Subject choice for the future of work

Insights from focus groups

Jan Eyre and Rosemary Hipkins

NZCER
Rangahau Mātauranga o Aotearoa

NEW ZEALAND
PRODUCTIVITY COMMISSION
Te Kōmihana Whai Hua o Aotearoa

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1.

Introduction

This research was commissioned by the New ZealndProductivity Commission to inform their study of the future of work in New Zealand. The main research question asks, in essence:

In what ways are secondary school subject-choice systems, and students' subject choices, positioned to respond to future of work trends?

This is a deceptively simple question which could be addressed from multiple starting points. The following sub-questions provide more specific direction.

- Do institutional biases in schools, including the construction and delivery of careers advice, funnel students from different backgrounds toward certain education and career pathways?
- Is keeping options open until the end of secondary school a good strategy to prepare for an uncertain and rapidly changing future?
- Does the system architecture in New Zealand schools unnecessarily limit future choices for students?
- Does staying in school longer open more career/further study options? Does it close any options?
- How much variability is there in the system between schools, and what drives variability?
- In what ways do policy and regulatory settings limit flexibility in the schooling system and student choices?

A study in two parts

Our earlier report (Hipkins & Vaughan, 2019) scoped the context of subject-choice systems in New Zealand via a search for and discussion of relevant local and international literature. The final section of that report summarised the discussion to provide succinct answers to the research sub-questions listed above.

This second report provides additional insights gathered from focus group discussions with curriculum leaders representing a range of secondary schools. These insights allow us to contextualise our earlier findings, drawing on the perspectives of school leaders as they respond to these challenges in 2019 and beyond.

The focus groups

We held two focus group discussions: one in the North Island and one in the South Island. Six participants attended the North Island group, representing five schools (two participants were from the same school). Seven participants attended the South Island group, representing seven schools. All participants

were senior leaders at their schools, the majority being deputy, assistant, or associate principals with responsibility for curriculum decisions. One participant was a pathways leader, another had additional responsibilities for careers advice, and another was the lead principal for a Kāhui Ako.[1]

Participants represented a diverse range of schools, including a mix of school types (co-ed, single sex), deciles, sizes, and school populations (e.g., some with a high proportion of Māori or Pacific students). Table 1 shows the characteristics of the schools. Note that we have allocated numbers to the schools rather than using their names. We use these numbers throughout the report when referring to schools, to protect school and participant identities.

TABLE 1   **Participant school characteristics**

School	School type	Decile	Roll	≥20% Māori	≥20% Pasifika	≥20% Asian
1	Co-ed	8–10	500–1,000			
2	Co-ed	1–3	1,000–1,500	✓	✓	✓
3	Girls	8–10	2,000+			✓
4	Co-ed	1–3	500–1,000	✓	✓	
5	Co-ed	8–10	1,000–1,500	✓		
6	Girls	4–7	500–1,000	✓		
7	Co-ed	1–3	500–1,000	✓		
8	Co-ed	8–10	500–1,000			
9	Boys	8–10	1,000–1,500			
10	Co-ed	1–3	500–1,000	✓	✓	
11	Co-ed	8–10	<500			
12	Co-ed	8–10	1,000–1,500			

In Table 1, school deciles are shown as ranges: 1–3 (low), 4–7 (mid), and 8–10 (high). School rolls are also shown as ranges (<500, 500–1,000, 1,000–1,500, and 1,500–2,000). Both decile and school size can impact on schools' ability to offer flexible curriculum choices, hence these were key sampling variables for this work.

At each focus group, researchers led the discussion to cover five main topics:
- the concept of "keeping options open"
- how subjects cluster together
- provision of advice on subject choices
- academic and vocational pathways
- the impact of the National Certificates of Educational Achievement (NCEA).

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1   A Community of Learning | Kāhui Ako is a group of education and training providers that form around children and young people's learning pathways and work together to help them achieve their full potential. The lead principal for a Kāhui Ako plays a key role in planning, co-ordinating, and facilitating the work of the Kāhui Ako and the other Kāhui Ako roles. For more details about Kāhui Ako, see https://www.education.govt.nz/communities-of-learning/

We used a series of questions and prompts to guide the focus group discussion on these topics (see Appendix 1). Each focus group lasted for approximately 90 minutes.

In the next section, we draw on the focus group discussions to help answer the five research sub-questions.

Limitations

This report draws on discussions with two groups of school leaders. These leaders have been able to provide valuable information in relation to their perspectives on subject choice. Readers of this report need to exercise some caution and note that this research has not drawn on the perspectives of other groups who will also have an important contribution to make—in particular, the perspectives of students, Māori indigenous perspectives, and the perspectives of parents and whānau.

2.

Revisiting the research sub-questions

In this section, we revisit each of the five research sub-questions and add insights from our focus group discussions with curriculum leaders.

Do institutional biases in schools, including the construction and delivery of careers advice, funnel students from different backgrounds toward certain education and career pathways?

In our literature review, we found that there is a general bias towards university study as a post-school destination, with work or vocational learning perceived to be a less-esteemed pathway. We also found that careers education tends to privilege short-term information-giving over a longer-term career-development focus. Here we provide additional comment on these findings based on the focus group discussions. We also discuss other themes that emerged through the focus groups.

Schools vary from traditional to more progressive in their approaches to student pathways

Focus group discussions confirmed the general bias towards university study but also pointed to a continuum. Schools at the very traditional end of the continuum tend to have a culture that measures student success in terms of achievement in "academic" subjects. In these schools, the goal is for students to gain University Entrance (UE), leading to entry to degree courses in favoured professions such as engineering or medicine. At the other end of the spectrum, progressive schools are attempting to define success in a more rounded way, with the goal of offering an appropriate, individualised pathway for every student. These progressive schools emphasise the development of capabilities and skills, and place equal value on vocational and academic pathways. Further explanation of the terms "traditional" and "progressive" as they are used in this report can be found on page 23.

Strong influencing factors described by our focus group participants are the school culture and the structure of the timetable.

Our focus group participants spoke about three main contributors to the school culture: the demographic of the local community; the expectations of parents; and the attitudes of staff.

The local community

Our literature review suggested that where the local community is largely professional middle-class, people tend to be more familiar and comfortable with the traditional view of schooling as a path to university study (the "well-lit" path). One of our focus group participants, who comes from what might be considered a traditional school, described feeling "stuck in our demographic, in the professional, at university study" (school 9).

Where the school draws students from a more diverse local community, there may be acceptance of a wider definition of success, and more comfort with a range of pathways:

> Our community is quite a mix of families that have done very well in their vocational pathways, through to those that have gone professional. And so we don't have too many hang-ups about students pursuing a vocational pathway, because it sort of works with our community … I don't sense a real elitism. (school 12)

Expectations of parents

Both focus groups raised the issue of parental expectations for their children, especially as these relate to academic pathways with an associated bias towards UE. Some parents choose a school because of its reputation for focusing on academic pathways. There was a shared perception that these parents see UE as the "gold standard" and the only option for their children. This view strongly influences students' pathway choices as well as the ability of a school to move towards a diversity of options.

