Submission on:

Technological Change and the Future of Work Draft Reports

February 2020

Introduction

1. Thank you for the opportunity to submit on the draft reports prepared for the Productivity Commission's (NZPC; the Commission) *Technological Change and the Future of Work* inquiry.

2. The Building and Construction Industry Training Organisation (BCITO) is recognised under the Industry Training and Apprenticeships Act 1992 as the ITO with responsibility for almost all sectors in the building and construction industry.[1] We work for and on behalf of our 15 trade sectors to establish standards, develop qualifications and associated resources, organise training and assessment, and mentor and support trainees, apprentices and their employers. We also provide strategic leadership to our industry on skills-related issues through workforce development plans and similar tools.

3. In its 2019 Reform of Vocational Education (RoVE) decisions and consequent legislation, the Government confirmed that ITOs are to be disestablished. Our current 'strategic' functions (including qualification development) will be transferred to new workforce development councils (WDCs), while responsibility for workplace learning will shift to providers. In the interim, however, we remain the standards-setting body for our industries, continue to arrange training, and retain our role as the key strategic leader for skills issues in building and construction.

4. As noted in our submission to the Commission's Issues Paper (BCITO, 2019c), while we appreciate that this inquiry is focused on national patterns our views are largely grounded in the experience of the building and construction industry. They are also primarily based on the perspectives and contexts of those parts of the industry for which we have direct responsibility; the 'craft' or 'trade' side rather than the professional sector (e.g. architecture, building science, or graduate-level quantity surveying).

5. This submission covers issues raised through all five interim reports. Our interest lies primarily in the nexus between skills, training, and productivity, and we generally refrain from commenting on broader industry issues of firm behaviour or labour market operation (such as the 'flexicurity' proposals in Report Two). Our submission therefore concentrates on draft reports Three (*Training New Zealand's Workforce*) and Four (*Educating New Zealand's Future Workforce*). However, we have also commented on some relevant points from other reports.

[1] The main occupations and sectors outside our remit are scaffolding, electricians, plumbing, gasfitting & drainlaying, and roofing.

General Comments

6. We support the Commission's decision to prepare a series of separate draft reports for this inquiry. We noted in our submission to the inquiry issues paper that this topic is very broad, and that in our view focusing on a set of sub-topics would be more useful than attempting to address every dimension at once. We believe it is sensible of the Commission to have focused on exploring specific aspects of technological change and work futures rather than attempt to develop a single all-encompassing draft report. We also support the Commission's recognition that predictive models in this area have severe limitations and flaws – not least because technological change and impact can be highly variable across industries – and should be treated with caution (NZPC, 2019a).

7. As noted in BCITO (2019c), feedback from our industry has been that technological change is a significant issue for building and construction firms. Importantly, however, the dominant type of change is new techniques and materials, rather than changes to the way building and construction work is actually structured or undertaken. In terms of the 'six effects' identified by the Commission (2019a), our industry sees direct technology impact as primarily involving *labour-augmenting* and *more effective monitoring* effects (and possibly some *cost reducing*, mainly through improved logistics). Essentially, our industry sees technology as likely to change the *how* of construction work, but not the *who*, *where*, or *what*. While business models and work patterns in the industry are changing, these are generally driven by non-technological factors. For example, increased project segmentation and job specialisation mainly reflects firms' desire to minimise cost and risk.

8. We also note that there is a tendency on the part of many to assume that introducing new technology will be inherently and inevitably beneficial. However, it is critical to recognise that technologies – including new methods of organising work – can have negative effects if they are introduced poorly or without a clear idea as to why they are being adopted (particularly given that introducing technology often involves significant costs).[2] For example, hot-desking remains popular amongst firms as a way to reduce the costs of office space. However, there is a significant body of evidence pointing to it having a negative effect on staff productivity and performance unless it reflects the specific culture of a given workplace.[3]

9. Effectively adopting a new technology involves not simply deciding to use it, but ensuring that the rationale for doing so is clear, that the technology is genuinely fit-for-purpose in the specific context of the firm's goals and operations, and paying attention to how it is introduced. For example, Marshall's (2006) e-Learning Maturity Model presents an approach to introducing ICT-enabled education that emphasises assessing and supporting the overall capability of an organisation to implement e-learning methodologies. Part of the message of this work is that putting new technologies in place when an organisation is not ready to do so or without sufficient preparation is likely to disrupt existing effective systems while being

[2] The Hype Cycle concept described in the Commission's FutureofworkNZ blog (Heatley, 2019) usefully illustrates one reason why organisations of all kinds might adopt unsuitable technologies.
[3] See for example Morrison & Macky, 2017; Hirst 2011; Pitt & Bennett, 2008; Savills, 2019.

unlikely to result in predicted gains. This holds whether the 'technology' concerned is physical, electronic, or a new approach to working.

