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1. Executive Summary

1.1. Purpose

This research takes a unique approach, delving into the capabilities and practices of effective work-based trainers supporting New Zealand Apprenticeships in the construction and infrastructure industry. Instead of imposing education perspectives and theory, we sought to gather insights from those with hands-on experience in work-based training. The goal was to understand their perspectives on the capabilities, best practices, and appropriate capability development solutions that support effective work-based training.

1.2. Introduction

The findings of this research, which bring the voices of those involved in work-based training into a framework, have direct practical implications. They inform recommendations for work-based trainers, employers, work-based learning providers, industry bodies, and qualification developers, providing actionable insights for improving work-based training in the construction and infrastructure industry.

The research involved a literature review and semi-structured interviews conducted between July and September 2023 in seven construction and infrastructure workplaces in Aotearoa New Zealand.

We interviewed:

- Nine work-based trainers,
- Seven apprentices who were enrolled in a qualification with a tertiary education provider,
- Eleven people in strategic roles, e.g. regional manager, provider-based training advisor, iwi-based project manager, evaluator, assessor, learning and development manager.

The data gathered from the interviews was used to develop a Work-based Trainer Framework. Based on the concept of a retaining wall built to protect and support the land behind it, this 'Work-based Trainer Framework' is designed to develop work-based trainers to protect and support apprentices as they develop into successful tradespeople. The five posts in the "retaining wall" are the overarching themes of the research. These focus on themselves as work-based trainers and learners, teaching and learning skills, assessment and feedback skills, and finally, building independence in the apprentices to become productive colleagues. Each of these themes is supported by the capabilities and knowledge the work-based trainer could develop within that theme.

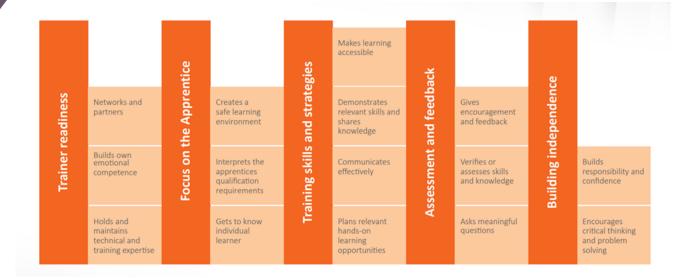


Figure 1: Work-based Trainer Framework

We also identified key enablers and barriers to effective work-based learning, summarised in the tables below.

Enablers of effective work-based training:

Leadership commitment	Prioritise and invest in training
to developing a learning	 Promote leaders who have on-job experience
culture	Support diversity and organisational change
	Partner with learning and development teams
	Celebrate success
Trainer attitude,	Allocate dedicated time for planning and delivering training
preparation and	 Recognise and praise the efforts of skilled trainers
support	Provide coaching from experienced trainers
	Access to networks with other trainers, training and workshops
Partnerships with	Connect with iwi and mana whenua
stakeholders such as	Provide wrap-around support for apprentices
iwi, communities,	Industry certification
providers and industry	 Support collaboration between employers, education providers, and industry bodies
	 Facilitate access to resources, expertise, and opportunities that enhance work-based training, such as co-designed programs and shared learning events.

Apprentice preparation,	•	Provide initiatives such as paid study hours
incentives and support	•	Provide strong foundations for workplace learning (e.g. numeracy and literacy, self-directed learning)
	•	Support peer mentoring, peer learning and role models
	•	Celebrate apprentices who complete qualifications
	•	Recognise apprentices' prior knowledge and skills

Barriers to effective work-based training:

Shortcomings in work- based learning	 Misalignment between provider assessments (especially bookwork) and workplace realities
programs	 Overly academic learning materials
p. 00. a	 Difficulties gathering evidence of competency can hinder the relevance and completion of qualifications
	 Some workplaces cannot provide learners with all the training experiences they need to learn.
Productivity pressures	Employers focused on immediate operational demands mean the
limiting training time	time and attention needed for quality training may be sacrificed, particularly when there are job/time constraints, skills shortages, or narrow/short-term performance measures.
	 Employers may not understand the commitment required to provide training
	 Learners are not provided with time to study.
Lack of trainer development opportunities and	 Many trainers are thrust into the role without adequate preparation or ongoing development, as there is a reported scarcity of suitable train-the-trainer courses and limited guidance or support from employers
support for training	Additional training is not valued or supported by the employer.
Organisational culture issues	 Unsupportive or discriminatory behaviours from colleagues or managers, coupled with productivity pressures, can create an environment that inhibits learning, well-being, and retention of apprentices.

Implementation of the Framework to overcome barriers and promote enablers can be achieved through the following recommendations.

Recommendations

Qualification developer	Use relevant findings from this research to inform graduate
Qualification developer	profile outcomes, learning outcomes, and performance criteria for revised or new work-based trainer qualifications, skills standards, or micro-credentials.
	 Use relevant findings to inform pathway opportunities for work-based trainers to move into training roles at tertiary education providers.
Industry bodies	 Recognise and support effective training through learning opportunities for work-based trainers, certifications -or other methods (e.g., NZCB's 'Coach the Crew' programme and CCNZ's Civil Trade Certification).
Education providers	 Help employers make an informed decision about their existing capacity and capability to support apprentices by using the framework for training needs analysis discussions. Use the research findings to inform program, assessment, and resource design and delivery, particularly regarding supervision, leadership, mentoring, and communication skills. Recognise and support the development of work-based trainers by providing resources and learning opportunities based on these research findings.
Employers/work-based	Prioritise the development of trainers to address skills gaps and
trainers	 compliance, support leadership development, create an excellent place to work, and provide pathways for employees. Provide time, space, training, and development opportunities for all tradespeople to become work-based trainers.
	 Use the five focus areas and subsequent capabilities in the framework for recognising and raising the capability of trainers at work as a continuous improvement initiative.
	 Partner with relevant business people or teams to develop organisational support structures for work-based trainers and capability initiatives/projects.
	 Strengthen external partnerships with education providers, industry bodies, and other employers to enable best work-based training practices.
	 Embed relevant capabilities into compliance or refresher training so team members can practice them
Procurement decision-	Make decisions around the training capability of individual
makers	businesses

 Understand the enablers and constraints of providing effective work-based training

1.3. Glossary of Terms

Term	Meaning
Capability	Refers to skills, knowledge and behaviours
Apprentices	All work-based ākonga/learners enrolled in a Level 4 qualification of at least 120 credits and supported by an education provider and employer. The apprentice must be employed in an industry. Other terms that could be used are trainees or learners.
Work-based training	Learning that takes place at work, through work, for work.
Work-based trainers	Work-based kaiako/trainers who support apprentices to succeed in their work role and to complete qualifications while employed by the industry. They could be the apprentices' employer, supervisor or manager. They are not provider-based trainers or training advisors.
Work-based learning providers	Tertiary education providers responsible for arranging work-based training.

2. Introduction

Vocational education and training (VET) is crucial to developing a skilled workforce. With international skills shortages occurring in much of the workforce serviced by VET, organisations worldwide need to invest in work-based training to close skills gaps (World Economic Forum, 2023). The gains from the organisation's investment are rewarded as the apprentice qualifies, creating confidence and growth in the apprentice and improving the workplace's productivity. The work-based learning journey enriches the apprentice, and qualifying could often be life-changing for them and their families.

Work-based training is utilised in various forms in the construction and infrastructure sectors in Aotearoa New Zealand. A key work-based learning qualification in Aotearoa New Zealand is the Level 4 trade qualifications in these sectors. To participate in a Level 4 trade qualification, the learner must engage in work-based training, commonly known as an apprenticeship (Tertiary Education Commission, 2023a). An apprenticeship allows learners to gain valuable skills in a relevant workplace while being supported by a tertiary education provider (Mahony, 2015; Tertiary Education Commission, 2023a).

Quality work-based training is paramount in the construction sector, which hosted the largest number of apprentices in 2022 at 44% of all apprentices (Education Counts, 2024). However, the five-year apprentice qualification completion rates in Aotearoa New Zealand have been steadily declining, reaching a concerning 47% in 2022 (Education Counts, 2024). This significant drop in completion rates necessitates thoroughly investigating the potential causes. One aspect to consider is the workplace's role as the primary learning environment.