Attitudes of staff

In some schools, staff reinforce and perpetuate a traditional culture:

> We've got staff who went to school here, have only ever taught here. It's 'This is the way we do things at this particular school.' And they're very emotively entrenched too. Their whole identity is tied up in what […] looks like as a school—which 20 years ago was great, but it does do some disservice to our kids. (school 6)

> When you ask [teachers] to consider re-vamping their courses and maybe leaving some assessment out, their stock standard answer is 'Oh yes, but when they go to university they'll need this', and it's breaking that idea of, well actually they're not all going to university. (school 9)

> That's part of our culture too. You get your credits, and you go off and you become a doctor or an engineer and so forth. (school 6)

Several focus group participants described a hierarchy of subjects, based on how "academic" they are seen to be. This hierarchy may be reinforced by teachers, making it difficult to introduce new or alternative courses. One participant described trying to introduce business studies to the school. He met resistance from staff who felt that business studies was not on an academic par with more traditional subjects such as accounting or economics.

Participants also noted that the system of training secondary teachers as subject specialists may serve to reinforce traditional academic pathways and subject "silos":

> We're also going through a system where the people we employ have got a degree in a particular area, and they're trained as teachers, and they come into a school, and they know their subject area, and they want to teach their subject area. (school 12)

As discussed in our literature review, the school timetable can underpin the bias towards academic, university-oriented study. The traditional timetable for the senior years tends to be clustered around groups

of subjects in order to allow students to meet the requirements of UE.[2] This in turn affects the ability of the school to offer viable alternative pathways. For example, with a traditional timetable, it can be difficult to accommodate students studying partly in school and partly in work-based or vocational programmes outside of school. Because they are out of school for 1 or 2 days a week, they may miss learning in key areas. All the focus group schools were grappling with timetabling challenges to varying degrees.

Attitudes towards vocational pathways are beginning to shift

Our literature review found that pathways to work or vocational learning are less esteemed than academic pathways and are typically promoted to students considered to be less academically able. Our focus group discussions suggest that these attitudes may be gradually shifting as more staff and students, and society more generally, see the benefits of vocational routes into employment. We heard that there is a strong sense of which are academic, and which are non-academic subjects and of the hierarchy between them. However, we also heard that there is some blurring of the boundaries as a wide variety of students enrol in dual pathways or a mix of subjects:

> Our Gateway placements … they're not aimed at those students that need to be out there in the workplace, they are often actually offered to everybody … But it is often actually students that are trying to get UE and go into university, that also do the Gateway … the stigma of those disengaged learners that need to go on Gateway so they can get some work experience is disappearing, little by little. (school 1)

However, change is slow, especially when teachers or parents do not see the value of vocational options:

> There is still that ingrained 'I have to have them here in my room.' That's quite significant in some schools, you know, that barrier of 'Why are they doing Gateway placement? And why are they going out and doing carpentry when I've got them here doing UE entry?' (school 2)

> Our staff are very much academically focused, and they've all got degrees and so forth, and I don't think we have the breadth in our staff to support vocational pathways as well as academic … Academic's their comfort zone, so they fall back to their comfort, teaching comfort zone. (school 6)

Focus group participants commented on the need for parental education about the modern working environment, future possibilities for work, and the value of vocational pathways:

> Sometimes students are limited by their parents' understanding. So, I find that it's educating that, you know, there's such a flexible way of being in the world at the moment. But then you've got parents who have grown up with a different set of values, of what's important, and often it is working with the parents as well and making them understand that what worked 30 years ago isn't the same. (school 1)

In schools where there has been a change in attitudes towards vocational pathways, a variety of factors have contributed. These factors include careful implementation of dual pathways and review of the timetable. One school has seen a large increase in the number of students enrolling in Trades Academies over a period of 3 years. Initially, students were hesitant and there was a feeling that this route was only for those who were not academically able. However, over 3 years it has grown to be a valued option by both students and their families and is oversubscribed. Making deliberate, careful choices about the first group of students to go through was crucial to the programme's success:

> We probably chose wisely, as our first lot to go through. Although they were nervous, we encouraged those that we thought would start that conversation within school. It's not always the conversation they have with me, it's the one that we have that then goes out and travels around. And then that one person brings in six more. (school 2)

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2 University Entrance requires a minimum of 14 credits in each of three approved subjects. Students must also have achieved NCEA Level 3 and minimum literacy and numeracy requirements.

Another school described "working hard" on changing attitudes over a period of years, because the original divide between vocational and academic was "like cabbages and kings" (school 11). Key factors in shifting attitudes were changes to the timetable in conjunction with introducing new subjects. The changes meant that academic and vocational options became complementary rather than competitive:

> When we changed our timetable and changed our course offerings, things became sort of complementary as opposed to competitive. So quite a few of our very academic students might have taken a vocational fifth subject or something they're really interested in or just wanted to do that didn't involve multiple re-submissions or homework or things like that. They could just chill out and enjoy it … the distinction is more within some of our teaching staff, more so than it'd be within our communities. (school 11)

Celebrating success is another important strategy for this school and helps to promote vocational pathways:

> The Prime Minister's vocational awards filled me with great joy, because I've got a perfect student for one, and I think this kid will now be rated up there with a dux. And to me that is the one thing—that those two can line up side-by-side, and financially that vocational one's going to be a whole heap better off than the other one. And I just think we need to celebrate that. And as long as we celebrate it and promote it within our school and our community, I think … it's evolutionary. You'll never get a revolution around it, but it's evolving. (school 11)

Finding an alternative to the label of "vocational" would help to raise the profile of these pathways:

> The whole connotation around calling it 'vocational' wasn't something you wanted to promote to whānau because immediately they hooked in on that word: 'Why are you putting them there?' Who came up with that? We did ask the Ministry and nobody could tell us why. (school 4)

Careers advice varies between schools and requires a team approach to help students make effective long-term pathway choices

We asked participants in the focus groups about careers advice at their schools. They agreed that this can be a tricky area, due to constant and rapid changes in the environment and in requirements for tertiary study or vocational options. The need to rethink traditional models of careers advice was apparent in both discussions.

We heard some comments about careers advice that reinforces traditional pathways, with university study as the preferred goal:

> We've got a careers adviser who's very traditional, who is very clear and tells the kids that they need to be doing this package of subjects if they want to be a doctor … I think our careers advisers have quite a lot of power in schools. (school 6)

A narrow focus on individual professional roles such as doctor, lawyer, or engineer can lead students and families to overlook the diverse employment opportunities within broader fields of potential work. One participant, who also had responsibility for pathways advice, described an example from engineering:

> The one that sticks out all the time is that engineering space, where [the engineering industry] push back all the time saying, 'I don't want them to go to university, please tell them not to go, we want them to just do a 2-year diploma—we'll take them the rest of the journey.' But to get that message back through both to some staff, and definitely to parents, is really hard. (school 2)

Schools represented in the focus groups have a wide variety of models of careers advice. Most have implemented a team approach involving both individual teachers and specialist careers advisers. A common feature is that all teachers have some responsibility for advising a group of students, sometimes

keeping the same group for several years to develop and build on relationships.[3] Teachers tend to give broad advice about keeping options open, check that students aren't "falling through the cracks", and keep an eye on their subject choices and timetables:

> The best way I can describe it is like form class on steroids, you know, it's 200 minutes a week. I've got the same 17 students throughout the 3 years. And my role is to be their academic mentor … My sole focus is to make sure that they're not falling through the cracks … choosing our options for next year, discussing it with them in terms of 'What is your timetable going to look like and why?' So that's our main avenue for advising the students, and then their academic adviser. And alongside us we've got quite a strong team of careers. (school 1)

Specialist careers advisers provide more specific information about career pathways. However, focus group participants felt that all teachers should have some responsibility for providing careers planning and advice, preferably personalised to each student. Doing this effectively would require increased resourcing, including time and professional development:

> The reality is careers should be a part of every teacher's programme in a way. But it's having the time and the training for those teachers to be able to do that job well. (school 11)