10. We see this as an aspect of technological change that the Commission could explore in more depth. Although Report Five addresses firm-level adoption of technology, it mainly does so simply in terms of whether or not technology is adopted rather than how it is effectively used, and focuses on system-level drivers for innovation (e.g. competition) rather than in-firm factors such as the adoption of High Performance Work Practices (Combs et al., 2006; Schmelter et al., 2010; Tamkin, 2004).[4] While we are pleased to see the report acknowledge that "Management capability matters" (NZPC, 2020b, pp. 11-12 and F2.1) – a statement with which we agree strongly – this point has received little substantive attention from the Commission. The inquiry generally appears to assume that *deciding to adopt* technology is the same as *successfully implementing* that technology. It would have been useful for the Commission to explore the enabling and success factors involved in actually using technology to improve firm productivity.

11. We note that the Commission's only substantive discussion of the impact of changing technology and work on Māori and Pacific communities is in Report Four's discussion of education disparities (including its formal Finding 2.1).[5] Although this is extensive, issues for Māori and Pacific peoples – and firms – are only lightly covered in other reports. We were particularly surprised that this was not addressed in Report Two's discussion of labour market issues, given that people from these groups are over-represented in the types of jobs that are more susceptible to automation, while their marginalisation in the labour market means they are more likely to be subjects of Active Labour Market Policies and would be affected more strongly by shifting to an income-focused flexicurity model (see for example Kiernan, 2018). In our view the Commission's final report should engage more explicitly with the position of and impacts on Māori and Pacific people in regard to technology and work futures.

Skills, Education, and Training Issues

12. We support the Commission's findings and recommendations regarding education and training, as laid out in its third and fourth reports.[6] We agree with the opportunities for reform outlined in Chapter 3 of Report Four, and most of the options for improving New Zealand's skill development framework in Chapter 3 of Report Three. Our comments below largely represent extensions of the Commission's discussion, including areas where we see room for further commentary or believe that there are associated issues worth highlighting

13. We would particularly like to highlight the value of the Commission's two research reports on student subject choice (Hipkins & Vaughan (2019) and Eyre & Hipkins (2019)). These reports

[4] Note that High Performance Work Practices are themselves an example of innovation designed to boost productivity and performance.

[5] On this issue we would point the Commission toward work on ethnic disparities in outcomes from qualifications, and suggest that the final report discuss this in more depth. For example, Mahoney (2014) found significant income gaps between qualified Māori and non-Māori (albeit a smaller one than for Māori and non-Māori with no qualifications).

[6] We note that the term 'human capital' is commonly used as a synonym for workforce capability. While this can be a useful shorthand, it is important to note that formal Human Capital Theory has been subject to significant criticism based on empirical and theoretical flaws (see for example Brown, Cheung & Lauder, 2015; Fix, 2018; Lauder, 2015; Lauder, Brown & Ashton, 2017; Marginson, 2019; Tan, 2014).

are valuable for both their contribution to New Zealand-specific literature in this area and their accessibility.

14. We recognise that the Commission's work in reports Three and Four is not intended to explore New Zealand's overall approach to education and work. However, we see the areas on which these reports focus – how well our education and training structures support technology adoption and changing work patterns – as strands within the wider question of how well our education system reflects and supports the world of work. It is important to note that this is not simply an issue of improving firm productivity. It also involves ensuring that people who invest time and money in education – whether with a specific career goal or a more generalised expectation of 'getting a good job' – have the best chance of positive outcomes. To that end we are pleased to see that the Commission has returned to some of the findings and recommendations from its 2016-2017 inquiry into tertiary education.