The Tertiary Education Commission's current Unified Funding System in Aotearoa New Zealand expects providers and employers to work together to support learning and teaching in the workplace (Tertiary Education Commission, 2023b). There is an assumption that workplaces can provide the required learning experiences to develop the skills and knowledge of apprentices (Alkema et al., 2016). However, this is not always true for many workplaces (Smith, 2001). The International Labour Organization (ILO: 2024) has identified quality teaching and learning skills as key to improving retention in an apprenticeship programme. However, those tasked with work-based training have the necessary technical skills but may not have the opportunity to develop the teaching and learning skills to support the apprentice (Civil Workforce Forum, 2022; Australian Department of Employment and Workplace Relations, 2023).

The development of teaching and learning skills requires a comprehensive, continuous and coordinated

approach from workplaces and such skills are often provided to the privileged few, such as managers or those specifically employed to support apprentices (Australian Department of Employment and Workplace Relations, 2023; CEDEFOP and Refernet, 2023; Smith, 2001). However, there is no guarantee that these people will be the only colleagues tasked with training the apprentice, potentially leaving the apprentice feeling uncomfortable with their learning and the workplace, therefore reducing the likelihood of them remaining in their job and completing their apprenticeship (Australian Department of Employment and Workplace Relations, 2023; CEDEFOP and Refernet, 2023).

The type of learning experience in the workplace further highlights the importance of development for those providing training for work-based learners. To be successful in work-based learning situations, learners are required to possess or develop the ability to be self-directed in their learning journey; however, these learners often require assistance to engage with the flexible delivery of training (Smith, 2001). Furthermore, self-awareness, empathy, active listening, and leadership are examples of the human skills required for the future of work (Wells,2024). Skills that require specific training that work-based trainers may not be able to support apprentices in developing.

Work-based learning in Aotearoa New Zealand is a tripartite relationship between the employer, the apprentice and the tertiary education provider. The Code of Good Practice for New Zealand Apprenticeships (2023) has been developed to support the tripartite relationship between the employer, apprentice and tertiary provider and outline the three parties' responsibilities. The apprentice is responsible for working and learning, and the tertiary education provider must communicate with and support the apprentice and the employer while the apprentice is working towards their qualification. The employer is responsible for providing active and effective training and mentoring for the apprentice in the workplace. A key element of active and effective training and mentoring is the provision of relevant work experiences so apprentices can progressively build their skills and knowledge in the workplace. However, some challenges come with training others, especially where no formal support exists for apprentices within the organisation.

2.1. Methods

To understand the capabilities of effective work-based trainers, 27 semi-structured interviews were carried out across seven different construction and infrastructure workplaces around Aotearoa New Zealand. Within the group of 27, nine were work-based trainers, seven were apprentices, and eleven were in strategic roles. All the trainers were involved in work-based training, not in a classroom-based environment. All the apprentices were enrolled in a qualification. Regional managers, provider-based training advisors, an iwi-

based project manager, evaluators and a learning and development manager made up those in strategic roles. Interviews were conducted either face to face, by phone or online, and notes were taken during the interview. Some interviews were recorded, but taking notes was often more straightforward (and preferable for the interviewee).

2.2. Who is involved in training?

The responsibility for training apprentices in a workplace can fall to many people. As Alkema et al. (2016) described below:

"The face of training for the trainee could be the HR person, a training coordinator, a supervisor, a branch manager, or a workmate who is one step ahead in their training. The interviews reveal a level of organisational awareness of training that varies from an intimate day-to-day involvement (almost a master and apprentice model) through to organisations where there appears to be only a minimal or peripheral awareness that national qualification training is even taking place." (p. 50)

The research presented here found similar findings to those in Alkema et al. (2016). Figure 2 below discusses the types of work-based trainers introduced by the participants of this research.



Figure 2: Types of work-based trainers in work-based learning. Image credit: Bronte Messam

Of most concern is the colleague's unawareness that they are in a training position, which we have named 'the uninformed'. Anyone on the construction or infrastructure site assigned to work with an apprentice and unaware they are required to provide training is put in a challenging situation. The would-be work-based trainer would expect a proficient colleague to do the required task, leaving the learner in an unsafe position. Team members were sometimes aware they were providing some training. However, these colleagues were not always provided the teaching and learning skills to provide effective training. These examples were work-based trainers with similar experience, either at a similar level to the apprentice, 'the buddy', or a recent graduate. Some colleagues had the technical expertise and knew they were providing training (the technical

expert) but struggled to impart the knowledge and skills to support the apprentice on the journey. While there was a belief that 'the supervisor' in the workplace would be a work-based trainer, often they struggled to balance the work to be completed and the apprentice's learning needs.

In contrast to the previously discussed work-based trainers, some work-based trainers were explicitly employed to support apprentices. 'The chosen ones' would be employed as work-based assessors or company-wide trainers. These work-based trainers often focused on assessment, bookwork, and the pastoral care needs of apprentices. In larger companies, a learning and development team member may support the apprentice directly or work with others to facilitate learning.

The different types of work-based trainers highlight the haphazard nature of work-based training. If quality teaching and learning are required to improve outcomes and retention, how can we provide a system that best meets the apprentice's learning needs?

2.3. Capabilities and Good Practices of Work-based Trainers

As the workplace is a significant learning environment for those completing apprenticeships, those providing the training must understand how to be an effective work-based trainer. The impact of not having an effective work-based trainer can result in an apprentice not completing their qualification and possibly leaving the sector. Such an experience was discussed by an apprentice who explained how "[some work-based trainers] don't have a good understanding of how to train you...[they] just show you how they know how to do it" (Apprentice 3). In line with the literature on work-based learning and teaching, there is a need to establish a common understanding of effective training and mentoring. As Alkema et al. (2016) states,

"...the underlying assumption that workplaces are capable and have the capacity to provide valuable learning experiences also requires further consideration. Future work to explore what good practice looks like within the work environment, to develop the skills and knowledge of trainees, would be a helpful addition to what is already known."

Many have highlighted the need for work-based trainer support in terms of workshops, mentoring schemes, or informal learning opportunities such as networks or communities of practice (Durkin et al., 2015; Harris et al., 2000; Holland, 2009; Savage, 2016), however, such support opportunities do not appear to be commonplace. A common discussion among participants in this study was that there is a lack of courses, resources, or support for them to become work-based trainers, and there is a belief that employers "just leave us to it" to develop the required skills (Trainer 6). Those with knowledge or experience of programmes

supporting work-based trainers often commented negatively about the provision. For example, "the train the trainer course isn't done well" (Assessor 2) or "there is no workshop I can recommend" (Provider 4). One work-based trainer thought having Unit Standard 4098, Use standards to assess candidate performance, was useful (Trainer 3). However, this standard is not designed to support effective training but focuses on assessing performance. While it is acknowledged there are a number of Unit Standards in the Domain - Delivery of Adult Education and Training, they are arguably not fit for purpose for those who deliver work-based trainers. This highlights a notable gap in courses, resources, and support for tradespeople to gain the skills to become effective work-based trainers.

Understanding good practices is important to creating an effective programme that supports work-based trainers. This research aimed to understand the capabilities and good practices of work-based trainers. After analysing the data, we found five key development areas, highlighted in the Work-based Trainer Framework below (see Figure 3).

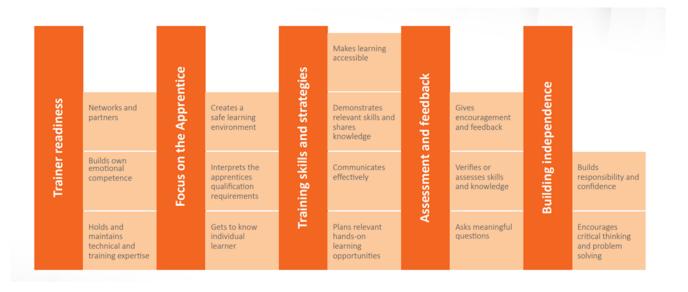


Figure 3:Work-based Trainer Framework

Just as a retaining wall is built to protect and support the land behind it, this Work-based Trainer Framework is designed to develop work-based trainers to protect and support apprentices as they develop into successful tradespeople. The five posts in the retaining wall are the overarching themes of the research. These focus on themselves as work-based trainers and learners, teaching and learning skills, assessment and feedback skills, and finally, building independence in the apprentices to become productive colleagues. Each of these themes is supported by the capabilities and knowledge the work-based trainer could develop within that theme.