> We know we should be doing stuff personalised and we're trying to do that, but the resourcing to enable that is not in place. (school 7)

Many schools have also abandoned the traditional "options evenings", feeling that these have become promotional rather than informative. The promotional emphasis was partly attributed to the need to attract enough "bums on seats" to keep options open:

> We used to have an event in the evenings each year with stalls and parents would come in, and what we were finding is it was just becoming incredibly promotional. And we actually roped back from it, and what we went to was some subject videos, and we gave clear outlines about what was expected in those subject videos. Our Year 13 academic leaders actually went and filmed them, filmed the heads of department speaking. We were very clear that those videos should be informative and not overtly promotional. (school 5)

In summary

There is a general bias towards academic pathways with university as a post-school destination. However, some schools are successfully shifting the balance towards a more diverse range of pathways. In these schools, there is greater awareness and take-up of vocational or work-based options. These options are positioned as complementary to, rather than in competition with, academic options. Restructuring the timetable and development of new and alterative courses are strategies that help support this shift. The degree to which schools are able to make the move towards a more "progressive" rather than "traditional" approach to pathways is strongly influenced by the school culture, including the demographic of the local community and the attitudes of parents/whānau and teachers.

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3   These groups go by various names and are broadly equivalent to "form groups" as opposed to "subject classes".

In what ways do policy and regulatory settings limit flexibility in the schooling system and in student choices?

Our literature review discussed how the flexibility of NCEA, a modular system where credits in any accredited school subject can count towards a qualification, can be constrained by the regulations for gaining UE. The review also pointed to literature that suggests parents and whānau may be unfamiliar with certain types of careers and so be unaware of the consequences of their children's pathway choices.

Here we provide additional comment on the UE requirements based on the focus group discussions. We also discuss three other themes that emerged through the focus groups: concerns that the proposed changes to NCEA may reduce its flexibility; a suggestion that "mixed messages" from key education agencies can impact on subject choices and pathways; and the problems caused by lack of qualified specialist teachers.

The regulations for gaining UE are a strong constraint on subject choice and are at odds with the flexibility of NCEA

The constraining influence of UE was a very strong theme in our focus group discussions:

> The absolute straitjacket for us and the thing that restricts the flexibility most is UE. It's so out of sync with the curriculum. It's so out of sync with NCEA's flexibility. (school 5)

In NCEA, the required number of standards for a qualification may be drawn from a wide range of subjects, both "academic" and "non-academic". To meet the requirements of UE at Year 13, students must accumulate at least 14 credits in each of three subjects on an "approved subjects" list.[4] There is a mismatch between these UE requirements and the more flexible requirements for gaining NCEA qualifications. One consequence of this mismatch is that students might gain NCEA Level 3, but not UE.

The main themes relating to UE that arose in our focus group discussions were as follows: UE as a constraint on the timetable; UE as a constraint to introducing alternative or innovative courses; and UE as a constraint on student subject choice.

UE as a constraint on the timetable

The need to accommodate UE requirements has an impact on timetabling and so affects other students who need a more flexible approach. This makes timetabling more complex:

> There are those students that are going to be engineers or whatever, and universities dictate that they must be doing these subjects, and they must be getting so many credits in these subjects at Level 3 … But then there's the other bunch of kids who are not down that—you know the other 80%—[we need to find a way to provide] the flexibility so that we're meeting their needs. (school 12)

UE as a constraint to introducing alternative or innovative courses

Our focus group discussions confirmed that the requirements of UE are a barrier to introducing alternative or innovative courses. For example, the requirement for 14 credits in each of three approved subjects can be limiting:

> In a school with 440 in a cohort, it actually gets quite hard for us to make a really boutique kind of programme for all of our students. To not go, 'Oh ****, you've actually cut out one of your three 14s.' (school 3)

UE as a constraint on student subject choice

There was a strong feeling that the school voice is not heard when UE is up for review: the university voice dominates. The "approved subject" list is seen as one example of dominance by the university sector. This

list is perceived to narrow choices along traditional "academic subject" lines and to reinforce "subject silos" in schools:

> I had to go to a focus group on that, and there was a decision last time that what would happen is as soon as a subject got achievement standards, it would automatically count as a UE subject. And after that'd been decided, the universities threw their toys out of the pram, and that was pulled back on. (school 5)

> It sort of funnels the students into this safe zone of working out what they're good at, and doing lots more of that … So, you know, we funnel them into this, 'Find out what the thing is I'm really good at, and do more of', rather than this growth idea. (school 3)

We heard that some students are choosing to leave school at the end of Year 12 and enrol in a polytechnic diploma course, rather than staying at school and studying subjects they are not interested in purely to meet UE requirements. These students can progress from the diploma into related degree-level study without having to "bulk out their timetable with subjects that aren't relevant to their interests":

> We're actually noticing a bit of a trend of Year 12 kids who could do University Entrance in a heartbeat, actually choosing a different pathway away from school because of those restrictions. (school 6)

Family/whānau may lack familiarity with certain types of careers and be "hyper-focused" on UE

Both focus groups raised the issue of lack of parent or whānau knowledge about the current and future work environment, particularly regarding vocational or work-based options. This discussion tended to be in the context of parental preference for academic pathways and UE.

There is a perception that parents/whānau in higher socioeconomic areas tend to see UE as the only viable pathway for their children and exert strong pressure for them to succeed in this route. This might happen even when a vocational route might be more in line with the student's interests. Even if students have pursued alternative courses earlier in their schooling, by the time they get to Year 13 parental expectations or societal pressures make them concentrate on traditional UE subjects. This can effectively shut down some options for them.

One school has a strong focus on students being involved in either tertiary pathways or work placements as part of their senior learning. They can combine this with studying at school for UE by having 2 days at polytechnic and 3 days at school. However, parents are often "hyper-focused" on UE and university study:

> There's a real tension around passion versus what I'd call a traditional pathway. I don't know when the balance is going to shift … we've got a group of parents knowing what they know and what they've been through, versus kids who have got very clear passions, but those passions not being maybe as valued because they don't lead to what is supposedly a pathway that's seen in the traditional kind of sense. That's really quite a tough conversation with parents … I think that there's a lot of education to do around that sort of stuff yet. (school 8)

> At Year 13 we have disengaged students who are really just killing time by remaining at school, and when we suggest that there are some great opportunities out there either through training through [polytechnic] or just going into the workforce, Mum and Dad come in and go, 'No, they need to stay until the end of Year 13.' And when you go, 'Why?' they really don't have an answer. (school 9)

The NCEA review "change package" may act to shut down rather than increase flexibility

An unexpected theme emerged in both focus groups. There was concern that the seven changes in the proposed NCEA Review "change package" will shut down flexibility rather than increasing it. Concerns about this possibility centred around Change 4—*have fewer, larger standards*. This change will reduce the

maximum number of credits in each subject to around 20, and each standard will have between four and six credits. The balance between internal and external assessment will also shift to a 50–50 split (Ministry of Education, 2019).