15. The last few years have been a significant time of change for education in general and the vocational education sector in particular. Many of these changes have been driven by a desire to ensure that our education and training system can support changing patterns of work, and therefore several issues raised by the Commission in reports Three and Four have also been touched on during those reforms and reviews. Examples of our thinking on the broad question of education and work relationships can be found in our *Building on Solid Foundations* strategic report (BCITO, 2017), and submissions on revisions to the National Qualifications Framework (BCITO, 2018b; 2019d), the Reviews of NCEA and Tomorrow's Schools (BCITO, 2018a; 2019b), the Reform of Vocational Education proposals (BCITO, 2019a), the Education (Vocational Education and Training Reform) Amendment Bill 2019 (BCITO, 2019e), the Education and Training Bill 2019 (BCITO, 2020b), the Tertiary Education Strategy (BCITO, 2019f), and the National Education and Learning Priorities (BCITO, 2019g). Our commentary below includes elements from those submissions and publications.

16. We note that Report Three does not explore the role of regulation and occupational standards in driving ongoing workforce training. It is worthwhile noting that the occupations where ongoing training is most common – professionals and community support workers – are those most likely to have well-structured career trajectories tied to further education, and/or registration standards that encourage or require ongoing training or similar professional development.[7] They are also more likely to be employed in the public sector, which generally has not just higher levels of training than the private sector, but is also more likely to have formal entitlements to education and training written into employment agreements (see for example Bryson, 2019).

17. Overall, we believe that there is a general lack of information on training drivers and habits specific to New Zealand firms and occupations; the information that we do have is mainly generalised, irregularly collected, superficial, and in many cases quite dated. We see the establishment of workforce development councils as positive in this regard, given that their statutory skills and workforce leadership function will likely involve research and forecasting around industry skill needs and behaviours.[8] However, this will depend on these bodies being funded specifically to support research activities associated with this role. Notwithstanding

[7] Similarly, the ICT industry (which also has high ongoing training levels) involves a range of privately-owned credentials and licenses that are essentially required for people who work with specific propriety technologies.
[8] Their provision of funding advice to the TEC will also rely on having high quality information of this type.

this, it would be valuable for the Commission's final report to highlight this evidence gap and the need for further support and/or deeper work by government agencies.

18. We also recommend that in its final report the Commission explores the concept of skills ecosystems (Buchanan et al., 2001; Buchanan, Anderson & Power, 2017; Finegold, 1999) as a base for future policy work on technology adoption, the future of work, and skills development. The ecosystem model depicts effective skill development as involving not a linear supply-demand system but rather a series of feedback loops in which firms and education organisations influence each other.

19. Traditional skills initiatives tend to focus on producing more skills for employers (skills stockpiling). However, the ecosystem approach emphasises that building productivity via skills requires active and productive engagement between those parts of the system responsible for *developing* labour (education organisations) and those responsible for *deploying* it (firms). Rather than treating 'firms' and 'educators' as discrete and essentially isolated entities, the model allows for and encourages active interaction between the two; education organisations do not simply supply skills to firms but assist industries to understand their needs and the types of skills and capabilities in which they should invest. As Windsor & Alcorso (2008) state:

> … Skill ecosystem approaches are as much about business strategies and workplace culture as they are about training … [They] are not only concerned with how skills are developed, but also whether the skills are utilised and how they affect business and personal outcomes. (11)

20. The ecosystem model is particularly relevant in considering the role of technology, given that it was first developed to describe the relationship between knowledge-intensive firms and education providers in California (such as in Silicon Valley). In doing so it emphasised the link between researching and developing new technologies, using those technologies to support business performance and innovation, and developing skills to support their effective implementation. While its application in New Zealand has been relatively limited, examples can be found in work by Dalziel (see for example 2012a, 2012b, 2013, 2015).

Work-based Learning[9]

21. We welcome the Commission's recognition of the value and importance of work-based learning. As we noted in our submission on the Tertiary Education Strategy (BCITO, 2019f):

> workplace-based learning has long been treated as a poor second cousin to classroom-based learning despite not only a history that stretches back literal millennia, but a rich body of pedagogical research exploring robust and effective on-job learning practices. (p.9)

This is despite such learning being not only applicable to the explicitly 'vocational' part of our education system but relevant to – and in many cases having a long pedigree within – most levels and fields. We have welcomed recent government statements

[9] We note that some distinguish between 'work-based' and 'workplace'-based education; the former relates specifically to use of practice-based pedagogy while the latter simply describes the learning environment. For example, the European Training Foundation (2018) excludes learning in dedicated firm training rooms from its definition of work-based learning: "This is not work-based learning. It is simply classroom-based learning that happens to take place in an enterprise rather than in an educational institution" (p.5).

regarding the importance of work-based learning, and were particularly pleased to see the recent draft Tertiary Education Strategy refer to prioritising in-work learning across all parts of the system (see BCITO, 2019f for our commentary on this issue).