The following sections will discuss each of these themes and capabilities further. They emphasise the foundational skills and support required to become an effective work-based trainer in the construction and infrastructure industry in New Zealand. These foundational skills are necessary for work-based trainers to excel in their roles and contribute meaningfully to the growth and success of apprentices in the workplace.

3. Trainer Readiness

This section focuses on the work-based trainer developing the readiness to support a colleague in becoming a qualified tradesperson. The first of the three capabilities that support the work-based trainer in preparing for their role in the apprentice's learning journey is holding and maintaining up-to-date technical expertise. The second focuses on the work-based trainer having a network or partnerships to support them and their apprentices. Finally, this section will focus on the importance of emotional intelligence, the work-based trainer's understanding of themselves, and their reactions to events. While it is important for a work-based trainer to begin the development of these at the beginning of their training journey, it is equally important for work-based trainers to continue to develop these capabilities.

3.1. Holds and maintains up-to-date technical expertise

It is widely accepted that having technical trade knowledge is an important component of being an effective work-based trainer (Johnson, 2016). Holding technical trade knowledge and skills was often discussed by those working strategically. When hiring work-based trainers, the time they had been qualified and their experience were the critical factors. A manager described it as having "been at the organisation for a while — a known quantity" (Manager 2). While the relevancy of the technical knowledge is highly valued, the apprentices felt that the length of service within a trade did not always translate into being an effective work-based trainer. At times, apprentices saw newly graduated tradespeople as more effective at helping them learn new knowledge and skills. This, in part, could be due to their skills being more relevant to what the apprentice is learning.

With the length of experience being up for debate, what was agreed on was the work-based trainer holding relevant or up-to-date technical skills. One Provider believed that effective work-based trainers were those who "continue(d) to learn and upskill themselves" (Provider 4). They went on to describe a work-based trainer who "sits down and studies with them (apprentices)", rating the work-based trainer highly because "they continue to learn and upskill themselves. They are also learning" (Provider 4). Those who did not continuously upskill were seen as ineffective work-based trainers. They were seen as ineffective as someone with "heaps of knowledge from the past 30-40 years but no new knowledge" (Trainer 1). Not having new knowledge was seen as "teaching shortcuts", and there is a "need to teach people how to do things properly" (Trainer 6). Overall, work-based trainers who continuously learn and upskill themselves are considered more effective in passing on relevant knowledge and skills.



"He's been where I've started, knows the steps to get to, wants to support the crew."...Construction apprentice

3.2. Networks and Partners

Networks and partnerships enable the work-based trainer to facilitate learning opportunities for apprentices (Harris et al., 2000). These partnerships could be through internal networks. The use of internal networks was discussed by a manager, where managers and technical experts partnered with the learning and development team to create "study groups (and) decide on outcomes and how to support learners to meet business goals" (Manager 4). Partnerships and networks outside the work-based trainer's organisation provide opportunities for apprentices to gather evidence for tasks that are not available at their place of work. An Infrastructure Manager stated that the "toughest part is that some of the tasks must be completed outside the work environment – need to partner with people to achieve the qual specs" (Manager 2).

While networks and partnerships support the apprentices in their learning journey, they can also support the work-based trainer on their journey of continuous improvement and provide opportunities for their apprentices to gain valuable learning experiences. For the work-based trainer, having well-developed networks and partnerships outside the business allows opportunities to keep up to date with new technical or training skills and knowledge. One example a work-based trainer provided was networking with architects, building inspectors, and licensed building practitioners to keep up with new rule changes or regulations.

Alongside developing technical knowledge, developing and maintaining partnerships allowed work-based trainers to develop their knowledge of teaching and learning. An essential partnership is with education provider representatives. This partnership lets the work-based trainers keep abreast of the qualification requirements and other critical information to support their apprentices. Alongside the critical information, these partnerships often support the development of teaching and learning skills for work-based trainers, such as modelled coaching techniques and using conversation prompts with the apprentice. In addition to the partnership with the work-based learning providers, other partnerships were sought to support the work-based trainers when working with apprentices. One example was when an organisation partnered with local iwi and "sat down and listened" and "got the local kaumatua involved" to better engage with their predominantly Māori workforce (Assessor 2).

3.3. Builds Own Emotional Competence

Emotions shape interactions between work-based apprentices and trainers. O'Toole et al. (2010) completed a study in Aotearoa New Zealand into emotions' role in classroom-based tertiary teaching. In this study, teachers believed they needed to regulate their emotions to prevent emotional fatigue. Many teachers in the study also believed their emotional awareness was linked to positive student outcomes and their ability to self-reflect, supporting them in not bringing their own negative emotions into class. Similar findings were discussed in this study: the work-based trainer needs to build emotional competence alongside technical skills, knowledge, and experience. Juggling the twin demands of working and training requires emotional skills such as patience and self-motivation.

Emotional competence is a set of Emotional intelligence (EI) skills that help people understand their behaviour and values, how to regulate and motivate themselves, why others behave the way they do, and the skills to relate to others. It is helpful to consider these skills as elements grouped under five main components: self-awareness, self-regulation, self-motivation, social awareness and social skills (Persona Global, 2005). The research on emotional competence suggests a linear progression from a starting point of developing self-awareness and progressing to social awareness (Goleman, 1995). While few work-based trainers interviewed in this study spoke explicitly about identifying and regulating their emotions first, a Construction Trainer indicated that work-based trainers "need a good understanding of others so they can understand themselves" (Trainer 3).

Self-awareness is about understanding one's emotions and how they may affect relationships and performance. In a training environment, for example, a work-based trainer with skills in self-awareness may notice they are becoming impatient because it is taking their apprentice longer than expected to learn a new skill, especially as they know they have limited time to get the job done. Self-awareness also relates to feeling positive about one's ability to perform in a training role. When work-based trainers feel positive about their experience, skills, and knowledge in teaching the trade, they project self-confidence, which their apprentices notice and highly regard. One apprentice believed her work-based trainer was motivated to train others because he "loves it... has a knack for it" (Apprentice 1). However, self-confidence is not arrogance. A construction manager described an ineffective work-based trainer as someone who has an "ego" and believes that apprentices "need to listen" rather than "actively listen and question" the apprentices themselves (Manager 4). This highlights the importance of work-based trainers having both technical and training skills or experience.

Another 'self' focused emotional competence skill is self-regulating or controlling one's emotions (Persona Global, 2005). In a training environment, patience allows the work-based trainer to "take a step back, give the person a chance, explain again" (Trainer 6). Having patience was highly regarded by work-based trainers and those in strategic roles, as the ability to take a step back supports the work-based trainer not to make a "big deal about them [apprentices] doing something wrong" (Trainer 4). Ineffective work-based trainers were described as those who "panic and shout", and "give off a vibe that if (the apprentice) stuffs up, (they are) going to yell". (Provider 2). Not making a big deal about doing something wrong and allowing the apprentice another learning opportunity supports growth in confidence as they master the task.

Self-motivation is the drive and optimism required to take the initiative and remain committed (Persona Global, 2005). For work-based trainers in this study, the strongest source of self-motivation was intrinsic (a positive emotion from within); however, work-based trainers were also motivated by extrinsic or external factors. In a work-based training context, self-motivated work-based trainers commit positively to the development of the apprentice or the business or industry.

Many work-based trainers said they train because they enjoy noticing the apprentice make measurable changes over time and grow in confidence. One work-based trainer said, "It's rewarding to see them do well. You can see the difference between last month and this month. There is excitement in him, confidence, (I am) happy to be on site with him" (Trainer 5). Seeing happy people at work "...growing in confidence, communicating..." (Trainer 2) motivates work-based trainers. A Construction Trainer talked about "taking pride in (her) apprentices, wanting them to succeed (and to) "confidently say, 'I trained them" (Trainer 1). Self-motivated work-based trainers were noticed by apprentices also, with a carpentry apprentice explaining that his work-based trainer "likes to see our skills developing...(he) says we're doing good" (Apprentice 6).