Several schools represented in the focus groups offer "non-traditional" courses such as philosophy or social anthropology. Such courses integrate units from a variety of subject areas. Students enrol in these courses because "they're exciting, they're challenging, they create thinking and critical skills" (school 1). However, there is a perception that having fewer larger achievement standards will cause traditional subjects to contract their focus and become more siloed. If that happens, courses that draw standards from different subjects may be more difficult to design and sustain. It is already hard to make them work in Year 13 because students might be at risk of not achieving sufficient standards in one approved subject to meet UE requirements:

> We've had philosophy as a subject at the college for about 10 years. We used standards from social studies, media, religious studies, English … we pull them in from all those different ones, but as the number of achievement standards contracts, and they become a little bit more 'owned' by those siloed subjects, that kind of approach is quite different. And we only recently can make it [UE] work at Year 13, because in Year 13 the philosophy uses mainly social studies standards. Because social studies is a university-approved subject, we can use it that way. (school 5)

Another participant mentioned students who change their minds about UE part-way through the year. While currently the school can help those students by enrolling them in internally assessed courses, the proposed change to a mix of internally and externally assessed standards for all subjects could make this more difficult:

> I'm thinking about one student in particular who's decided, 'No, I'm going to try and get into university' part-way through the year. We look at his courses going, 'Okay—so we need to re-hash your timetable.' We're fortunate that we have got a few courses at Year 13 where they can get University Entrance internally. My concern is with the changes with NCEA coming out, what will that look like? You know they hamstring us into these four standards, and two of them have to be external … At the moment, this young man's in media, and a PE course, and a social science course. And actually, he's working his butt off, which is nice to see, and he's on track to pull UE off because we can offer those internal-based courses. But if he was going to courses which had external-based stuff, and we'd already taught it, how's he going to catch up on that? At the moment there's an element of flexibility; we can accommodate those changes. (school 12)

One participant was also concerned that the move to larger standards of between four and six credits, with a maximum of 20 credits per subject, might have an impact on UE because students might need to achieve all the standards rather than being able to "miss" one:

> That is part of the UE problem, because you've got to leave them one standard that the kids might not get, to still get their 14. (school 3)

Mixed messages from key education agencies can have an impact on subject choice

Several participants in the focus groups mentioned "mixed messages" from central agencies such as the New Zealand Qualifications Authority (NZQA), the Ministry of Education (MoE), and the Education Review Office (ERO). They called for key agencies to work together and engage in "joined-up thinking" to support and strengthen key messages for schools and the wider community. For example, participants mentioned that while there was general agreement about not focusing on "league tables" of students' results, this message could be undermined by actions from the Ministry itself:

> We also get really mixed messages from the Ministry of Ed … We talk about our schools trying to not focus on league tables so much, but actually sometimes they're the first people that do it. They're the first

phone call saying, 'Actually, your results don't look as good as other schools.' We do a mentoring project that's got some Ministry funding, but they want to come in each term and know, kid by kid, 'What's the pathway for this kid?' Like, this kid's 15, 16, I don't actually think they know their pathway yet, and that's fine by us. (school 7)

The league tables to me are the biggest impediment to successful education for all children. They are just a drafting gate to funnel everyone down to suit a purpose which has no relevance really to the students that you've shoved down the path. You know, I think, that's what limits a lot of schools around flexibility. (school 11)

The structure of NCEA qualifications and the expectation of moving through one level each year can lead to a focus on getting students through the required number of credits in time:

And it's your traditional measure of a year to gain your qualification, which we're trying to break down over 2 years. And then you go, 'Oh, we've got these 20% at risk because they've only got 32 credits' or whatever it might be … we get caught up in that pressure from whatever level it is, whether it's your principal or ERO or whoever—parents. Pretty hard to resist back at times and be confident in yourself that it's okay if this kid gets it in July next year, or whenever. There's some brave people around which is awesome, but they still carry it in their hearts. (school 8)

Another example concerned mixed messages that potentially influenced the take-up of vocational pathways:

When the Vocational Pathways and the Vocational Pathways Awards first came in, in order to get your Vocational Pathways endorsement on your certificate, you had to do a certain amount of credits which were from outside the NCEA pathway. What that meant was, you potentially decreased your chance of getting your Merit or Excellence certificate endorsement. So there's a tension there initially between this route and this route. And if there'd been a bit more joined-up thinking at the start, you wouldn't have created that tension. Because of course what parents do is they look at that and think, 'Well, yeah, but that decreases my child's chance of getting Merit or Excellence. I want them to get Merit or Excellence.' And there was a push back there, and that was an unnecessary tension. It could've been avoided, I think. (school 5)

Another concern was a perceived push from the Ministry towards STEM subjects. Messaging in the media and from the Ministry:

… creates a parental push, that [students] must be doing as much science and—we don't have engineering—but science and technology and maths as possible. We keep saying, 'No, no, broad and wide, but that's …' And then to reinforce it or underscore it, NZQA have started producing a STEM report to schools. (school 3)

In the context of key agencies working together, participants raised the question about the reviews that are currently underway of NCEA and of vocational education (Review of Vocational Education, or ROVE). Participants wondered whether these two reviews would take the chance to "talk to each other": the concurrent reviews offer a unique opportunity for the compulsory and tertiary sectors to work in partnership to rethink student pathways. This is also an ideal opportunity to review UE requirements so that all parts of the system work coherently to facilitate student pathways through school and beyond, to work or further study:

If they want to change everything at once, which it appears that they want to do—just chuck the whole lot out and start again—it would be really good if they had everybody in the same area talking to one other … educational providers need to be working more collaboratively across their environments, not running this parallel track to one another. (school 11)

It [UE] sits totally outside the review [of NCEA], but it's the thing constraining everything. (school 3)

A lack of specialist teachers is limiting subject choice

In both our focus groups, lack of specialist teachers emerged as a theme in discussions about the barriers to subject choice. Put simply, subjects cannot be offered if there is no-one to teach them. Problematic subjects include Māori, digital technology, and technology.

> Our Māori teacher is going on maternity leave, and I just don't know how we're going to replace her, because there isn't anyone training as a Māori language teacher, to my knowledge, in Auckland this year … not a person. And the same with IT. There isn't anyone training to be a digital tech teacher. So we've got this big push to get digital technologies compulsory, but there isn't anyone in Auckland this year training. (school 3)

> We've had to be super creative with the way that we use our teachers … we've got a lot of co-teaching going on, and cross-curriculum, innovative ways in which people share classes. And even though we are a very white school … our Māori and Pasifika learners are coming through as well. We have been unable to find a te reo teacher, so what it means this year is that we've enrolled 14 of our students … through Te Kura, and then found a native te reo speaker who comes in and supports the learners. (school 1)

> It is really challenging. We want to be both innovative and creative and finding different ways to engage our learners with the curriculum, and then the limitations of the staffing. (school 1)

In summary

The regulations for UE place a strong constraint on flexibility and student choice in the senior secondary school. UE restricts the timetable, is a barrier to introducing new and alternative courses, and reinforces subject "silos". Parents and whānau, who have a strong influence on students' subject choices, tend to see UE as the "gold standard" for their children.

The ongoing and concurrent reviews of NCEA and the vocational education sector (ROVE) offer a timely opportunity to re-think UE requirements and pathways more generally. These reviews also offer the chance for central education agencies to develop and disseminate coherent key messages that will support schools and provide parental education about the future of work and value of both vocational and academic pathways to employment.

Is keeping options open until the end of secondary school a good strategy to prepare for an uncertain and rapidly changing future?

In our review of international and national literature, we reported that there is no simple definition of what keeping options open means, or any one way of going about it. Keeping options open could mean choosing a wide and potentially disconnected range of subjects; it could mean keeping pathways into tertiary study open; or it could mean developing capabilities for learning, work, and life beyond school.

We asked our focus group participants what keeping options open meant to them. Their answers clustered around three themes: keeping both vocational and academic pathways open for as long as possible; choosing a broad range of subjects based on interests and passions; and developing skills and capabilities for life beyond school. All three of these approaches could help students prepare for an uncertain and rapidly changing work future.