22. Work-based learning is especially valuable for ensuring that education practices support technological change. Although there may be exceptions in 'bleeding-edge' institutions that focus specifically on advancing technology for a given industry, the infrastructure available for teaching in most education organisations will otherwise inevitably lag behind that used 'on the ground'. In contrast, on-job learning by definition exposes learners to the latest techniques, processes, and tools being used in the industry. Given the upcoming reforms to the vocational education system we would welcome explicit recognition in the Commission's final report that these changes – particularly the transfer of responsibility for such learning to providers – must preserve and enhance the system's ability to offer high-quality work-based learning.

23. We strongly support Recommendation 3.1 (and its associated Finding 3.1) in Report Three, regarding the position of contractors and volunteers. We have argued in other submissions (BCITO, 2019e; 2020a; 2020b) that relevant legislative definitions – which, as the Commission notes, will at the time of writing be preserved by the new Education and Training Bill 2019 – need to change in order to better reflect modern work arrangements. While TEC funding rules currently allow certain contractors to access publicly-funded on-job training, this is a policy 'fudge' that makes such workers reliant on agency goodwill.

24. As industries increase their use of contractor or quasi-contractor labour, it is critical that these workers are able to access on-job, work-based education. Moreover, we note that in Report Two the Commission stated that some firms – specifically platform businesses – may not support training of staff if that support is seen to signify 'employee' rather than 'contractor' status. We are not fully convinced of this claim, though it may be true that some platform firms will use this as an excuse for offloading the cost of training onto their staff. If this is a genuine disincentive, however, then changing eligibility would significantly weaken it as both full employees and self-employed contractors would be equally eligible for on-job education and training. Receiving training support from a firm would therefore not be a strong indicator that a full employment relationship exists.

Structural Issues and the Reform of Vocational Education

25. As the Commission notes, New Zealand's VET system is currently undergoing a significant reform process. In our view, the post-Rove system has clear potential to support a responsive skills development system that reflects changing requirements and contexts of work (both now and in the future). However, we strongly agree with the Commission's Recommendation 3.7 in Report Three that the government needs to clearly define of the different roles and responsibilities of entities within the new system.

26. As with any new system it is reasonable to expect that the specifics of these will evolve somewhat during the 'bedding-in' phase of new structures, processes, and relationships. It is critical, though, that not just government but also learners, industries, and organisations in

the sector, have a clear vision of the intended contribution played by each part of the system.[10] Moreover, this vision must be supported by appropriate policy settings.

27. In this context we would like to emphasise the need for clarity around the contribution of workforce development councils. Under the new model, WDCs are the main vehicle for industry input into the VET system; the Minister of Education has stated that councils will "[have] leadership across the whole vocational education system", "give industry greater control over all aspects of vocational education", and have a "powerful oversight role" (Minister of Education, 2019b, p. 13). This will require WDCs to have sufficient power in and over the system to effectively influence its operation, be governed principally in the interests of their industries, and be treated as expert leaders in New Zealand's national skills system.

28. It is the third part of this that we would like to highlight to the Commission. A key rationale for RoVE has been the argument that our VET system must be more strongly linked to industry and better support overall development of the workforce. Achieving this, however, will require WDCs to not only have a strong mandate for a broad range of activities but for others – especially government agencies – to respect and support that mandate. Essentially, WDCs will need to be treated as not simply part of a workforce supply chain, but as key elements of the skills development infrastructure for their industries.

29. For example, we expect to see WDCs playing a key role in the government's development of workforce policies and initiatives. Most ITOs currently engage in policy development and consultation related to their industries, but in our experience we are usually involved simply as an external stakeholder; we are one of many interested parties who can provide useful feedback on ideas that agencies have developed, but fundamentally sit outside the policy development process. In the new regime, however, we would expect to see government agencies treating WDCs as not just stakeholders to be consulted, but core partners in their work around specific industries. This will often involve shared actions; it would, for example, seem wasteful for an agency to develop its own construction workforce projections when a dedicated construction WDC with deeper expert knowledge is undertaking the same work.

30. We have concerns, however, that in practice workforce development councils will be treated by government agencies as simply 'ITOs without trainees'. The value-add of the WDC model lies in their position as system-level bodies who are responsible both for shaping the education marketplace and engaging with the broader skills infrastructure for their industries. This allows them to ensure that our skills framework – not just education provision but our strategic thinking and planning – reflects both current industry contexts and skills needs, and upcoming challenges and developments. If they are treated as simply a new type of TEO and have no more strategic influence than ITOs currently possess, then we believe that a key element of the RoVE vision will have failed.