Another reason why it was thought that work-based trainers commit to training apprentices was that they have a sense of "passion for their trade, loyalty to the industry and knew they were supporting the closing of the skills gaps, particularly when someone is "nearing retirement, (and they) realise that their time is coming up" (Manager 4). Work based trainers also said they wanted to pass on their skills, and "if (apprentices) pick this industry they deserve to get the best out of it" (Trainer 2). They train others because they "don't want to hold anyone back. Everyone deserves to learn" (Trainer 2). An employer said, "Our responsibility today is to make buildings better for tomorrow. I want them to be faster, better than me" (Trainer 5). Apprentices also recognise this sense of passion for the trade. One carpentry apprentice said, "You can ask them (work-based trainer) any question, and they are invigorated to share it with you. They love their trade, and they love sharing it with you" (Apprentice 2).

Some work-based trainers said they train for external reasons (extrinsic factors). They noted that a skilled apprentice will contribute to the team or "make the job easier for everyone once everyone is at the same competency level" (Trainer 1). Another Construction Trainer noted that a trained worker "makes my job easier, takes some of the workload off me" (Trainer 6). This was also understood by a carpentry apprentice who said being well-trained "takes the stress load off him (employer)" (Apprentice 6).

"It's rewarding to see them do well. You can see the difference between last month and this month. There's excitement in him, confidence, (I'm) happy to be on site with him." ... Construction employer/trainer

4. Focus on the Apprentice

This section highlights the importance of work-based trainers spending time getting to know each apprentice personally. This includes knowing their apprentices' personalities and backgrounds and accurately interpreting their apprentices' qualification requirements. Finding the time to get to know individual apprentices is often challenging at a busy workplace, but many work-based trainers have identified this as a foundation for building relationships and trust.

4.1. Gets To Know Individual Learners

The Australian Department of Employment and Workplace (2023) indicated that a positive learning relationship between work-based trainers and apprentices could improve apprentice retention and qualification completion outcomes. Developing a positive learning relationship begins with the work-based trainer getting to know the learner. The importance of getting to know apprentices as individuals was often mentioned by apprentices, work-based trainers, and those in strategic roles. Spending time together on the way to a job, at lunchtime or while working on a task was seen as a way to get to know the learner (Buchanan et al., 2016; Harris et al., 2000; Kerehoma et al., 2013). In this research, the apprentices valued chatting with their work-based trainers about non-work-related issues and getting help. When reflecting on his learning journey as a young person, one manager discussed a work-based trainer who "gave his time, listened, took an interest in me". The teacher who "never stopped asking questions about who I (apprentice) was" made the manager feel so special that he remembered the experience many years later (Manager 1).

Getting to know an individual builds trust and supportive relationships and might include knowing about their family background, iwi, hobbies, mental health, prior knowledge and skills, and personalities. An Infrastructure Trainer said you have to "connect with them. Ask personal questions, e.g. age, children, what do they love, work experience and work ethic, personality...then (as a work-based trainer) you can work out how to treat them" (Trainer 4). The same Infrastructure Trainer recognised the importance of knowing individual personalities, explaining, "Are they quiet, or boisterous and confident? They're [apprentices] not all the same, (everyone is) unique – some are diligent – they do their work and listen, others you need to encourage and nurture" (Trainer 4). Forming these positive relationships was supported by regular references in the literature about the importance of work-based trainers connecting with the apprentice, gathering ideas about their apprentice's goals, being easy to get along with (Buchanan et al., 2016; Durkin et al., 2015; Savage, 2016), and building trust (Durkin et al., 2015; Savage, 2016). Getting to know the apprentices as

individuals allowed the formation of positive relationships that supported the apprentice's learning journey.

Part of understanding individuals was recognising the importance of knowing about the apprentice's personal life and the impacts on work and mental well-being. A Provider recommended that "a work-based trainer...should know the apprentice at a personal level; family, hobbies" (Provider 3). An employer says he prioritises getting to know the family backgrounds of his apprentices, and he "knows about his home life...it gives me (employer) an insight into the way they learn, respond to stuff, how to speak to him, what he could be going through" (Trainer 5). A few of those interviewed spoke about supporting the young person's mental well-being or helping them with any domestic issues. However, dealing with these issues without partnering with providers or training could be challenging for a work-based trainer (Durkin et al., 2015).

Despite the importance placed on apprentices spending time with work-based trainers, this is not always possible in a work environment with deadlines (Alkema et al., 2016; Buchanan et al., 2016; Holland, 2009; Savage, 2016). Trainer 2 explained, "You need to be prepared to spend time with them..." (Trainer 2); however, in the workplace ", everybody is busy working...no time...time constraints" (Trainer 3). Apprentices expressed frustration "when there's not much time to train" (Apprentice 3), or when work-based trainers "wouldn't slow down, or leaves me alone to do the job myself" (Apprentice 7). A Construction Manager described an effective work-based trainer as someone who "spends time with apprentices, going over issues" but acknowledges that "finding the time" is challenging when they are "juggling two to three different jobs" (Manager 3). In one workplace, however, a Construction Trainer said her employers recognise and praise her work as a work-based trainer, and she "doesn't get in trouble if she needs to spend an extra hour training someone. It's not just 'money in the bank' for the employer" (Trainer 1).

Some work-based trainers identified getting to know individual apprentices as a key area for their development, identifying the challenges around the 'how-to' of managing apprentices with different personalities, social skills, and backgrounds. These trainers reported the importance of managing people and personalities and that as a work-based trainer, you must "manage—know where the line is, for example (with) banter, know when it's time to knuckle down" (Trainer 2).

"To understand difference cultures, you have to understand their perspective. Try to understand what they're trying to understand." ... Evaluator

4.2. Interprets the Apprentice's Qualification Requirements

The Civil Workforce Report (2022) discussed the lack of access to training material for work-based trainers to support apprentices in achieving their qualifications. In this report, apprentices indicated that 'knowing about them' extended to knowing about their qualifications and the skills they needed to develop to achieve them. Work-based trainers who were 'invested' in the apprentice's training and were aware of the milestones and qualification expectations were rated highly by apprentices.

"[The work-based trainers] need a basic understanding of the apprentice role – that we're there to learn the trade and complete the qualification. It would be good for them to know the details about qualifications – the Unit Standards, the evidence required and what is entailed" (Apprentice 4).

As with technical knowledge, work-based trainers must understand the current qualifications. A construction apprentice highlighted the importance of relevant knowledge of the qualifications when he stated that work-based trainers "should know what's involved, what we need to do to become qualified. It's different from (when) they were an apprentice" (Apprentice 6). This sentiment was supported by another apprentice who indicated that work-based trainers should "know what you [apprentice] need to be taught, not talk about something five years ahead" (Apprentice 2). Recent knowledge of the qualifications often meant recently graduated tradespeople were seen as effective work-based trainers.

Those in provider roles discussed the importance of work-based trainers knowing the qualification milestones and seeking help if unsure. "The best ones are heavily involved with it all, knows what apprentices need to know. Puts (them) with a scope of work, and a work-based trainer that can help. There are milestones in the app" (Provider 1). Interestingly, the qualifications milestones were only mentioned by one work-based trainer who had recently graduated, explaining that as a work-based trainer, you should "know the Unit Standard criteria, or be willing to find stuff out" (Trainer 2).

4.3. Creates a Safe Learning Environment

Getting to know an individual apprentice helps work-based trainers decide how to engage with different personalities and cultural backgrounds and support their learning as team members. The literature identifies creating culturally safe, effective learning environments (Kerehoma et al., 2013) in which relationships are cultivated with and between workers (Harris et al., 2000) as key work-based trainer skills.

Although the construction and infrastructure industries are predominantly male-dominated, the modern

workplace values diversity, and apprentices from other diverse ethnic cultures, genders, neuro-diverse backgrounds, and previous work experience are becoming more common. Anderson (2024) describes the challenges for work-based trainers from older generations, recognising that the modern workplace is very different and diverse compared to when they were apprentices. For older generations, the goal of training was often to have a job for life; apprenticeships were time-bound, and there was an inherent respect for authority. Anderson (2024) recommends standing back and listening to the next generation coming through. Apprentices' lived experiences, skills, and knowledge are very different from those in work-based trainer and leadership roles currently, and their goals and ways of working may also be different. In saying that, she also believes that younger generations should try to empathise with those from older generations who are learning to train and lead in a very different, modern work-based context.