Keeping both academic and vocational pathways open gives students more options as they move beyond school

Participants talked about two main pathways: academic and non-academic (i.e., a focus on UE or on vocational/work-based opportunities). Several of the school leaders we talked to, including those from "traditional" schools, emphasised that it is important to keep *both* pathways open to all students for as long as possible, rather than "funnelling" them down one pathway too early. Crucially, students on vocational pathways should also have the option of keeping the UE pathway open:

> The other thing we've done for a long time is we've had quite an emphasis on students keeping the route to UE open. And there's no expectation that students will go on to UE, and it's not saying that university's the best route—you know, apprenticeship and woodwork are equally valid routes—but it's really keeping that option open … And the times in the past where we haven't done that, it's been our priority learners who haven't got UE—fallen off the UE—and that's really important for us to keep those options open. (school 5).

Keeping both options open extends students' pathway choices; it also allows for a change of mind at Year 13 or beyond. Rather than choosing either an academic or a vocational pathway at the end of Year 11 or 12, they can keep both routes open.

Choosing a range of subjects based on interests and passions is engaging for students and allows them to experiment

Many schools are opening up choices for students by removing prerequisites to entry into specific courses, or by developing innovative new courses. They are trying to encourage students to follow their interests and to experiment with a wide range of options. Some focus group participants commented that working in this way meant that students were more engaged and motivated:

> Providing a lot of choice and flexibility as the students work through the year levels, and not putting obstacles in their way, like prerequisites to get into courses. (school 12)

Several participants talked about the difficulty of choosing a pathway at a young age; interests and passions can change and develop over many years. Early specialisation can cut down future possibilities. Having said that, participants also gave examples of students returning to study after a break with a clear purpose and motivation. This motivation enabled them to reopen a previously closed pathway:

> When she finally decided what she wanted to do—she had an absolute purpose for learning [maths and science], and she enrolled herself in Te Kura and learnt it in 6 months. Because something she was not interested in as a 16-year-old at all, had immense purpose for her as a 23-year-old, and she learnt it real fast. (school 7)

Another way of helping students explore their interests is through workplace experience. One of the focus group schools is piloting an internship model in Year 10 and Year 11. Students go through the process of selecting, approaching, and arranging to visit a workplace they are interested in for one day a week. The hope is that this will allow them to trial different options and identify "passions, interests, stuff they'd never even thought of" (school 8). It will also help them develop important skills for life beyond school.

Focusing on the skills and capabilities for life beyond school helps students prepare for an uncertain and rapidly changing future

Focus group participants also talked about moving to a focus on the skills, capabilities, and dispositions that students would learn through a subject. These skills, capabilities, and dispositions are important for life beyond school and arguably help to keep options open in the face of an uncertain work future:

We're trying to shift the focus to what skills I'm learning. Because the skills themselves are more applicable going forward and can be combined with other subjects. So looking at a subject—I teach visual art—I say to them, 'You're going to learn project management skills, you're going to learn how to manage your own time, you're going to learn how to critique work, how to articulate thoughts.' (school 3)

It's really not that important what they're studying, it's that depth of their learning and their dispositional skills that they learn, and all of those things that they can then take into the world. If they've built those skills and those dispositions, then they can pick up so many pathways once they've left school. (school 10)

One teacher saw the emphasis on skills rather than content as an answer to the problem of the vocational/academic divide:

If you go down the line of defining your subjects by the skills they develop, then everything is clearly vocational, you know? (school 5)

However, there is a tension between this skills emphasis and the assessment specifications of achievement and unit standards. These assessment specifications tend to be focused on subject knowledge rather than skills and competencies:

If you can have subjects that maybe are a bit more skill focused, or a bit more around critical thinking and things like that, then you can design subjects to be able to open up the skillset that the kids are getting. But then there's that tension against—they're still being measured against this exam or whatever it is they're being measured against. (school 6)

In summary

"Keeping options open" has a range of meanings, depending on individual perspective. In the context of preparing students for an uncertain and rapidly changing work future, it could mean keeping both academic and vocational pathways open for as long as possible, choosing a wide range of subjects based on interest and passions, and focusing on skills and capabilities as well as content knowledge.

Does the system architecture in New Zealand schools unnecessarily limit future choices for students?

Our literature review discussed how New Zealand's school system is designed to be "sufficiently flexible to meet the needs of every student, no matter how diverse these might be". NCEA and *The New Zealand Curriculum* (Ministry of Education, 2007) are key components of the overall school system. Both are designed to respond flexibly to the learning needs of every student.

The literature review pointed out that this flexibility can be restricted by the way the system is enacted within schools. Timetable structures were given as an example of how flexibility can be compromised. The literature review found that school timetables are usually developed along disciplinary lines and privilege academic pathways. The review also discussed research that found subjects tend to "cluster" around a few well-defined pathways (science, arts, vocational, and so on).

During our focus group discussions, we asked whether participants felt these traditional "clusters" of subjects were evident in their schools. Many responded that they were moving away from this model and that their students were able to choose from a more "eclectic" mix (school 5). We also heard examples of schools that had revisited and restructured their timetables in innovative ways to allow this greater flexibility.

Another theme that emerged in the focus groups was the way that NCEA had tended to be enacted in schools, with a focus on assessment standards and a consequent "credit-gathering" mentality that could influence students' subject choices.

The traditional subject "clusters" are dispersing in some schools

There is no doubt that the clusters of subjects identified in our literature review, such as the science–maths cluster (three science and two maths), still exist in many schools. Reflecting on the traditional clusters, our focus group participants commented that some clustering is inevitable and is related to the constraints of the timetable, the requirements of UE, student and whānau perceptions about subjects, and students' dispositions and learning styles:

> I don't think it's anything we're doing to them that's making them pigeonhole, I think it's probably a little bit of both, about what my family perceive as being the really good subjects—all of the sciences and maths are really, really good. (school 3)

However, most schools represented in the focus groups were trying to find ways to introduce alternative, more flexible pathways. This included the possibility of combining subjects in new and alternative ways:

> I think it's sort of changed a little bit, over the last few years, where kids will pick things that are quite different, which makes timetabling a bit of a nightmare sometimes. They'll be a bit more, 'I want to do calculus and physics because I might want to do engineering, but actually I really like doing geography, so I'm going to do geography as well.' So there's that sense of not necessarily going down that traditional group of subjects, but just sort of more spread out across the different learning areas. (school 10)

One participant felt it was important to consider students' dispositions when considering pathways:

> If we're trying to keep things flexible and open, to allow them to go multiple pathways, we need to start thinking about their dispositional pathway rather than their subject pathway … you're focusing on the disposition and attaching subjects to that rather than the other way around. (school 7)

We heard that the process of offering more flexible pathways could be challenging. A leader from a traditional single-sex school told us that the school's journey towards more flexible pathways was precipitated by a recent ERO visit:

> We've just had our ERO visit at the beginning of the year, and one of their recommendations was that we need to look at alternative pathways in terms of our senior curriculum, full stop. And when I asked what that meant, they said well that was for us to decide. (school 9)

This leader talked about coming up with ideas for alternative courses "by default", as there was little other guidance available:

> … trying to engage teachers' passions and students' passions to do something that's not simply utilitarian in terms of getting a required number of credits to move on into the workforce. It might be something they actually do because they like it and enjoy it. (school 9)

Schools are experimenting with restructuring their timetables to allow a wider range of subject choice and pathways