31. In this vein, we query the Commission's comment that "the Government should not place undue emphasis on the concept of "industries" or on WDCs to define the skills needs of the future workforce" (NZPC, 2019c, p.28). The point of the WDC system – and the industry

[10] Note that non-education agencies need to understand the role of these structures. For example, we would expect the Construction and Infrastructure WDC to have a strong relationship with many parts of MBIE, while the Ministry of Health, Ministry of Social Development, and Oranga Tamariki will all need to understand the role of the Health, Community, and Social Services WDC and engage productively with it.

training system it is replacing – is that the people who work in industries are best-placed to determine the skills, knowledge, and training arrangements that are appropriate to that industry; councils are the structures that enable this voice to be heard. We have elsewhere referred to this principle as 'vocational self-determination' (BCITO, 2019e) and would argue that it is well-established in many parts of the education system. Not only does it underpin industry training, but also the work of regulatory and professional bodies in health, law, accounting, social work, and other areas.

32. The Commission is right to point out that 'industry' is not a perfect category for organising skills policy. Skills are embodied through occupations rather than firms and while many roles are closely tied to one industry, a large number exist across multiple sectors (accounting, ICT, and administration being classic examples). However, in our view organising skill development around the notion of 'industry' provides a reasonable compromise given the complexity, number of entities, and potential 'patch protection' issues involved in a fully occupation-based model. Similarly, while our current model might have been termed 'industry' training, in practice it has been organised around a combination of industries and occupations;[11] the proposed WDC coverage areas continue this pattern.

33. We are unsure why the Commission believes that WDCs are likely to focus on "serving old business models and technologies of incumbents" (NZPC, 2019c, p. 28). Workforce development councils will be industry-governed, and it is true that large incumbent firms will exercise influence because of that. However, they will be specifically charged to take a strategic view on future skills requirements for their industries, as well as required to take note of broader government priorities which would likely include supporting innovation.

34. Moreover, the inclusion of an explicit skills leadership role and the decoupling of funding from direct trainee numbers (compared to the ITO model) should make the Commission's feared scenario less likely. Notably, because WDC funding will not be tied directly to enrolments in the same way as ITOs, they will arguably have greater freedom to introduce new skill elements that are not favoured by one or two dominant employers.[12] In that sense, it could be argued that moving from the industry-owned ITO model to the industry-led WDC model should represent an improvement from the Commission's point of view.

35. We would also note that relying simply on market discipline to create innovation in our skills system – which the Commission appears to imply would be more desirable than analysis and evidence-grounded approach on which the WDC model is founded – is actually more likely to discourage innovation and reward incumbency. In an uncoordinated system, education organisations will focus on servicing the largest area of demand, which almost by definition will be the existing workforces and modes of operations of large, incumbent players. Such organisations have significantly more market power than small niche firms, and the skills

[11] Hence the problem identified in RoVE material of individual firms having to interact with multiple different ITOs (Minister of Education, 2019a).

[12] ITO funding currently derives from a mix of industry-based contributions (usually via programme fees) and per-learner public subsidies (STMs). In some industries a small group of large employers can therefore be responsible for a significant percentage of the organisation's income, creating significant incentives for the ITO to prioritise their desires and business models over smaller firms or introducing innovation.

system will therefore primarily reflect their needs.[13] A WDC, in contrast, is explicitly charged to prioritise the good of their industry(ies) – rather than the good of education organisations or an individual firm – and ensure that relevant qualifications, programmes, and assessment approaches reflect those broader needs.

36. In this respect, we note that there is historical precedent for occupational bodies leading the modernisation of curriculum, assessment, and practice, such as enforcing the introduction of cultural safety to nursing and midwifery practice during the 1990s against significant resistance from some educators and practitioners (Papps & Ramsden, 1996). Conversely, in New Zealand we have empirical evidence from the 1990s and 2000s as to the effect of a relatively lightly regulated qualification market on vocational provision; this led to a massive proliferation of highly variable qualifications that required the subsequent Review of Qualifications process and revised regulations to (partially) resolve.[14]

Education Pathways and Parity of Esteem

37. We strongly agree with the Commission's view that degree-centred pathways constitute a 'well-lit path' through education. In contrast, choosing to pursue vocational learning is often more like following shadowy backroads, tracing unmarked trails, or in the worst cases, bush-bashing through uncharted wilderness. The experiences, perceptions, and literature outlined in Eyre & Hipkins (2019) and Hipkins & Vaughan (2019) resonate strongly with our experiences at BCITO and the arguments we have been making for some time (see for example BCITO 2017; 2018b; 2019f; 2019g).