Cultivating a safe learning environment at work is important in work-based learning (Alkema et al., 2016; Harris et al., 2000; Kerehoma et al., 2013). Knowing the apprentice at an individual level allows the construction site to be seen as "a family environment" (Trainer 2). A construction trainer agreed when they stated, "You develop a safe workspace. You act like a mate...you care about these people" (Trainer 1). A safe workplace is also ensuring all members are supportive, with one work-based trainer indicating "a new apprentice starting who was worried about the banter" but was reassured that "if anyone goes over the line, they get their arse kicked" (Trainer 2).

Buchanan et al. (2016) introduce 'expansive workplaces' where workers share their skills with apprentices, have the time to allow apprentices to learn from their mistakes, and encourage experimentation. An example of an expansive workplace was provided by a work-based trainer who stated, "The big thing is that it's two-way. It's not just me barking. It's how (they) feel, and then what do they need" (Trainer 4).

Cultural awareness is important to understanding different cultural practices and establishing an inclusive learning environment. However, sometimes assumptions are made that apprentices from different cultural groups are homogeneous rather than individuals. Beliefs such as "Pākehā think individually, Māori, Pasifika are different" (Assessor 1) or "Island boys on a job (are) boisterous, but in a classroom, they clam up" (Assessor 2) risk the training to be less individual but based on the preserved needs of the cultural group the apprentice belongs to. Although some strategies discussed have been found effective for all learners, such as "apprentices from different backgrounds... it is best to demonstrate than discuss" (Manager 3), other strategies, such as "pairing Māori and Pasifika workers up with people from their own culture" (Provider 3) could limit the apprentices overall learning and development. Such beliefs about groups extended to neurodiverse learners, with a Provider explaining that "neurodiverse learners need one-to-one. (They) hate

knowing they're failing in comparison with others" (Provider 3). It was heartening to hear an Infrastructure Trainer believe you need to "have an awareness of those from other cultures" (Trainer 4). Knowing an individual's potential values, behaviours and needs from a certain cultural group is important. However, it is also important not to make assumptions about an individual.

5. Training Skills and Strategies

According to the Code of Good Practice for New Zealand Apprenticeships (TEC, 2023), employers should ensure that "the apprentice is actively and effectively taught while on the job so that the apprentice progressively builds up skills and knowledge and off-the-job training is reinforced". Good teaching and learning practices will support the apprentice's development as a tradesperson and a productive team member. Many of these training skills and strategies are often embedded in the practice of talanoa or conversation that reduces the power imbalance that could result from a work-based trainer/apprentice relationship.

5.1. Plans Relevant Hands-on Learning Opportunities

According to the Code of Good Practice for New Zealand Apprenticeships (TEC, 2023), employers are responsible for ensuring that "over time the apprentice's work covers the breadth and depth of skills and experience needed to complete the apprenticeship and become work competent". While the apprentice is an employee with tasks to complete, there should be opportunities to expose the apprentice to the full range of tasks required for the trade (Kerehoma et al., (2013). To support the apprentices learning, the work-based trainer may need to organise scopes of work to provide relevant learning experiences for the apprentice to learn and practice new skills, understanding that it may require a change in work practices to allow for the learning opportunity (Alkema et al., (2016); Harris et al., (2000).

Apprentices discussed the importance of doing useful, relevant work related to their qualifications and gathering the evidence they need to collect. An Infrastructure Apprentice explained the benefit "when you're put on tasks that are relevant to what you need to do" (Apprentice 4). However, it was recognised by the same apprentice that "you have no control over what you are doing", highlighting that the place of learning is a work site, and it is not always possible to be put on relevant tasks. However, not being provided with the relevant learning opportunities could impact an apprentice's confidence. A construction apprentice observed the impact on confidence on a block course where their peers were not provided with opportunities to learn in the workplace: "You see it on block courses when an apprentice...[they] may only do shelves... [they] don't know what putty is [and their] confidence is down" (Apprentice 2).

While there was a recognition that not all tasks in the workplace would be learning opportunities, apprentices identified that being provided with meaningful work relevant to their qualifications was

important to help them progress through their apprenticeship. One apprentice indicated, "Sometimes they [colleagues in the workplace] think you do all the shit jobs, e.g. carry their ladders, carry equipment inside. Part of the trade is this, but it must be accompanied by teaching us the trade" (Apprentice 3). However, many apprentices believed that some work-based trainers kept them doing menial tasks irrelevant to their qualifications or unit standards for too long, with one infrastructure apprentice saying it made them feel like "glorified labourers" (Apprentice 4). This imbalance was recognised by a construction trainer "you can't just have them doing the same job consistently, or you can't have them doing random jobs. You've got to get them...gradually working through a certain part of the trade at a time" (Trainer 3).

Who is responsible for ensuring the apprentice is provided with relevant practical experiences was discussed. There was an argument that the apprentice was responsible for ensuring they got the required exposure. One work-based trainer believes that "apprentices need to have a conversation with their supervisors to get opportunities for exposures" (Trainer 4). However, interpreting their apprentice's qualifications and knowing how to pre-plan appropriate learning experiences were highly rated by others interviewed in this study, particularly apprentices. A Construction Apprentice indicated that "(work-based) trainers need to be able to pre-plan the day/week earlier so they know what you'll be doing on the job" (Apprentice 5). A provider supported the importance of the work-based trainer taking some responsibility for providing learning opportunities, identifying "(the) best (employers) are heavily involved with it all, know what apprentices need to know, puts him with a scope of work, and a work-based trainer that can help" (Provider 1). A Construction Apprentice said of her work-based trainer, "[She] looks after me, asks me – what do you need now? What do you need exposure to?" (Apprentice 2). It appears that planning for exposure and learning opportunities should be a collaborative effort for the apprentice and the employer or work-based trainer.

Those in strategic roles discussed some of the challenges of providing relevant work. One challenge was the time constraints experienced on site. When there is a time-sensitive job, it can lead to the work-based trainer being unable to find opportunities. A Construction Manager stated that the challenge is "finding the time (when) juggling 2-3 jobs" (Manager 3). The same manager indicated that the planning for experiences "must be driven by regional managers – need them to look at the big picture". An Evaluator highlighted that some "managers (can be) focused on making money rather than training people" (Assessor 2), reducing the chances of an apprentice having relevant learning opportunities. However, the place of learning is a workplace that requires one to complete work to bring in income. There was an understanding that there was work to be done and that not all activities would be focused on learning and development. A Provider discussed a further challenge: "It's competitive. Hard to find a job that provides a scope of work to train the

apprentice." (Provider 4). Although "the employer can liaise with other employers and the tertiary education provider to achieve the breadth and depth of skills and experience needed to complete the apprenticeship and become work competent" (Tertiary Education Commission, 2023), managers interviewed in the study did not discuss this as an option.

"Sometimes they think you do all the shit jobs, e.g. carry their ladders, carry equipment inside. Part of the trade is this, but it must be accompanied by teaching us the trade."...Infrastructure Apprentice.

5.2. Communicates Effectively

A critical skill of effective work-based trainers when supporting apprentices on their learning journey is quality communication (Durkin et al., 2015; Kerehoma et al., 2013; Savage, 2016). Communication examples such as being explicit and honest, setting boundaries, providing clear explanations, and providing effective instructions were valued by work-based trainers and those in strategic roles. Interestingly, apprentices did not rate communication skills highly as a work-based trainer 'skill'. Perhaps it is more important for apprentices to talk and be heard.

There was a recognition that the instructions and information provided needed to be explicit and relevant to the apprentice they were working with. An Infrastructure Trainer provided an example of effective communication at their workplace:

"Sometimes they're standing around doing nothing...and there's a bit of rubbish to pick up. They don't know what to do. So, they need to be (explicitly) shown or told. But some don't have to be told. They just pick things up just like that because of where they've come from, their background" (Trainer 4).

Another Construction Trainer also stressed the importance of being explicit: "If there is a problem, be honest" (Trainer 2). An infrastructure manager referred to effective work-based trainers as "(they) communicating with the apprentice—when, why, etc." (Manager 2). This highlights the importance of knowing the

apprentice and providing specific instruction as required.

