Funding of workplace training and work-integrated learning for the construction and infrastructure industries

Background

The construction and infrastructure industry is a critical part of the New Zealand economy accounting for 15 per cent of the total workforce and generating $52.7b in GDP. The industry employed around 373,907 people in 2023[i]. That workforce includes18 per cent women, 17 per cent who whakapapa Māori and six per cent who identify with one or more Pacific ethnicity[ii].

The tertiary education and training system produces around 9,800 graduates with construction and infrastructure related qualifications[iii] each year at all levels. Many other learners obtain skills and competencies either as part of tertiary education that they do not complete, qualifications in other fields, or through training organised by employers.

Yet the industry has a long-standing shortage of skilled workers (some estimates put the undersupply of skilled construction workers at up to 375,000 people[iv]), the industry experiences high levels of staff turnover and has a long-standing issue with relatively slow productivity growth[v] due to skills shortages, training mismatches and regulatory barriers[vi], [vii].

Many employers point to a mismatch between the skills that tertiary education provides and those they require.

Just fourteen per cent of construction and infrastructure employers are actively engaged in tertiary education and training[viii] and achievement rates in tertiary education vary considerably.

Who is involved in this project

The Construction and Infrastructure Centre of Vocational Excellence (ConCOVE Tūhura) is funding this project to understand how the funding and incentive structures for vocational education and workforce development in the Construction and Infrastructure sector can be optimised and best aligned with the government's broader objectives for vocational education and training.

Brenden Mischewski and Roger Smyth are undertaking this project for ConCOVE. They are consultants with extensive experience in tertiary education policy and funding. You can find out more about what they do at www.rogersmyth.com and www.mischewski.co.nz.

Investing in the workforce

Employers, government and learners invest heavily in tertiary education and training and workforce development (see *Resourcing Flows – Construction and Infrastructure Tertiary Education and Training*).

Direct government subsidies for tertiary teaching and learning in the construction and infrastructure industries total around $352m per annum[ix] supporting around 80,000 learners, with around seventy per cent of these learners undertaking apprenticeship programmes[x]. The government also provides support through student loans and allowances for eligible learners, and targeted support such as the Apprenticeship Boost scheme and Skills for Industry programmes

Employers support workforce development through their own investment in staff training including developing new staff and supporting government-funded teaching and learning by paying tuition fees for learners, making workplaces available for work-based training and releasing staff for on-job and off-job training.

Learners make direct contributions like the tuition fees and course costs they pay or student loan repayments and indirect contributions, such as the time they spend on their studies.

Each of these groups also received benefits from education and training. An initial summary of these benefits and costs is included in the table overleaf.

What we want to know

The main questions we want to answer are how the funding and incentive structures for vocational education and workforce development in the Construction and Infrastructure sector can be optimised to:

- Create a more responsive system that promotes and maintains alignment between education outcomes and workforce needs
- Strengthen industry-education-government partnerships and co-investment in skills development
- Promote equitable access and outcomes from vocational education.

For the system to work effectively, we need a funding model that incentivises better performance and maximises benefits for individuals, employers, and the wider community.

This project will produce a discussion paper that presents options for an improved funding model. The researchers' final recommendations will be informed by stakeholder feedback received during the consultation period on the discussion paper.

Table A: Attribution of the benefits and costs of VET

	Market Benefit	Non-market Benefit	Costs
Trainee	• Training wages • Enhanced future earnings potential • Enhanced employability prospects	• Greater job satisfaction • Other possible[xi] benefits in social, cultural and identity capital – health, self-esteem, civic engagement	• Wage discount – training wage is lower than minimum wage • Cost of buying tools • Fees and costs for off-job courses
Employer	• Increased firm productivity over time as trainees get more skills • Recruitment advantage – trainees are likely to stay with the training firm after completion • Training wage is lower than minimum wage	• More satisfied workforce • Picking up on trends in the industry through engagement with off-job provider and training advisors	• Loss of productivity as trainees learn and as experienced staff mentor trainees • Transaction costs of training/mentoring, dealing with off-job providers and training advisors • Depreciation on use of capital for training • Subsidising off-job courses for trainees
Off-job provider	• Revenue from fees/funding • Greater use of equipment – return on capital investment	• Improved links to industry • information on industry trends	• Tutor time • Depreciation on equipment • Transaction costs – dealing with employers/training advisors
Public/society - by proxy, the government	• Availability of skills in labour market – increased aggregate productivity • Containment of price/costs of advanced skills • Increased economic innovation	• Possible social inclusion benefits (but note caveat above) • Public confidence in the quality, safety etc of providers technical services (such as electricians, motor mechanics, builders etc)	• Funding for the VET system and for trainees • System costs – regulation, monitoring, funding, policy
Firms in the industry that don't train	• Containment of price/costs of advanced skills		

Why are we asking these questions?