38. A key reason for this difference is the existence of significant parity of esteem or status issues between vocational and 'academic' pathways. This issue is well-recognised in both New Zealand and international literature, and lies at the heart of the findings from this inquiry's reports into subject choice.[15] In our secondary schools, this translates into steering 'bright' learners into subjects perceived as more academic, prioritising Achievement Standards over Unit Standards, focusing on University Entrance as a key performance marker, and framing professional or white collar work as something to aim for over other paths. As we noted in BCITO (2019g) this is often framed as having 'high standards' or 'high expectations', implicitly associating apprenticeships and other vocational options with low standards or expectations.

39. It is important to note that the parity of esteem issue is not as simple as career-focused learning being seen as bad, while purely academic programmes are good. For example, professional pathways such as engineering, accounting, medicine, or the sciences have significant prestige attached to them, and making study choices that support such careers is often treated as highly worthwhile (Eyre & Hipkins, 2019).[16] Rather, the parity of esteem issue is strongly linked to the social status of particular occupations; broadly speaking, education

[13] Particularly given the paradox that innovation may require specific new skills before it can be implemented; planes are unusable without pilots, but demand for pilot training will be low until a large number of planes are in service. The skills and workforce development role of WDCs is a way of addressing this issue.
[14] This effect on quality appears to be in line with the experience of other education jurisdictions (see for example Keep, 2016; Probert, 2015).
[15] In addition to Hipkins & Vaughan (2019) see for example Beddie (2015), Billett (2014), Kersh & Juul (2015), NZQA (2019), PPTA (2014), Strathdee (2005, 2012), Vaughan (2012).
[16] And, to be fair, education that is not directly tied to work is regularly derided for coming from an 'ivory tower', being impractical, or as a luxury for the privileged.

tied to trades and service work is often seen as low status, while education tied to professions and some creative and advanced technology industries is seen as of high status. It is the first group to which the term vocational is usually applied.[17]

40. This parity of esteem issue stifles innovation by encouraging schools to focus on serving high-status career pathways, and making them more reluctant to implement new models that are not tied to such occupations. As a result, our education system ends up displaying rigidity in practice despite the autonomy and flexibility that actually exists (Bolton, 2017; Hood, 2019; NCEA Ministerial Review Group, 2018; Tomorrow's Schools Independent Taskforce, 2018).[18] For example, the Vocational Pathways initiative was intended to be applicable to all learners regardless of the track they were following. However, evaluation has found that schools often instead use it as a form of intervention or alternative for those not succeeding in 'mainstream' schooling:

> Vocational Pathways were functioning as an add-on to a traditional curriculum model, and their influence on curriculum was limited. A perception that 'vocational' education is less rigorous or prestigious than the more traditional academic track persists among some school leaders, students and whanau. (Education Review Office, 2016; p. 5)

41. The contrast here with University Entrance is considerable; we know that only approximately a third of school leavers will go on to attend university (at least in the short term), and as the Commission points out the award itself is of little value. This is especially the case given that the 'baseline' eligibility it provides becomes irrelevant once a person turns 20 (see Education Act 1989, s 247). And yet, as the Commission notes, it exerts a massive influence on how schools structure learning.[19] We firmly agree with the Commission's comments in Report Four regarding this award, as well as its earlier recommendation that it be abolished (NZPC, 2017). Conversely, we believe there would be value in additional work on how Vocational Pathways can be used to 'bring light' to vocational learning paths.

