective jobs to carry out authentic work activities. However, these tasks differ from those in real workplaces because they are completed solely for learning purposes and do not have real consequences. As accurately noted by an aerospace trainee, “what we are doing is not the real thing”. Last, simulated workplaces provide trainees with the opportunity to understand the types of work relationships and processes that are valued in their industry. Trainees in the creative industry have to complete digital stories in teams because professional projects often involve collaborative efforts. They also learn about the importance of keeping production hours to a minimum by paying for additional time spent on their computers with Monopoly money.

Structured work visits involve observing what goes on in the workplace before returning to the classroom for follow up activities. The time spent away from the pressures of work gives trainees the space needed for critical reflection. In the community and social services sector, trainees discuss how their current skills and attributes match the jobs at different centres, and consider any gaps they need to work on to become productive workers in the various settings. They also participate in role-plays based on different scenarios. According to the training provider, these activities are put in place “to drown-proof them” so that trainees are prepared and know what to expect when they are sent out for an actual attachment or secure a job in the industry.

The final workplace learning arrangement provides opportunities for learning through workplace/industry attachment, OJT or apprenticeship. An important aspect of this arrangement is the partnership between providers and employers. In the literature on the success of such partnerships, emphasis is placed on effective communication to ensure that all parties are aware of their roles and responsibilities. Training providers explained that they briefed supervisors on the curriculum, and the types of competencies that trainees are supposed to demonstrate. Trainers from the community and social services framework also set aside time to debrief trainees at the end of each day. These sessions are used to address any questions trainees 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). In some workplaces, supervisors took it upon themselves to directly relate what trainees do at work to what they learn in school. For example, a trainee chef noted that during his apprenticeship, he was able to instantly apply the skills he had picked up in class because the in-house chefs rotated his duties according to the classroom topics (e.g. after a pastry module, he would work in the pastry kitchen). Links between learning in class and at work can also be established through the use of learning tools such as journals and log books. Trainees record and reflect on

their workplace experiences, and their entries are checked and signed off by their supervisors and trainers. These resources, which can be used as evidence of competence, are useful as they help trainees to integrate theoretical and practical knowledge to create expertise (Tynjälä, 2008).

We were particularly interested in the teaching and learning that takes place as part of the last arrangement, and followed this up with visits to four workplaces. The following sections focus on data collected from interviews with and observations of three trainee hotel chefs. For the purpose of this paper, we have used the pseudonyms of Eric, Wei and John.

### *What and how trainees learn at work*

As part of their WSQ advanced culinary placement diploma, trainee chefs rotate between one month of classroom training and three months of work apprenticeship over two years. Through their classroom and workplace training, trainees are able to put together what they learn in class and their practices at work to come up with new and better products. For example, Eric highlighted that his lessons on stock making have given him "a different perspective of how to do it in a more refined way". This example highlights the value of theory learnt in class when learners are able to relate it to existing practices.

Reflective learning can also take place as a result of participating in work tasks. Even though Wei had gone through butchery training in class, it was only after working at the butchery section for over a month that "it surprised me how lousy my butchery skill was". He has since learned how to minimise the amount of meat left on the bones through direct guidance from the butcher chef and constantly practicing the new technique. According to him, the school teaches you "the proper way", but the hotel teaches you "their method". Apprenticeships also provide trainees with additional insights that go beyond what is taught in class. As he was in the butchery department, Wei was able to observe and assist with the preparation of food items for the hotel's Super Brunch, a special buffet spread that the hotel organises four times a year, "you can say it's like some kind of lost art, maybe nobody in Asia or very few people in Asia do that or have a chance to learn such classic traditional European food, so that one I really appreciated".

Besides knowledge and skills related to cooking, trainees learn about context-specific workplace demands, processes, and relationships. John who was an accountant previously, has come to realise that it is essential for hotels to complete tasks correctly and on time, and has learnt "a lot of organization, a lot of planning, a lot more of thinking ahead". John also appreciated his rotations to different kitchens because this gave him an overview of the operations in different departments. In this workplace, it appears that once mastered, technical skills fall to the background, and the focus is on process and delivery. For Wei, familiarising himself to a new kitchen every four months was challenging. This is because even within the same hotel, each kitchen has its own unique layout and operating procedures. He has managed to cope by learning to ask the right questions such as where are things kept and what are things used for, "so I find that the assimilation time is shorter and shorter, you get accustomed to it faster". In addition to gaining a better understanding of work processes, trainees learn how to work alongside new work colleagues, and within established protocols and

lines of authority. Wei explained that they usually divide up work tasks at the start of the day, but after working closely with the same group of people, this division of labour soon becomes “automatic”. There is also a sense of trust in each other’s abilities, “everybody is competent in every aspect of the dish so I don’t have to worry”. Through immersion in the work environment and engagement in work practices, trainees learn how to “read” what is happening and anticipate what is yet to happen, and can participate fully in the workflow.

### *Workplace affordances and individual agency*

According to Billett (2001a), the quality of learning that takes place through the activity of work is influenced by both workplace affordances and individual engagement. In terms of workplace affordances, learning is not only mentioned in the hotel’s vision and mission statements, but is integrated into daily practices. The kitchens provide opportunities for trainee chefs to learn by giving them a degree of autonomy over the dishes they are assigned or select to complete. In one of the kitchens that Wei worked in, he had the “discretion to do whatever you feel that is necessary”. The space to make independent decisions on the spot when faced with unforeseen circumstances such as running out of specific ingredients or receiving special requests from guests was the reason why he enjoyed working there.

Wei has the ability to utilise his technical skills, but there is also room for error. This encourages workers to engage in independent learning and risk-taking without the fear of negative consequences.