Schools that wanted to introduce more flexible and alternative pathways grappled with the restrictions of the timetable:

> All the literature talks about individual student need and differentiation, but we're still working in an industrial model of timetables with a teacher–student funding ratio that just defies any attempt to try to do it a different way … there's a whole raft of things that just make that innovation excessively difficult— not impossible, but very difficult. (school 9)

The flip side of it is if you want to have a very broad curriculum, you have to try to be creative with your timetabling, because bums on seats are the other thing. You know, you haven't got an unlimited amount of cash to ensure that every subject runs, and things like that. So it's a real balancing act. (school 4)

Seven years ago, we started looking at our timetable that'd been apparently in place for 27 years. Over 18 months we changed our timetable, and so it's been in place for about 6 years now. One of the driving factors that we wanted to try and achieve is flexibility. Flexibility for having those traditional pathways, for those students who are going to be university bound (but that's not all our community), and having the opportunity to play, and interests, and important vocational pathways that a student's going to take. (school 12)

Our participants described two main types of timetable change: offering semester-long rather than year-long courses; and breaking the day into longer chunks of time (longer subject periods). Another key change was removing prerequisites from courses.

Semester-based courses

Several participants talked about "semesterising" courses—offering them in two separate half-year blocks, rather than as a whole-year course. The rationale is that this makes it easier for students to experiment with courses that they are interested in, or to change or pick up subjects:

It does mean that you can change. So if you realise that you shouldn't have dropped physics, you can jump back into physics and know that there is a chunk of learning to be had. And it might not be for University Entrance at that stage, but at least you will be able to add to your learning in physics. (school 2)

We're in a process of making a whole lot of changes here at the moment, and the last kind of final frontier of that would be to look at semesters, so that going into Year 11 or 12 there's still some value in me doing half a year of drama, even if that's not the career I'm going into. But it's still going to be something else I can add to my skillset. Or if I am really passionate about drama and it is going to be my career, I can just do two semesters of it. (school 3)

The idea of semesterising meant that we could introduce more tasters—just non-NCEA, interest-type things, as well as having your full year of history—semester 1, semester 2—that still exists. But if I only want to do it for a semester, then peel out and do something different, I can. (school 12)

Externally assessed standards, especially those that involve examinations, can constrain the introduction of NCEA semester-based courses. Examinations tend to happen at the end of the year, meaning that students who have only one semester of learning in the first half of the school year may be disadvantaged.

Schools talked about developing innovative courses that could be offered in a semester, that students could pick up for interest or for a complete change from their main subjects:

We've said to the staff, 'If your courses are good, they'll come. So get them creative, and get them to look at what you're delivering, and forget about this whole compulsory thing, and try and remove the barriers for entry requirements, and just deliver interesting stuff.' (school 12)

A lot of our boys can maybe select three or four subjects in Year 12, Year 13, but when it comes to the fifth and sixth subject, they're really being crowbarred into places they don't want to go … All of a sudden I've now got 31 single-term ideas from different staff members, and I'm going to put that in front of our Year 13s at the end of this term, just run a hypothetical test—if they would drop a subject in Year 13, which would it be and why? Which of these from this suite would you pick up, and why? And just see where the numbers fall and what it might look like if we try to do it in 2021. Because they get crowbarred into these courses they don't want to be in, and they're there for a year, and the teacher has them for a year, and just all the issues and problems that go with that. (school 9)

We've got many, many low literacy kids who want to stay on in school into Year 13, and the reality is they haven't got the literacy levels to access a lot of the traditional courses. So we are trying to develop those semester courses, things where kids can be engaged for short periods of time, instead of shoe-horning them into these courses that they've got no interest in and no chance of actually gaining anything worthwhile out of … it's providing the individual pathways. (school 10)

Longer subject periods

Traditional timetables can shut down pathways for students who are also engaged in work or study in another setting (such as a Gateway programme or a dual-pathway programme). On the day or days when they are out of school, they may miss key learning. Several schools represented in the focus groups had grappled with this problem. Again, they were at different points on the journey to solving it:

Because the majority of students are sort of working in their traditional subjects, if the timetable's not really constructed in a way which is conducive to students going out, those students who do go out then might miss a couple of English or maths lessons. And sometimes there are students who find it very hard to then catch up. That becomes quite difficult. So there's a gain from going out, and then a loss from being out … we're just constantly juggling with that all the time and it's … there's almost not quite a critical mass of students to make [an alternative timetable] feasible. (school 5)

One school had restructured their timetable to have three longer periods a day. Year 13 students have two lessons a week in each of four subjects, which means it is possible for them to have 2 days out of school without missing any subject periods:

You can re-structure your timetable. So we have three lessons a day. They have two lessons a week. Therefore I can structure it so that Year 13s have 2 days where they're not on our timetable at all. So it's not like they're missing something. So when they're actually there for the 3 days, they've got four complete subjects. (school 2)

Other schools had restructured their timetables in different ways, with a variety of longer and shorter periods.

Prerequisites

Many of the focus group schools are introducing more flexibility in choice by removing entry requirements (prerequisites) for individual courses. The focus group participants talked about this in terms of removing barriers: removing prerequisites allows students to pick and drop subjects, to change their mind about subjects, and to try things out without being locked in or out of a pathway. As discussed in our literature review, it is easier to drop prerequisites in some subjects than others. For example, maths and sciences have "vertical" structures and students need to build successive layers of knowledge. Our focus group participants described varying levels of prerequisites: some schools had removed them altogether and others had just begun experimenting with removing them in a few courses:

It sort of exists [prerequisites] in some areas for us, like maths and science, which are very much layered, and you can't come and pick up physics at Level 3 having not done it for a couple of years, but generally speaking, trying to—in social sciences and English and things like that are very good—you can come in at any stage knowing that your pathway may change as you progress through. So it's trying to remove those obstacles. And it's easier in some subject areas than others. (school 12)

In the last few years we've really pushed back on prerequisites. We've stripped out all the prerequisites at Year 11 apart from languages. And at Year 12 we insisted that departments justify any prerequisites. So if students want to sort of move across, they can do it … with the expectation that they could pick things up. (school 5)

> We've got to encourage our students to be broad in their thinking, and open to different experiences, because otherwise how do you know? You might find your passion, but if you've got prerequisites that are really narrow … you're going to just keep taking what you know. (school 4)

Some participants told us they had found that students could be strongly motivated to achieve when they chose to study a subject they had previously not engaged with:

> A motivated student might do better than someone who's slogged it out for three years. (school 3)

> We stayed strong in our belief that if they've got a desire to go and do a subject then they should be allowed to. And the data that we tracked in terms of academic achievement—that was a big thing with our teachers—showed no significant difference from those students that have stayed in a subject or haven't. (school 1)

Offering a wide variety of courses and removing prerequisites can help students keep options open and reduce subject "silos"

Some of the schools represented in our focus groups talked about moving away from a distinction between "academic" and "non-academic" subjects, where students choose either an academic or non-academic path (with subjects grouped along the lines of the "traditional" clusters). Instead, these schools are introducing a wide variety of courses, both academic and non-academic, coupled with removing prerequisites and "semesterising" their timetable. The goal is to enable and encourage students to experiment with a broad range of courses, "trying" different subjects before or instead of committing to them for several years. In our focus groups, participants from these schools spoke enthusiastically about this approach and how it was successfully allowing students to combine subjects in individual, eclectic ways rather than in traditional subject clusters or "silos":