42. Another avenue we have identified for addressing parity of esteem issues lies in the structure of our qualification framework – specifically the position of qualifications from vocational programmes compared to degree-level education. A full discussion of our thinking on this issue can be found in BCITO (2018b), but in brief New Zealand largely defines vocational learning not through pedagogy but through reference to New Zealand Qualification Framework levels,[20] thus

> … defining VET by complexity: vocational education is defined as learning which is less sophisticated than that which occurs in 'academic' settings. This denies the possibility of complex VET, in the process undermining the principle of educational

[17] Although it is ironic that advanced specialisations in medicine are often referred to as vocational scopes.
[18] We recognise that in some cases schools who would like to innovate are pressured to stick with 'traditional' models by parents and whānau, local communities, and older alumni who have relatively conservative expectations of what secondary education should involve or display prejudice towards towards VET pathways. While this is not an excuse for not innovating, it does highlight the need for additional communication work by schools and other bodies (such as our 'tricky chat' campaign) focused on reducing such resistance.
[19] The NCEA Ministerial Review Group (2018) recommended instituting a parallel 'Vocational Entrance' award, but we are currently sceptical as to the value and purpose of such an award.
[20] We do note that the Education (Vocational Education and Training Reform) Amendment Bill 2019 will put in place a formal definition of vocational education tied not to level but links to industry.

equity and 'locking in' the vocational sector as a lower status part of our system. (p.12).

To help address this we have proposed repositioning vocational qualifications on the Framework, based on the notion of incorporating the intended outcomes of qualifications into the Framework structure. This is discussed more fully in the above submission, but Appendix One presents an example of such a Framework alongside explanatory discussion.

43. One aspect of taking a 'future of work' approach to school-based learning and teaching that the Commission has not discussed is cultivating stronger links with the world of work. This does not simply mean structures such as Secondary-Tertiary Programmes, but cultivating ongoing relationships. For example, we are strong advocates for schools incorporating contributions from professional practitioners and local firms into learning experiences. This combines up-to-date 'disciplinary' education with familiarising young people as to what it means to work in that industry – including exposure to the latest technologies, rather than what a given school can afford to purchase.

44. Importantly, this concept is applicable across all fields. For example, creative arts are sometimes held up as the epitome of 'non-vocational' subjects in which learning has few connections to work. And yet some people studying these areas will pursue careers in associated industries, including as performers and artists, technical professionals (e.g. sound engineers), or in linked occupations (e.g. gallery owners or collection curators) – a point recognised by the inclusion of the Creative Industries strand within the Vocational Pathways initiative. These programmes can benefit from taking a work-focus – or a 'practice focus' if the language of work proves an ideological barrier for some – just as much as traditional trades and technology programmes.

Careers Education

45. As the Commission has identified, a strong careers education system is an important element of well-lit VET pathways. Improving this area has been the focus of much policy rhetoric over the past decade, but we are concerned that much of the effort to date on supporting young people's career decisions has focused simply on making more information available. As discussed in our submission to the National Education and Learning Priorities (BCITO, 2019g), career decisions are usually characterised by (at best) bounded rationality, inherently imperfect and contestable information, and a wide range of influences and values (Brown, 2017; Hargreaves & Osborne, 2017).

46. Moreover, depending on the type of information presented, such 'data-first' approaches to career thinking can be misleading or counterproductive. For example, emphasising occupational income as a basis for decision-making focusing can lead to an oversupply in particular fields (e.g. encouraging people to pursue fields such as law and accountancy at the expense of other study pathways) – thus likely increasing skills mismatch within the labour market – and may neglect the impact of costs over time (see for example Hurren et al., 2017).

47. An effective careers education system (at least within schools) should focus on cultivating the capabilities that support young people to engage in a process of exploration and discovery about the path that will suit them the best. As noted in our submission to the most recent draft Tertiary Education Strategy, "understanding one's talents, interests, and goals, and using

those to construct a pathway that involves both education and career goals should be the cornerstone of how people approach their future" (BCITO, 2019f, p.11). Schools and tertiary providers should focus on developing competencies that support learner *capability* to make and manage career choices (see for example Education Review Office, 2015; Williams et al., 2018), for example by basing their approach to such education on New Zealand's *Career Development Benchmarks*.[21]

48. In this respect, we note that care needs to be taken in interpreting the Commission's finding 2.4 in Report 3 that training at framework levels 1-4 does not tend to boost incomes. It is important to remember that qualifications do not in and of themselves generate income; *working in an occupation* does. The income effect of qualifications represents their ability to allow entry into a particular type of occupation (and sometimes to their ability to advance in that occupation) with particular income levels. Consequently, qualification income premia are heavily influenced by labour market policies and effects such as professional regulation, tightness of national and regional labour markets, the existence of collective bargaining, wage settlements and/or standardisation by large employers etc.[22]

49. Similarly, while this finding may be true in aggregate it masks significant differences between qualifications and disciplines. For example, while in a broad sense a student with a Bachelor's Degree may expect to access a higher income than one with a Level 4 Certificate, the situation is different for a degree student who becomes a social worker compared to a Level 4-qualified carpenter.[23] Focusing too strongly on returns from broad categories of qualifications (rather than from occupations) can therefore provide a misleading picture of the value of particular education and training pathways and reinforce the parity of esteem issues discussed above.