*Let’s say today for the buffet, I got three types of western soup for lunch. I can choose to practice [making a consommé]. Even if it fails, I can just label it as a broth, you know chicken broth. If it is successful I can name it chicken consommé, and so it’s like you get a chance to do things like that and furthermore, you get to test yourself in a sense of making decisions, independent decisions. (Trainee Chef Wei)*

Over time, Wei builds up confidence in his abilities as a professional chef, “you trust your skill and you trust your knowledge even more”. The chance to try out new dishes also extends to John, even though he is relatively new to the profession. He produces these meals for the executive chefs’ lunch, “we can just come up with any three dishes and [they] just have to taste good because it’s going to be to their lunch anyway, it couldn’t be that bad”. This task is shared between old-timers and trainees, and as they cook together in a supportive environment, both groups teach and learn from each other. In their study, Fuller and Unwin (2002) found that learning is a two-way process with old-timers guiding beginners and vice versa on different activities, and recommended that organisations find ways of ensuring the sharing of expertise takes place. This culture of openness, and the valuing of employees’ views, regardless of their position within the organisation, was observed during the daily line up. After the chef from the management team gave an update, he went around asking if anyone had anything to share or add before dismissing the team. However, the team seemed keen to get back to work, and it appears that less formal channels are more likely to be used to make contributions. Eric gave examples of how his supervisor took on and implemented his suggestions on the types of garnishes to use and on different stock making techniques. He explained that during the planning process, they are

encouraged to share ideas, “when we come up with something new, everybody’s got to think of something [to contribute] too, in the processes, yeah so it’s the whole team”.

Another aspect of workplace affordance is access to adequate support and guidance. During our observations, trainees were left on their own to carry out tasks after having initial discussions with their supervisors, but the supervisors did not stand far off as they often checked back on how the trainees were progressing. They placed themselves strategically so that they could see the work of the trainees without looking over their shoulders. If required, the supervisors would move over to the trainees and quietly instruct, often in Chinese rather than in English. They mainly asked questions and gave instructions on the next steps required for the dish. Another teaching strategy that trainees talked about was learning through demonstrations. Their supervisors would usually show them what to do before they tried it out themselves, and as we saw in the kitchen, supervisors would return periodically, “he gives pointers of what I should be looking [for] or how I should be doing it” (John). Trainees appreciated the guidance they received from their supervisors, “they will teach you along the way, they will take care of the trainee” (Eric), and spoke about feeling “a sense of belonging” at work (John).

The other dimension of workplace learning that needs to be considered is individual agency as trainees are not passive recipients of what the workplace offers. They have to make the effort to engage in the learning process, and this was evident among all three trainees. John kept a notebook, “techniques wise, usually I will write it down”, and referred to it in the kitchen. Compared to John, Wei went one step further in the documentation and reflection of his own learning. His enthusiasm was apparent when he described how he detailed the processes used for the preparation of the Super Brunch, “I kept taking [photos] and then asking for the recipe and then step by step, also go back, you take the photo, you document the photo and you try to remember”. The third trainee, Eric, also showed initiative and willingness to learn even though was not new to the job, “most of the things I already know, but sometimes what I can do is maybe you can change the garnishes, you know make it more nice looking or better presentation, yeah that’s how I learn the new creative way to make a dish present more nicely”.

## **Conclusion**

It is now well established that participation in work is a process of and for learning, and enculturation in work practices and norms. However, at this stage, workplace learning is not a priority within Singapore’s competency-based WSQ framework. Nevertheless, our research project has illustrated instances in which training providers have complemented their classroom training with different forms of workplace learning arrangements. Such arrangements include completing practical tasks in simulated work environments, visiting work sites and discussing observations, and engaging in the productive activity of work. In competency-based training, there is a divide between theory, referred to as ‘underpinning knowledge’, and practice, one aspect of which is referred to as demonstrable skills. The initiatives described in this paper help to bridge the divide between theory and practice. This is essential for the development of vocational and professional expertise (Tynjälä, 2008).



After surveying the landscape, we took a closer look at individual learning processes, and how the two factors of workplaces affordances and individual agency influence learning through engagement in work activities. In the example of hotel chefs undertaking their apprenticeships, we found that learning was intentionally promoted in the kitchens. This is a positive example of supported workplace learning, and we are aware that this kind of support is not always found in workplaces. Trainees were given time and space to utilise their knowledge and skills, and were encouraged to make autonomous decisions and try out new recipes and techniques. The workplace was also inclusive and invitational with trainees sharing their ideas openly, and supervisors implementing these ideas where appropriate. Supervisors provided structure around the trainees' learning by offering adequate guidance and support. They thoughtfully matched appropriate tasks to the trainees' competencies and monitored their progress. While the social setting was conducive for learning, the quality of learning was also determined by the trainees' engagement in their own learning. All three trainee chefs appeared keen to hone their skills and knowledge. They displayed this by putting in effort to actively document and reflect on their practices with the aim of becoming better chefs.

Our research has shown that as well as deepening existing expertise in a specific discipline, participating in actual work tasks helps trainees to learn about workplace demands, processes, and relationships. These essential aspects of work move well beyond the scope of classroom teaching and learning. Immersion in the work environment and involvement in work practices enables trainees to learn how to "read" situations and interpret the behaviours of others in order to respond accordingly. In this way, they constantly apply and refine their understandings and practices. The trainee chefs developed their competence as chefs by employing a variety of workplace learning strategies, including observing and listening to the demonstrations and instructions given by their supervisors, and engaging in daily work tasks and reflection (Unwin, et al., 2008). Through participating in the activity of work, the trainees in our study develop their identities as chefs, and are able to proudly declare their sense of belonging to the world of chefs.

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