> We've got to encourage our students to be broad in their thinking, and open to different experience, because otherwise how do you know? [what your interests/passions/pathways are] You might find your passions, but if you've prerequisites that are really narrow … you're just going to keep taking what you know. (school 4)

One participant told us that their school had removed NCEA Level 1 and replaced it with "combined projects" that involved a broad range of subjects. They felt this set students up to select more diverse choices at Year 12:

> We don't have subjects at Year 11, it's combined projects. That helps break down the silos, which means they're more open to picking a range at Year 12, rather than pigeonholing themselves at the end of Year 10. (school 2)

A focus on assessment and credit gathering can affect subject choice

Focus group participants also raised the influence of assessment on subject choice. NCEA assessment can drive learning; the assessment standards become the default curriculum. There is another indirect influence that manifests in student and parent tendencies to value courses and subjects based on the number of credits attached to them:

> The assessment has driven what goes on in the classroom from the inception of NCEA. So even though NCEA has that flexibility, and that flexibility was always built into it, it never actually transpired when it was translated into schools. The learning area just says, 'Right, okay, these are our standards, this is what we're going to design our programmes of study around, just teach to these assessments.' Trying to break that down and trying to break down what people have done for a number of years and what they deem is still really important, is difficult. (school 10)

We're going to do this because it's interesting and I've made it really vibrant' is substituted with 'We're doing this because we're doing this assessment attached to it, which is worth …' (school 9)

One leader described how their school had decided to stop offering NCEA Level 1. Instead, students can now take 2 years to achieve NCEA Level 2 as this is the more valuable qualification for them. In Year 11, students can still be assessed for a maximum of one standard per semester, although there is no requirement to do so. The changes mean that there are at least an extra 3 weeks of teaching time at Year 11 as there are no practice exams. Without being tied to standards, teachers "can go a lot wider and broader" and "tack on something of interest that we've never had the chance to do" (school 12).

Some participants expressed a view that some assessment standards are "sluggish" and out-of-date, and few of them assess the skills and competencies needed for the workplace, such as discussion skills. Our focus group participants told us that parents, students, and teachers all tend to focus on what is to be assessed and the number of credits that are attached. This sends an indirect message about which skills are important. Some standards are not updated frequently enough to keep pace with technological and other changes:

It's measured by a credit number. That's the value of the course, which is not true if you measure the value of the collaboration that may have occurred within whatever the programme was. Then you can say, 'This learner is highly collaborative and able to …', but our measures are not valued right. (school 8)

My subject—photography—went from analogue to digital when the NCEA standards started, and I was involved early on with all of that. But they're still exactly the same, nearly 20 years later. Then they got a digital presentation format … but we can't put sound with it. It's got all these other restrictions. So meanwhile, out in the real world, people put sound and movement and all sorts of things to communicate messages. So it's this really tight, inflexible notation of what can be counted. It's just so frustrating. (school 3)

In summary

The traditional school timetable tends to be constructed along disciplinary lines that reinforce academic pathways and align with the requirements of UE. This leads to "clustering" of subjects. As schools work to introduce more diversity, they are grappling with ways to restructure the timetable to support multiple and diverse pathways. Removing course prerequisites, introducing semester-long courses, and experimenting with longer subject periods are strategies that can widen student subject choices.

Does staying in school longer open more career/further study options? Does it close any options?

In our literature review, we pointed out that there is no straightforward answer to this question. For students who want to progress to university degrees, staying at school in Year 13 to gain UE is clearly important. We also pointed out that staying at school longer could hypothetically close down vocational options such an undertaking an apprenticeship.

Here, we revisit this question in the light of our focus group discussions. A clear theme from the discussions was the importance of helping students access a range of learning that will broaden their experiences and align with their interests. What is important is that students have access to choices that align with their post-school aspirations and that provide for flexibility in their future pathways. For some schools, this means offering a variety of pathways: academic pathways to university; pathways out of

school to tertiary study at other organisations; pathways to vocational learning; or pathways out of school to employment. Importantly, we heard evidence that some schools are working towards helping students to keep all these possibilities open.

For some students, staying at school at Year 13 keeps options open

Our focus group discussions confirmed that some students (and their parents/whānau) are focused on and committed to progressing to degree-level study at university. These students need to meet the requirements for UE and any specific entry requirements stipulated by the university. Staying at school at Year 13 is usually necessary to keep this pathway open.

Our participants also told us about students who were on "dual pathways" in Year 13, studying partly in vocational settings and partly at school. With careful restructuring of the timetable, it was possible for these students to keep both vocational and academic pathways open. For these students, staying at school at Year 13 kept more options open than either leaving to pursue a vocational opportunity such as an apprenticeship, or staying to focus purely on an academic pathway.

For some students, staying at school at Year 13 closes down options

We also heard of instances where students who had taken a purely academic pathway later found that university "was not for them". By this time, they were likely to have accumulated student debt. They might also have to go back to the beginning to re-open and explore vocational options.

Focus group participants told us about students whose parents or whānau had strong expectations for them to stay at school in Year 13, even when vocational or work-based options were more in line with their interests. Staying at school might close down opportunities for these students, especially if they did not achieve UE.

Another group of students chose to leave school at the end of Year 12 or part-way through Year 13 to continue an academic pathway with a non-university tertiary provider.

Partnering with tertiary providers can help keep more options open

A strong theme in the focus group discussions was how schools can work in partnership with non-university tertiary providers to help students access a wider range of pathway options. These pathway options do not entail staying only in school at a time when other options might seem more appealing.

Several focus group participants commented on their school's growing partnerships with local non-university tertiary providers such as polytechnics. They talked about students on dual pathways, who study partly in school and partly in tertiary organisations through initiatives such as Trades Academies.

Several participants said they had seen a growth in the take-up of dual-pathway courses by Year 13 students. These students typically study 2 days a week at a local polytechnic or other tertiary organisation, and the remaining time in school. If combined with a restructured timetable, these options can help to keep both vocational and academic pathways open.

Some students study vocational subjects in the tertiary environment, while others use this time to fill in gaps in their academic study:

> We've stopped offering travel and tourism as a subject in school. There's so much more to be gained from the learner travelling to […], going to a tertiary environment 2 days a week. The growth is phenomenal, and that is way better [for the students]. Because back at school, they're not pigeonholed doing easy subjects … they're able to engage in any of these vast array of subjects without being pigeonholed. So, if I'm out doing carpentry Monday, Tuesday, it doesn't mean that I'm in a 'special' class for English and maths the rest of the week. I'm able to be doing chemistry, classics, whatever else I want to do. (school 2)

We call them Pathway courses—so learners who maybe don't have any sciences, but decide they want to go into a medical pathway can go to … like we have kids going to [tertiary provider] 2 days a week at Year 13. So they can do the Level 3 Certificate of Health there and back at school they can still be getting UE. And it gives them that pathway into medical. A third of our senior school—Year 12 and 13s, probably—are in a pathway course … We give everyone the opportunity to get UE. And that's a challenge for us at the moment, to increase the number who do, to make learners see that Level 3 isn't the point to stop at. (school 2)

A leader from one school talked about students leaving school part-way through Year 13 to complete their academic studies at polytechnic:

A few students who've been inspired to go nursing in Year 13 realise, 'Oh, I haven't done Year 13 biology.' That's okay because then they can peel out and do a semester course, a stepping-stone course at […] to get them up to scratch within biology. They leave us part-way through Year 13 and do the semester course with […]. They are still going to start their degree in the normal timeframe. It doesn't have to just rely on school. (school 12)