Conclusion

50. Thank you for the opportunity to contribute to this stage of the Commission's inquiry; we look forward to the Commission's final report with interest. Please do not hesitate to contact me if you would like to discuss any of the points we have raised

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[21] Benchmarks for secondary Schools are available at https://www.careers.govt.nz/resources/planning/career-development-benchmarks/secondary/ while those for Years 7 and 8 are available at https://www.careers.govt.nz/resources/planning/career-development-benchmarks/year-7-and-8/.
[22] For example, returns to building and construction qualifications are likely higher during the current 'boom' phase than they were during the 2008 downturn. Conversely, migrants with high-level qualifications which are not recognised in New Zealand may have incomes significantly lower than their education would suggest
[23] The Ministry of Business, Innovation and Employment's Employment Outlook tool (MBIE, 2020) estimates the average income in 2019 of social workers to be $54,000 and of builders to be $59,900. Note also that this and most other income premium calculations ignore cost of study issues, including factors such as lost income.

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APPENDIX ONE: An Outcome-Inclusive Qualification Structure

(Excerpted from BCITO, 2018b)

Level	Qualifications		
	Qualification Purpose	**'Academic' Examples**	**'Vocational' Examples**
10	Advanced Professional and Research Education	Doctoral Degree	
9		Masters' Degree	
8		Postgraduate Diplomas & Certificates; Honours Degrees	Post-experience education and advanced technical specialisations
7	Professional and Vocational Education	300-level Degree papers; Graduate Diploma/ Certificate	Degree apprenticeships, New Zealand apprenticeships, advanced vocational training
6		200-level Degree papers; Pre-degree Diplomas	New Zealand Apprenticeships
5	Core and Occupational Training	100-level Degree papers; Pre-degree Certificates	Specialised vocational training (e.g. team management; basic specialisation)
4		Bridging qualifications	Non-apprenticeship vocational training
3		Bridging qualifications, including NCEA L3	Initial vocational training; Bridging qualifications, including pre-trade qualifications and NCEA L3
2	Foundation Learning	Foundation qualifications, including NCEA L1 and L2	
1			

In our proposed model, levels 1 and 2 would be explicitly identified as foundation education that provides the basic capabilities necessary for further education, including the National Certificates of Educational Achievement (levels 1 and 2). Levels 3 to 5 would be defined as focused training in the capabilities necessary for specific occupations, or the initial training necessary for people to enter a given industry or career. This would include both bridging programmes and Level 3 of the NCEA, and we would anticipate most micro-credentials being listed in this group. At the upper end, this layer would also encompass some types of specialised vocational training – for example, in team leadership and supervision – as well as the first 'year' of a traditional Bachelor's degree.[24]

The outcome layer encompassing levels 6 and 7 would be built around the notion of entering a community of practice. Building on concepts such as Vocational Thresholds (Vaughan *et al.* 2015) and the 'Belonging-Becoming-Being' continuum (Chan 2013), programmes and qualifications in this layer would be expected to prepare learners for becoming part of a professional grouping – whether a traditional profession such as an accountant or nurse, or a trade practitioner such as a joiner, baker, or electrician.

The defining feature of this layer would be that the learner in such programmes is moving beyond a focus on performing occupation-specific tasks or understanding core content, and cultivating a

[24] A traditional Bachelors Degree is a single Level 7 qualification, but the three levels of papers within it are often seen as aligned to levels 5, 6, and 7 of the NZQF (see, for example, Massey University (2013, 2016)).

broader sense of their discipline or industry and their own position within it. This includes both the disciplinary expertise expected of academic graduates, and the professional capabilities of those with applied qualifications. The second and final years of traditional degrees – and the overall Bachelors qualification – would sit in this group, but so too would Apprenticeships (including Degree Apprenticeships) and vocational qualifications intended to support practice at senior levels, such as small firm management or technical specialisations.

Finally, levels 8-10 would be clearly defined as advanced professional education and training people to create new knowledge through research – qualifications intended for those who will or are leading within their industries or professions. As well as post-graduate academic qualifications, this layer would also encompass highly complex vocational learning intended for practitioners with significant experience, and training for advanced specialist roles.