Face-to-face communication with work-based trainers was highly rated by apprentices and others. Even though a Construction Apprentice was in the final year of his apprenticeship and was often supervised remotely when he needed help, he said, "(I need him) to visually teach me. I can do it over the phone, but visual is best" (Apprentice 6). When asked to describe the best work-based trainers he has come across, an Assessor spoke about a Pasifika work-based trainer who was also a rugby league player. He described him as a "great motivator, understands the culture, firm", who spent time engaging with team members face-to-face, using eye contact to make a point" (Assessor 2).

Apprentices described ineffective work-based trainers as those who could not explain, would not talk them through the task, or talked too much. A Construction Apprentice described one work-based trainer who "Wouldn't slow down, (didn't) know how to talk you through it. (It was) pretty shit" (Apprentice 7). Another apprentice described her frustration when work-based trainers were having "an off-day – when they're grumpy – they don't talk to you, they shut up, and walk away...leave you to finish the job" (Apprentice 1). On the other hand, some apprentices experienced work-based trainers who explained too much when they only wanted a quick answer. A Construction Apprentice said, "Trainers that go from A-Z. You'll ask them a question, and instead of them telling you the answer, they give a half-hour story. I just need the answer!" (Apprentice 2).

5.3. Demonstrates Relevant Skills and Knowledge

Effective communication includes the work-based trainer's ability to demonstrate the relevant skills. Although work-based trainers said an effective trainer shows an apprentice what to do, it was surprising that many apprentices explicitly said they appreciated work-based trainers who would take the time to demonstrate and let them observe face-to-face. A Construction Apprentice described such an interaction with a work-based trainer; "something I learnt recently (was) GSI screw points. (He) did it in front of me, said it out loud (the numbers). Then I do it on my own, they checked and made sure it was all right" (Apprentice 5). Another apprentice said she rated one-to-one time with a work-based trainer so they could "show me how to take measurements and angles and how to do it myself" (Apprentice 7). Not being provided with the opportunity to have relevant skills modelled, such as "The (engineer) gives you the plan and tells you to go do it" (Apprentice 3), created frustration for the Infrastructure Apprentice as the level of challenge did not meet their skill level.

Many work-based trainers described their hands-on approach to training. A Construction Trainer explained a

direct supervision approach while the apprentice was learning something new, saying, "The best way to learn is to explain, show and do with, and they explain back. Three rules" (Trainer 5). Another work-based trainer in the construction industry explained that "(I'll) jump in the trench, set up instruments, show him one day, then he does it the next. (All kinds of things, like) how to drive an excavator, paperwork, technology" (Trainer 3). For these work-based trainers, there was a structure to their teaching that provided multiple opportunities for the apprentice to learn and ask questions. A slightly different example was provided by a Construction Trainer who explained, "(I) show them, leave them alone, go back and give feedback, explain, carry on with (my) bit...keep checking" (Trainer 6). The different approaches by work-based trainers to model skills and knowledge may depend on the level of supervision required for the task and the apprentice's skills, knowledge and experience.

5.4. Makes Learning Accessible

Making learning accessible begins with an understanding of what individual apprentices already know. Finding out what prior experience or learning apprentices may have that may be helpful for their apprenticeship is important to ensure the learning is accessible and relevant. An Infrastructure Apprentice who had had previous experience at another workplace stated, "It's important [the work-based trainer] understands your current level of knowledge and teaches you from that. Not too basic" (Apprentice 4). When a work-based trainer is unaware of an individual apprentice and their prior knowledge and experience, it creates a learning environment that does not provide the right level of challenge. The was experienced by an apprentice who described her frustration when she was told, "You should know this!" (Apprentice 7).

The apprentices believed part of making the learning accessible was work-based trainers who understand what works best for the way they learn and will help them learn differently. This could be drawing a diagram, taking the apprentice to the site or letting the apprentice have a go first before explaining a skill or idea. There were examples of how the learning was tailored to the individual, such as a Construction Trainer who "for one guy I did up his whole day list, it helped him and now he's great" (Trainer 3). Another example was "some people you can give instructions in one go and leave them to it, others need less instructions (one step at a time) and they can come back and ask you questions" (Trainer 2). A further example of matching the individual with the appropriate learning approach was given by a Construction Trainer who reported that with her first-year apprentice, she "talked about the theory, showed the notes, and it worked well". With her second-year apprentice, who "came from another trade", she used a more practical approach, as he "had lots of practical experience but didn't understand the theory" (Trainer 1).

Work-based trainers also need to be aware of the physical capabilities of the apprentice to make sure they can apply new skills in a way that works for them. A Construction Trainer would notice the physical differences between apprentices and explain how to complete the same task differently. The work-based trainer stated, "If you're a smaller guy, you won't be able to use brute force...so you have to show them how to use the levers. Some people can squat, (but) some people have to bend" (Trainer 7). A Construction Apprentice recognised, "When I'm tying steel, I had to change my technique because boys are stronger at tying and pulling, and I don't have the same strength in my arms" Apprentice 1).

Although not necessarily learning that happens in the workplace, there is a requirement to complete 'bookwork' and assessment tasks for the education provider. This work is often completed by the apprentices independently outside the working day; however, there were many discussions about the challenges faced by apprentices to complete the tasks set. Different approaches were described to support apprentices with their bookwork. One Construction Trainer said of his apprentice; "He knows how to do a job, but he can't get his head around the reading and writing. So, I talk to him, tell him not to look at the paper, and I demonstrate" (Trainer 3). A Construction Manager described the book work as "too academic, [does not contain] industry speak, apprentices can't translate what they mean". Such experiences with the learning requirements outside the workplace could impact the apprentice's commitment to completing their qualification.

6. Assessment and Feedback

Assessment and feedback are important skills for all involved in the teaching and learning process. While they are sometimes perceived as checking whether the apprentice is competent or has met the requirements of the Unit Standard, the work-based trainer needs to understand the apprentice's progress and assess their ability to complete tasks independently of supervision, thus becoming a more productive member of the team. Part of assessment and feedback is using meaningful questions that allow the apprentice to develop and provide an accurate reflection of their learning.

6.1. Asks Meaningful Questions

Apprentices value work-based trainers who actively ask meaningful questions (Durkin et al., (2015), Johnson, 2016). In the context of this study, meaningful questions were often described as open-ended questions. Open-ended questions supported apprentices in remembering, understanding, and applying new skills and knowledge. In an example provided by a Construction Apprentice, they stated, "At a job site, she (trainer) asks me, Why are we putting putty onto this glass this way? Why is the coding on the inside surface instead of the outside?" (Apprentice 2). A Construction Apprentice in his first year recognised that their work-based trainer "asks lots of questions like he doesn't know (the answer)" (Apprentice 5). The use of meaningful questions should occur across an apprentice learning journey, as highlighted by a second-year apprentice when discussing their work-based trainer:

"when I need to know the measurements of interior joinery off the top of my head. He does it more often with me, drills it in, asks before telling me e.g. 'what do you think ...how big is that...I need this door opening for this door, so...?' (Apprentice 6).

Apprentices believed these questions supported their learning and confidence in the task. Work-based trainers also benefit from using such questions to assess whether the apprentices are ready to carry out the task. (Durkin et al., 2015; Harris et al., 2000). A construction manager supported this thinking by encouraging work-based trainers to "ask questions to check readiness for the task" (Manager 4).

Some in this study sometimes viewed asking questions as the responsibility of the apprentice rather than the work-based trainer. Remembering how he was trained as an apprentice, an Assessor spoke about being "chucked in the deep end and told to ask questions" (Assessor 2). This approach was echoed by an Infrastructure Manager who said he "advises apprentices that it is their qualification - they must ask

questions – they need to understand what they need to do" (Manager 1). While it is important for apprentices to ask questions to advance their knowledge, having the confidence to ask questions may depend on the individual's personality or background. An Assessor explained that in his experience, "Māori and Pasifika peoples may not ask a question, so you have to ask them" (Assessor 2). The use of questions can be beneficial to both the work-based trainer and the apprentice; it should be a reciprocal arrangement. However, the ability to ask meaningful questions needs to be developed.