Another participant commented on the flexibility of NCEA which means that "non-academic" students can leave school to complete their NCEA Level 3 in a different environment that may be more engaging for them:

One of the things I like about it is NCEA's not just a high school thing. So it's a perfectly accepted rationale with our students to go, 'You can still nail Level 3 at […]. Go and do what you enjoy instead of having one subject out of five with us that you are enjoying, and you're filling the rest of it … Go and, you know, start that career, or start investigating a career and go in full time, and leave us, because the NCEA's still continuing.' And there's way more acceptance of that now, and I love that flexibility that it's not just a high school qualification. (school 12)

Focus group participants called for more connection and collaboration between schools and tertiary providers:

That raises the bigger picture about schools and universities and polytechnics … there should be a much more seamless integration of all those institutions. Because the reality is schools can't offer all things for all people at all stages, sometimes it's much better for students to go and do 6 months in different places, because they're getting specifically the information and knowledge they require to be able to transition into that particular field. I'm a firm believer that the walls we need to knock down in schools are actually the exterior walls, not the interior walls … there needs to be a much more, greater, connection. The polytechs are starting to do it quite well. I'm not sure whether the universities have quite cottoned on. But we've got to remember we can only do so much, and we've only got the skills to do so much, and a lot of what our kids need is actually somewhere else. Future learning is going to be in multiple places. It's not just going to be on our sites. (school 11)

In summary

Whether staying at school in Year 13 opens or closes career or study options depends on the aspirations of the student and the kind of opportunities offered by the school. Students who have a clear desire to move to university usually need to stay at school in Year 13. Conversely, our focus groups suggested that some students who have a clear wish to move to work or vocational options may be better to leave school at the end of Year 12 to take up these options.

However, if the school can support students to keep both vocational pathway and academic pathways open in Year 13—for example through partnership with local non-university tertiary providers—this will extend students' future choices. This may be important, given that students may be uncertain about their future career at this stage of life.

How much variability is there in the system between schools, and what drives variability?

Our literature review did not find research that systematically quantifies between-school variability in the provisions made for subject choice.

However, our focus group discussions showed that there is variability between schools. We could describe this variability in terms of how far schools are along the continuum from traditional to progressive ("traditional" and "progressive" are the terms that focus group participants used when talking about their schools). Here, "traditional" means schools that offer the traditional split between academic/vocational pathways, with the academic pathway "well-lit" and the vocational pathway less esteemed; "progressive" means schools that have deliberately altered their systems and structures to encourage a broader range of options and keep a wider range of pathways open.

During the focus groups we talked about the barriers that prevent schools moving along the continuum to a more progressive stance. Some barriers are systemic (e.g., UE requirements). Other barriers relate to school variables, including the demographic makeup of the school community (including the socioeconomic makeup, related to school decile), attitudes of parents/whānau, and attitudes of staff. These factors in turn affect the amount of change that can be brought to bear on other constraining factors such as timetabling. The culture of a school and how it is perceived by its local community, its staff, and the parents and whānau whose children attend, can be hard to change.

Another factor that our focus group participants mentioned is school size—larger schools might be able to offer a wider range of subjects but are perhaps less likely to be able to introduce individualised pathways for all students:

> Because of the size of our school we can design the students' option choices and their timetable pretty much around what they've chosen, which I think, although it's a real pain at times having such a big school, it does mean that they can pretty much take everything and we can make it fit. There's enough numbers. If you were a smaller school, a big factor in subject choice would be, is it going to be economic for the school? (school 3)

In summary

Schools are positioned along a continuum from traditional to progressive in the subject choices and pathways that they offer. Traditional schools focus on academic pathways, with vocational pathways less esteemed; progressive schools have deliberately altered their systems and structures to encourage a broader range of options and keep a wider range of pathways open. Barriers to progression along this continuum include both systemic factors such as UE requirements, and barriers within the school such as timetabling. School culture, including the makeup of the local community and attitudes of parents and staff, is another strong influence.

3.

In conclusion

In this report, we have drawn on focus group discussions with leaders from 12 diverse schools to provide additional insights in response to the research questions listed on page 1.

The focus groups generated rich discussion that highlighted several key messages.

Schools need guidance on how to introduce more flexible pathways

Our focus group participants welcomed the opportunity to talk about subject choice with their colleagues from other schools.

There was a sense that schools are working in isolation to identify mechanisms for change. There was a lot of interest in sharing ideas; many schools are wrestling with these problems and need more opportunities to work with each other to find solutions. Several times in our discussion, participants commented they would like to follow up the discussion with others in the group so that they could learn from each other's experience of implementing specific changes. Participants made connections with each other and agreed to exchange resources.

Many schools are working on the complex problem of introducing alternative and more flexible pathways. It would make sense for them to have access to formal help and support, including more formal and structured ways of sharing knowledge and experience. There is an opportunity to support schools at the "progressive" end of the continuum, who are leading the change to more open, flexible pathways, to share their experiences directly with colleagues from other schools.

Agencies need to work together to reinforce key messages

Our focus group participants identified instances where messages from central education agencies were not "joined up" or coherent.

We are currently at an opportune time to review the way that pathways through and beyond schools are conceived, facilitated, and promoted. Both NCEA and vocational education have recently undergone transformational review and changes are ongoing. There is an unprecedented opportunity for these two reviews to work together in partnership to facilitate effective secondary–tertiary relationships and pathways. This would also be an ideal opportunity to review the UE requirements, which play a large role in shaping pathways throughout secondary school.

There is a need for more parent/whānau education about pathways and the future of work

Parent and whānau influence on choices relating to students' pathways constituted a strong theme in our discussions. Participants felt that many parents were out of touch with the current and future trends in employment, with expectations for their children based on their own experiences or on incomplete information. For example, many participants described parents who saw UE as the only viable option for their child, and who exerted considerable pressure for their children to study subjects recognised as being towards the top of the academic hierarchy.

There is an opportunity to develop and disseminate information and education for parents and whānau about the skills and abilities needed for the modern and future working environment. There is also an opportunity to help parents and whānau think more widely about occupations and careers, beyond the narrow, traditional "professional" fields such as doctor, lawyer, or engineer.

References

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APPENDIX 1:

Focus group topics, questions, and prompts

Q1 Keeping options open

The PC wants to explore how students can keep their options open, given the uncertain work futures they face.
- What does "keeping options open" mean to you?
- Is it a good idea in principle?
- Can it happen in practice?
- What might get in the way?

Q2 Clusters

The first part of this project was a literature review. We told the PC that the way subjects come together in clusters might be more important than individual subject choices. For example, here are the clusters for the Year 13 Learning Curves project (six schools). The Competent Learners project found similar clusters (50 schools).
- Do these patterns look familiar?
- Would we find these patterns if we came to your school? Why or why not?
- From your experience of secondary schools, what is driving this clustering?

Q3 Advice on choices
- Who helps students make pathways choices at your school?
- How many students, in your experience, make choices that inadvertently close pathways? What would help to stop this happening?
- How does careers advice work in your school? Is it effective?

Q4 Academic vs vocational pathways

Research suggests that there are deeply entrenched prejudices against vocational pathways and that academic pathways are the "well-lit" ones.
- Do you agree with this? Why or why not?
- How does this play out in school structures and practices (e.g., timetabling, deans' advice, subject prerequisites)?
- If you could change something to make pathway opportunities more equitable, what would it be?

Q5 The impact of NCEA

Let's talk about NCEA.
- How does NCEA impact on pathways choices for students at your school?
- Will the changes to NCEA help to address challenges we've been talking about? Why or why not?