We think there is a case that the current tertiary education funding model, especially for the construction and infrastructure industry:

- Undervalues the returns for society and industry arising from investment in vocational education – by the government, by employers and by individual learners; education and training in areas such as the construction and infrastructure industries leads to a skilled workforce that pays a large economic and social dividend[xii]
- Treats work-integrated learning as an add-on rather than an integral aspect of vocational education[xiii]
- Treats training that occurs on the job following completion of a vocational qualification as separate from formal education – essentially, the government sees the training system through a funder's eyes and hence, it is blind to the on-job post-qualification training and mentoring that is an essential part of the "finishing" training of new employees[xiv]
- Sustains and reinforces hierarchies of esteem in post-secondary education[xv].
- Uses different models to fund vocational education and degree-level education even though vocational skills are acquired during degree education[xvi].
- Places barriers to innovative solutions[xvii] including those designed to address inequities in the system enabling thereby enabling the systemic racism, sexism, ablism, etc to continue[xviii], [xix], [xx].

What are some of the issues?

1. Funding Model Alignment

The primary sources of funding are government subsidies, student loans and allowances, wage subsidies, and student fees, with direct government subsidies amounting to approximately $352 million annually. This funding supports around 80,000 learners, 70% of whom are in apprenticeship programmes.

The ideal state could be a funding model that reflects the public and private benefits to individuals, industries, companies, and communities by integrating training levies, targeted taxes, and tax incentives. This might lead to better alignment between funding and industry needs, supported by enhanced sectoral training funds and levy-grant schemes.

The key things we want to discuss are the effectiveness of the current subsidy model compared to alternative approaches and the potential for industry-specific funding mechanisms. We also aim to explore the balance between public and private investment and examine international practices, such as training levies, targeted taxes, tax incentives, grants to individual learners, direct employer subsidies, sectoral training funds, national training funds, and various levy-based schemes.

2. Employer Contribution and Incentives

The current state is characterised by only 14 per cent of employers actively engaging in tertiary education or training[xxi], limited employer participation in work-integrated learning, no formal requirement for employer contributions, and a potential “free-loader” problem.

The ideal state could be a model with higher employer engagement, a structured contribution system, and apprenticeship training recognised as integral to business. Employer contributions could reflect the benefits they receive, reducing "free-loader" issues by ensuring all employers either train apprentices or contribute financially, such as through a levy.

The key things we want to discuss are the barriers to employer participation, necessary incentive structures, effective cost-sharing models, and successful practices from other countries.

3. Equitable Access

The current state is characterised by systemic barriers for Māori, Pasifika, disabled people, and women, with inconsistent support across regions, underfunded support initiatives, and a failure to address the root causes of disparities.

The ideal state could be a system where barriers to entry and completion are removed, with consistent, well-funded support systems and better recognition of the additional pressures faced by disadvantaged groups. This model would include targeted interventions to address systemic issues and ensure equitable access and success.

The key things we want to discuss are the specific barriers faced by different groups, the intersectional nature of some of these barriers, the effectiveness of resource allocation, regional variations in support, cultural competency in training delivery, the merits of targeted equity funding versus integrating it as part of core funding, and measures of success.

4. Workplace Training Integration

The current state is characterised by work-integrated learning being treated as an add-on, with a clear separation between formal education and on-job training, limited credit recognition for workplace learning, and rigid course structures.

The ideal state could be a system where work and academic learning are deeply integrated, supported by well-designed degree-level apprenticeships where appropriate. This model would achieve a better balance between broad education and specific skills, include flexible, workplace-responsive learning structures, and provide funding that reflects the resource-intensive nature of workplace-based learning and teaching.

The key things we want to discuss are whether there are barriers to integration, the cost implications, success factors for work-integrated learning, and industry perspectives on the need for such integration.