"To check my understanding he asks lots of questions, like he doesn't know (the answer)."... Construction apprentice

6.2. Verifies or Assesses Skills and Knowledge

As previously noted, some work-based trainers carry out the role of assessor or verifier, monitoring, tracking and recording that apprentices have the skills and knowledge required to carry out tasks. The task of the assessor or verifier may be specific to the workplace, as discussed by a construction manager who explained that their work-based trainers use "internal competencies benchmarked against best practices" (Manager 4). However, some work-based trainers are also required to validate their apprentices' skills and knowledge for the apprentice's work-based learning provider. Whether it was for the workplace, the work-based learning provider or both, there were a variety of methods work-based trainers used to verify task competence or to make sure relevant evidence was gathered.

Observations were regularly mentioned as the most effective way to check whether an apprentice performed a task correctly. Observing the apprentices completing different tasks allowed the work-based trainers to assess "if they can physically do the job" (Trainer 1). Focusing the observation on whether the apprentice is "doing (the task) themselves...correctly, following the right specs" (Trainer 3). One key attribute work-based trainers look for is apprentices having confidence in the task they are completing. An Infrastructure Trainer described this as keeping an eye on how apprentices handled equipment like a HIAB, and when verifying their skills, he advised, "don't freak them out ... watch their actions, ... make a decision" (Trainer 4). A construction trainer agreed, stating "if they're using lasers, I make sure they're flat", but also indicated that that checking the quality of their apprentice's work closely, e.g. "for machine marks, holes" (Trainer 6) was another way for the work-based trainer to verify skills and their apprentice's level of competency. He also said, "if you're

confident they can do it 90% of the time, you can leave them longer between checks" (Trainer 6). When work-based trainers display confidence in their apprentices, it supports the apprentices in developing their sense of vocational identity for their trade (Chan, 2019).

Alongside observation, listening to the apprentice talk about the tasks helped work-based trainers with the verification process. If apprentices "stop and ask a question" (Assessor 2), "reflect back on the job they've done" (Trainer 1), or display "confidence in the way they talk, how they explain, how they get it", (Provider 4) it helped work-based trainers make decisions about competency levels or whether apprentices had been picking up new skills and knowledge. It is worth noting that apprentices from some cultures may not ask questions or speak up, so work-based trainers may need to use different methods for verifying skills, or they may need to ask explicit questions.

Interestingly, work-based trainers often use feedback and compliments from others in the work environment to help them informally assess the apprentice's skill and knowledge acquisition. When a Construction Apprentice "get(s) a pat on the back from the boys" with comments such as "man you've done a mean as job today!" (Apprentice 1), it would let the Construction Apprentice know their skills are being recognised. A Construction Trainer said he can tell if his training has been effective when "the person you trained gets a compliment on how they are doing the task" (Trainer 8).

Some saw collecting evidence as part of the verification process as a useful part of the training process. However, others found it challenging. One Construction Trainer had his apprentices take "photos on (their) iPads, (so they could) look at photos in the group chat (on) WhatsApp" (Trainer 3) and use the photos as evidence of task completion. Another work-based trainer "videoed the apprentice explaining his work on the video, (giving) him prompts" (Provider 4), and an Infrastructure Trainer liked the fact that "some tasks have questions". While there was a belief that logbooks were effective as the apprentice "can log experiences ... on a daily basis, to gather evidence of competency" (Manager 2), this could present other challenges. The challenges such as "tak(ing) photos, video evidence on job, if its windy/rainy" (Manager 4) made it difficult to gather the evidence required. The ability to assess and verify whether an apprentice is gaining the skills and confidently using them to complete tasks is an important skill for work-based trainers. The work-based trainer needs to understand how the apprentice shows their learning.

6.3. Gives Encouragement and Feedback

"Without feedback, this generation will just leave the workplace."...Provider

Providing recognition and feedback are further skills required to develop apprentices' knowledge and skills. For one organisation, developing this skill was an integral part of their coaching programme for technical experts and managers with "giving and receiving feedback" (Manager 4). This training is important as apprentices believe regular personalised encouragement and praise boost their confidence as they know they are progressing (Durkin et al., 2015; Kerehoma et al., 2013). Encouragement could be seen as the work-based trainer saying, "Yes you can! 'Failure is not an option" (Apprentice 1) or "They tell me, they congratulate me, (they say) here's your next job. (The boss) compliments (me), we take pics and show him" (Apprentice 5) or the work-based trainers simply "tell us that we smashed it!" (Apprentice 6).

Regular feedback is important to encourage apprentices on their learning journey (Durkin et al., 2015). Apprentices valued feedback on work completed, with an Infrastructure Apprentice indicating that getting "advice on technique" (Apprentice 4) is an important training skill. A Construction Apprentice noted the challenge of not receiving quality feedback, "if I'm doing bookwork, there are no comments in the book about how I've gone wrong" (Apprentice 1). Not knowing where they have gone wrong does not support the apprentice to understand how they can improve and develop. A Provider also highlighted the importance of feedback to the retention of apprentices when they stated, "Without feedback, this generation will just leave the workplace" (Provider 3).

The quality of the feedback and encouragement is important. An Assessor remembered his experience as an apprentice, indicating, "The old style was to give someone a shovel and give them a kick. (Apprentices) were taught by hurting them" (Assessor 2). Alternatively, the apprentice was told, "It is a five-minute job" and then "shamed into doing it faster the next time." When reflecting on that period, he believes this was not the best approach and often thinks about how he could have helped apprentices progress. With some work-based trainers only having these experiences through their training, there is a call to ensure they have the tools to providing the quality feedback seen as so important by current apprentices.

7. Building Independence

As the apprentices move through their learning journey, they must begin to see themselves as tradespeople who can confidently complete the tasks required of their trade. Part of the development of vocational identity is beginning to apply the required skills and knowledge to a high level of quality (Chan, 2019). To build this independence, the work-based trainers must have confidence in their apprentices and provide opportunities for the apprentice to demonstrate their ability to complete tasks to a high standard.

7.1. Builds Responsibility and Confidence

Building confidence in their apprentices is important to enable the apprentices to ask any questions about their work (Buchanan et al., 2016). Confident and responsible employees contribute to operational efficiency and succession planning. Many work-based trainers have other business roles besides training (Harris et al., 2000). Developing confident apprentices allows employers to complete jobs independently, which is particularly important for small to medium-sized businesses. The importance of an apprentice completing work independently was highlighted when a provider indicated an employer "wants to build the apprentice up so they can run the business themselves – so (the work-based trainer) can get off the tools. (He) wants the apprentice to have experience in running big jobs" (Provider 4).

For the apprentices to become more productive team members, they require opportunities to learn the required tasks to develop confidence and responsibility. When discussing the possible opportunities, an Infrastructure Manager discussed the importance of "giving the apprentice supervised responsibility – stand back a bit – let them do stuff, achieve" (Manager 1). An Assessor best described the idea of supervised responsibility as the work-based trainer being "prepared to handle it if apprentices make a mistake, [which] helps apprentices become confident" (Assessor 1). The discussions highlighted that developing confidence among apprentices needed to be intentional.

Encouraging apprentices to share their expertise with others was described as a method for building responsibility and confidence (Harris et al., 2000). The team may do the sharing of expertise in a formal setting. A Construction Trainer remembered that when he was an apprentice, he was encouraged to do "presentation tasks where I had to stand up, look at everyone and speak, then I could talk to the team, and it made me more confident." (Trainer 3). A Provider said, "When an apprentice gives the Health and Safety Induction at a worksite" (Provider 1), it demonstrates that the apprentice has confidence, and the workplace

provides opportunities for the apprentice to develop responsibility.

For apprentices in the final years of their qualification, this may be the opportunity to train another on a task, which "helps solidify learning and helps the apprentice appreciate the bosses' needs to get someone productive" (Provider 3). For the apprentices in their final years, "teaching the apprentice below me, I realise when I see him doing things a bit wrong, I know I've learnt stuff" (Apprentice 2). For the work-based trainer to recognise the skills and knowledge their more experienced apprentices have and support them to begin their journey as a work-based trainer not only reduces the pressure on the work-based trainer but also begins to develop another person in the workplace who can support those learning.

Alongside the opportunity to train new apprentices, work-based trainers can provide opportunities to complete a series of tasks independently. This opportunity may be to work with customers, as described by a Construction Apprentice who gained confidence by "dealing with other people. Some people can be very difficult. Getting along with people you wouldn't really deal with e.g. subcontractors. (You) need to keep your cool, don't be a dick, ask questions" (Apprentice 6).