5. Innovation and Flexibility

The current state is characterised by reasonable flexibility in apprenticeships and traineeships, but a rigid semester-based structure for on-campus learning, with funding rules that may discourage industry involvement and limited innovation in delivery methods.

The ideal state could be one with more flexible delivery models, better integration of industry professionals, innovative assessment approaches, and greater responsiveness to changing industry needs.

The key things we want to discuss are whether there are regulatory barriers to innovation, constraints in the funding model and opportunities for technology integration.

6. Industry-Government-Education Partnerships

The current state is characterised by a system mediated by Workforce Development Councils or proposed Industry Training Boards, with limited structured partnerships, variable effectiveness, and a competitive model that can hinder collaboration.

The ideal state could be one with comprehensive structured partnerships, clearly defined roles and responsibilities, enhanced alignment with labour market needs, clear pathways from the compulsory education sector, improved stakeholder cooperation, and rewards for collaboration.

We want to discuss the effectiveness of the current and different partnership models, governance structures, decision-making processes, and stakeholder engagement mechanisms.

7. Long-term Sustainability

The current state is characterised by challenges in sustaining campus-based delivery, impacts from cyclical industry changes, high facility costs, and disparities in funding across different modes and types of education (e.g., on-campus vs off-campus, construction vs infrastructure, degree vs non-degree).

The ideal state could be a sustainable funding model that reflects the true costs of delivery, is resilient to industry cycles, supports cost-effective delivery methods, and is guided by a clear long-term investment framework.

The key things we want to discuss are the current barriers to financial sustainability, infrastructure costs, the impacts of the current industry cycles, and alternative delivery models.

8. Impact on Productivity and Workforce Development

The current state is characterised by persistent skills shortages, a gendered and aging workforce, challenges with graduate work-readiness, and a high reliance on migrant labour.

The ideal state could be one where workforce needs are better met, productivity outcomes are improved, skills shortages are minimised, graduate capabilities are enhanced, and the industry is viewed as an attractive career choice.

The key things we want to discuss are whether there is value in the funding system supporting skills gap analysis, whether productivity improvement should be an explicit goal, how the funding system works for or against graduate readiness, and what role the industry's dependency on migration plays.