For more experienced apprentices, this may be the opportunity to run a job from start to finish. One work-based trainer had their apprentices "leading a project; it's his final to show he can do everything on the job before he is signed off" (Trainer 5). While the apprentice was leading the project, the employer quickly noted that they were always there to provide guidance and support. A similar situation was described by a provider who discussed an employer who "gives apprentices a job from start to finish – gets them to do the pricing, do the work, (gives) ownership but checks in regularly and gives feedback and feed-forward based on their own notes" (Provider 4). The provider also noted that this opportunity was repeated regularly to support the growth of confidence in the apprentice to accept responsibility for jobs.

"(He) gives apprentices a job from start to finish – gets them to do the pricing, do the work, (gives) ownership but checks in regularly and gives feedback and feed forward based on their own notes. Then they'll get the apprentice to repeat it again after a week or so."... Provider

7.2. Encourages Critical Thinking and Problem Solving

A key element of apprentices having the confidence to take responsibility for projects is the ability to think critically and solve the problems that occur while completing a task or project. One construction trainer believed "if [the apprentices] have the right tools, they can think outside the square" (Trainer 2). Supporting apprentices to 'think outside the square' requires developing critical thinking skills.

Critical thinking and problem-solving are higher-order thinking skills, critical in the latter part of an apprenticeship (Durkin et al., 2015; Johnson, 2016; Kerehoma et al., 2013). Apprentices in the final years of their apprenticeship spoke about how their work-based trainers prepared them for their future by encouraging them to think critically, solve problems, and talk to customers. A Construction Apprentice said her work-based trainer emphasised that "this topic (solar radiation control) is a big part of the apprenticeship – (and) it's important because clients ask you about it. It's the 'why' – and (we need to) be confident." (Apprentice 2). Linking what apprentices were learning to the 'why' was seen as a future-focused training skill, particularly by Providers and others in strategic roles, who regularly spoke about the importance of "link(ing) stuff to the 'why'" (Provider 1, 3) and "making them understand why they are doing it." (Assessor 1). Apprentices also talked about their work-based trainers, encouraging them to link their learning to the 'why'.

The methods for encouraging critical thinking were varied. These methods included challenging apprentices to find answers for themselves or new and different ways of working or addressing problems (Harris et al., 2000), discussing tasks and asking apprentices to evaluate their work (Harris et al., 2000), encouraging the apprentice to think realistically, or challenging the apprentice's ideas (Harris et al., 2000). To develop these critical thinking skills requires the asking of meaningful questions. However, the importance of linking what they are learning to the 'why" through meaningful questions was important to develop confidence and problem-solving abilities. For this, those in strategic roles and work-based trainers wanted to see tradespeople who could articulate the set task in a manner that went beyond the requirements of the particular Unit Standard they were completing.

When apprentices are provided with opportunities to take more responsibility, work-based trainers regularly use debriefs. These debriefs allowed the apprentice to review their work and consider the next steps. A key part of these debriefs is the use of meaningful questions. When describing another work-based trainer asking meaningful questions, a construction trainer stated, "he tries not to give [the apprentices] the answer, mostly gives them questions so they can work it out then confirm with them...makes his job easier if they can solve

their own problems". In the previous section, an apprentice indicated that failure was not an option; using meaningful questions supports the apprentice in learning from mistakes rather than feeling disheartened. An Infrastructure Trainer would ask the apprentices "questions about what they think went wrong" to encourage learning from mistakes.

8. Conclusion and Recommendations

There is no denying the importance of quality work-based training in supporting apprentices' staying in the industry, gaining their qualifications, and becoming productive members of the team and broader workforce. Despite being important, current access to quality training and support for work-based training is inconsistent. Many skills associated with effective work-based training, such as knowing the apprentice or managing workflow to provide relevant tasks to support learning, are also associated with leadership and supervision. The goal of both leadership and quality training is to recognise the unlimited potential of those in the workplace and provide opportunities for all to bring their whole self to work.

Quality work-based training supports apprentices in becoming qualified, productive team members. However, consensus around quality work-based training has been an ongoing challenge for many employers and education providers. Based on insights from those with experience in work-based training contexts, the framework presented in this research forms a basis for discussions around effective work-based training relevant to those working in the construction and infrastructure industries. The framework allows employers to work alongside education providers to assess the current quality of their work-based training and commit to targeted training and development solutions. It could also be used as a tool to investigate potential productivity, qualification completion and retention issues.

A concerning discovery in this research was that most technical experts lacked the skills to train apprentices effectively, and some were even unaware they were required to train. There is a need for improved learning and development opportunities that specifically address the unique duties of work-based trainers. Education providers and employers must collaborate with technical experts to find solutions to support them to develop their skills as work-based trainers. Site supervision and leadership training often concentrate on managing people, tasks, and ensuring health and safety, but they tend to neglect the skills required to be an effective work-based trainer. Additionally, many "Train the Trainer" programmes are designed for classroom-based trainers or emphasise verification and assessment, rather than on-job training and learning. Employers can create a workplace environment that values training and ensures everyone understands their ability to contribute. Ensuring the development of work-based trainers is prioritised, and normalised will benefit the development of apprentices and other team members.

The skills required to be an effective work-based trainer are also required to be an effective supervisor or leader. Many capabilities and good practices associated with effective work-based training—such as getting

to know apprentices as individuals, communication skills, emotional competence, and managing workflows—are also essential for supervision and leadership. Employers who invest in developing these skills among their team members are more likely to attract, train, and retain talented individuals, providing succession planning and innovation opportunities. Providing pathways for talented team members to advance within the organisation is a win-win for employers and technical experts. The goal of both leadership and quality training is to recognise the unlimited potential within the workplace and provide opportunities for all to aspire, succeed, and contribute to their personal growth and the sector's success.

In conclusion, quality work-based training is essential for developing apprentices into skilled, productive workforce members, yet achieving consistent standards remains challenging. The framework outlined in this research offers a foundation for improving work-based training, particularly in the construction and infrastructure sectors, by facilitating collaboration between employers and education providers. It is critical to address the skills gap among technical experts who are often unprepared for their roles as trainers. By investing in the development of work-based trainers, employers enhance the training experience and cultivate leadership and supervision skills within their teams. This investment leads to a more engaged, competent workforce and supports long-term success for individuals and the broader industry. Prioritising the growth of these skills will create a culture of continuous improvement, benefiting apprentices, trainers, and the sector as a whole.

8.1. Recommendations

Implementation of the Framework to overcome barriers and promote enablers can be achieved through the following recommendations .

Qualification developer	 Use relevant findings from this research to inform graduate profile outcomes, learning outcomes, and performance criteria for revised or new work-based trainer qualifications, skills standards, or micro-credentials. Use relevant findings to inform pathway opportunities for work-based trainers to move into training roles at tertiary
Industry bodies	 Recognise and support effective training through learning opportunities for work-based trainers, certifications -or other methods (e.g., NZCB's 'Coach the Crew' programme and CCNZ's Civil Trade Certification).

Education providers

- Help employers make an informed decision about their existing capacity and capability to support apprentices by using the framework for training needs analysis discussions.
- Use the research findings to inform program, assessment, and resource design and delivery, particularly regarding supervision, leadership, mentoring, and communication skills.
- Recognise and support the development of work-based trainers by providing resources and learning opportunities based on these research findings.

Employers/work-based trainers

- Prioritise the development of trainers to address skills gaps and compliance, support leadership development, create an excellent place to work, and provide pathways for employees.
- Provide time, space, training, and development opportunities for all tradespeople to become work-based trainers.
- Use the five focus areas and subsequent capabilities in the framework for recognising and raising the capability of trainers at work as a continuous improvement initiative.
- Partner with relevant business people or teams to develop organisational support structures for work-based trainers and capability initiatives/projects.
- Strengthen external partnerships with education providers, industry bodies, and other employers to enable best workbased training practices.
- Embed relevant capabilities into compliance or refresher training so team members can practice them

Procurement decisionmakers

- Make decisions around the training capability of individual businesses
- Understand the enablers and constraints of providing effective work-based training

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