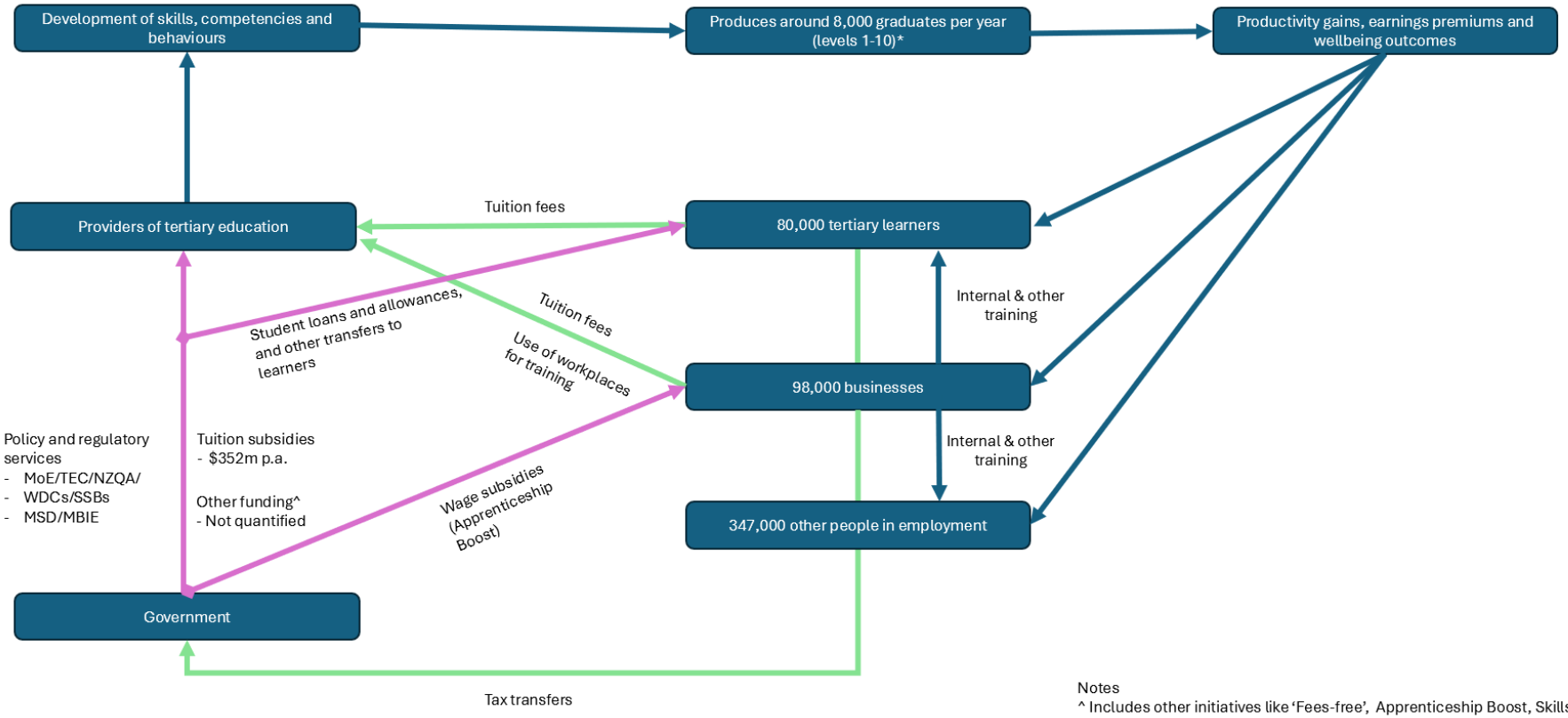
9. Outcomes Measurement

The current state is characterised by a focus on educational outcomes (or government transfer outcomes when funded by MSD), limited measures of employment outcomes, especially long-term employment, basic completion metrics, and a lack of comprehensive value-add assessment.

The ideal state could be a comprehensive measurement framework that includes metrics for employer participation, cost-effectiveness, and a more sophisticated approach to value-add assessment.

The key things we want to discuss are what would be the appropriate success metrics for any funding system, challenges in measurement, data collection methods, and indicators specific to the industry.

Resourcing flows – construction and infrastructure tertiary education and training



Notes
^ Includes other initiatives like 'Fees-free', Apprenticeship Boost, Skills for Industry and Mana in Mahi
* Post-study outcomes data for Architecture and Building and Civil and Geomatic engineering, average of graduate cohort for 2018-2021

END NOTES

[i] Waihanga Ara Rau WDC. 2024. Submission by Submission by Waihanga Ara Rau, Workforce Development Council for construction and infrastructure Redesign of the vocational education and training system September 2024. Waihanga Ara Rau Workforce Development Council. URL: https://www.waihangaararau.nz/publications/

[ii] Waihanga Ara Rau WDC. 2024. Briefing to the Incoming Minister December 2023. Waihanga Ara Rau Workforce Development Council. URL: https://www.waihangaararau.nz/publications/

[iii] TEC. 2024. Data on post-study outcomes for tertiary education graduates – Post-study outcomes national data. New Zealand Government. Count based on the annual average of the graduate cohort for 2018-2021 for architecture and building and engineering and related technologies (civil and electrical/electronic engineering and technology only). URL: https://www.tec.govt.nz/funding/funding-and-performance/performance/data-on-post-study-outcomes-for-tertiary-education-graduates

[iv] Waihanga Ara Rau Workforce Development Council. 2024. Call for Māori workforce to get upskilled to address the construction and building skills crisis. URL: https://www.waihangaararau.nz/call-for-maori-workforce-to-get-upskilled-to-address-the-construction-and-building-skills-crisis/

[v] New Zealand Infrastructure Commission Te Waihanga. Rautaki Hangahanga o Aotearoa New Zealand Infrastructure Strategy 2022-2052. New Zealand Government. URL: https://tewaihanga.govt.nz/the-strategy/7-a-world-class-infrastructure-system-how-we-get-there/7-5-building-workforce-capacity-and-capabilities

[vi] MBIE. 2023. Building and Construction Sector Trends – Annual Report 2023. New Zealand Government: URL: https://www.mbie.govt.nz/building-and-energy/building/building-system-insights-programme/sector-trends-reporting/building-and-construction-sector-trends-annual-report/2023

[vii] New Zealand Institute of Building. (2021, November). Improving New Zealand Construction Industry Productivity: An Overview. Retrieved from https://nziob.org.nz/assets/CPG-Abridged-version-Final-30-Nov.pdf

[viii] Data for the 2022 year provided by Waihanga Ara Rau Workforce Development Council.

[ix] TEC. 2024. Nga Kete. Tertiary Provision App. New Zealand Government. Tertiary education funding for architecture and building and engineering and related technologies (civil and electrical/electronic engineering and technology only) in the 2023 calendar year. All levels. All tertiary education organisations.

[x] MoE. 2024. Apprenticeship boost initiative: Monthly demographic statistics. New Zealand Government. URL: https://www.educationcounts.govt.nz/statistics/apprenticeship-boost-initiative-monthly-demographic-statistics

[xi] Note that the causality of these benefits is unclear – they may be incidental to the training, or it may be that those who have these endowments are more likely to take up training.

[xii] Research suggests that the financial returns to learners and presumably the broader economy may be comparable. See Cox, M. 2021. Does New Zealand need so many young people studying for a degree? And would young people be better off doing something else?. BERL. Finnie R and Miyairi M 2017 *The earnings outcomes of post-secondary co-op graduates: Evidence from tax-linked administrative data* Education Policy Research Initiative, University of Ottawa traces the longer term impacts of participation in work-integrated learning, finding that those who complete a degree with a work-integrated learning component fare better in the labour market.

[xiii] For example, universities in New Zealand have made some progress in offering a wider range of work-integrated or work-based learning opportunities. However, these options are often not credit bearing or are poorly integrated into the workplace with limited scope to make use of naturally occurring evidence. See UNZ. 2015. Producing employable graduates – initiatives by New Zealand's universities. Te Pokai Tara Universities New Zealand. See also Holland et al, 2024, *Work-integrated courses as an alternative tertiary education: lessons from UK, New Zealand and Canada,* WIL NZ 2024 Refereed Conference

Proceedings for a discussion of the challenges of developing a qualification in New Zealand with work-integrated learning embedded.

[xiv] Universities tend to focus on developing individual skills and attributes considered desirable by employers, in order to find and acquire suitable work, perform well in that work, and build a career. See: Rowe, A. D., & Zegwaard, K. E. (2017). Developing graduate employability skills and attributes: Curriculum enhancement through work-integrated learning. Asia-Pacific Journal of Cooperative Education, 18(2), 87–99.

[xv] Which some commentators argue may be unachievable. See Relly, S. J. (2022). Understanding the purpose and standing of technical and vocational education and training. In The standing of vocational education and the occupations it serves: Current concerns and strategies for enhancing that standing (pp. 49-62). Cham: Springer International Publishing. See also Murray N 2004 Who gets their hands 'dirty' in the Knowledge Society? Training for the skilled trades in New Zealand, PhD thesis, Lincoln University, which explores the disparity of esteem between industry training and academically focused education.

[xvi] For example, the government subsidy for work-based engineering training below degree-level including for diplomas at level 5 and 6 on the NZQCF is set at $8,543 (GST exclusive) for 2025 while the rate for degree-level study (which may comprise learning at levels 5 and 6) is set at $13,911. The funding differential is partly based on the difference in the estimated costs of delivering work-based and on-campus training.

[xvii] Jones, J. 2023. Civil Construction: a requirement for a robust and reliable training pipeline. ConCOVE Tūhura. URL: https://concove.ac.nz/discovery-hub/civil-construction-full-report/

[xviii] New Zealand Productivity Commission. (2017). *New models of tertiary education: Final Report*. Available from www.productivity.govt.nz/inquiry-content/tertiary-education.

[xix]. Hurd. F & Dyer, S. 2024. On-site Upstanders: Building a Bystander Culture - A Framework to Eliminate Sexual Harassment & Hostile Work. ConCOVE Tūhura. URL: https://concove.ac.nz/discovery-hub/on-site-upstanders-building-a-bystander-culture/

[xx] Angeli-Gordon, J. et al. 2024. Te Maru o Hine: A kaupapa māori theory of change for addressing sexual harrassment against wāhine through tāne allyship. ConCOVE Tūhura. URL: https://concove.ac.nz/discovery-hub/te-maru-o-hine-kaupapa-maori-theory-of-change-full-report/

[xxi] Although this is a contestable point with higher rates reported when sole traders are excluded from the denominator.