

Landscape Architecture Student Choice: Profession or Provider?

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Secondary school students face many choices about tertiary education. Some will have a career path in mind and choose to attend an institution that offers a relevant programme, while others will choose a programme offered by an institution that has been selected for other reasons. This paper investigates whether students enrolled in one of the three accredited landscape architecture programmes in New Zealand first chose their career rather than first selected an institution. It also reports on the factors that influenced these choices. Ninety-seven first-year landscape architecture students were invited to complete a self-administered questionnaire. Seventy-five per cent chose a career in landscape architecture first, rather than first selecting an institution. In choosing a career, extrinsic motivations were more important than family or institutional influences, but institutional influences were more important than family or extrinsic factors when selecting a provider. The main factors influencing choice have implications for the profession; they also have implications for institutions regarding programme distinctiveness. Many factors play a role in these choices, including selection of subjects at school. Survey respondents reported on their choices of subject at secondary school and the usefulness of those subjects to their landscape architecture programme. A particular combination of secondary school courses may be a useful signal for students to consider landscape architecture as a possible career path.

Secondary school students face several choices when deciding to continue their education at a tertiary institution. Some will have a specific career path in mind and choose from the providers that offer a relevant programme. Others will select from programmes offered by a provider that is attractive to them, for instance, because of proximity or through family ties. These decision points affect both the landscape profession and the providers of professional programmes such as accredited degrees in landscape architecture.

This paper investigates the main drivers for first-year students of landscape architecture to enrol in an accredited programme. The setting for the study is the formal education system in New Zealand, which culminates in tertiary education programmes offered by eight universities and 18 institutes of technology or polytechnics. Students enrolled in one of the three accredited landscape architecture programmes in New Zealand were surveyed to establish if they had first chosen their career rather than first selected an institution and then decided to study landscape architecture.

The findings have implications for providers of accredited landscape architecture programmes and the professional organisation that supports landscape architects.

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EDUCATION

Models of student choice

Studies have been undertaken on student choice of career path in subject areas such as economics (Ashworth and Evans, 2000, 2001; Fournier and Sass, 2000) and the physical sciences (Cleaves, 2005; Hassan, 2008; Lyons, 2006; Simpkins et al, 2006; Stokking, 2000; van Langen et al, 2006), although little research has occurred on student choice in landscape architecture. These studies show that choice in education about individual subjects or thematic study at both secondary and tertiary levels is not simple and is influenced by various contextual factors (Foskett et al, 2008).

Marketing of post-secondary choices by schools and tertiary providers has a strong influence on decisions students make, according to Foskett et al (2008). The authors demonstrated that socio-economic status is an important factor in influencing student choice, with the leadership of the school, its nature and values reinforcing or counteracting that influence (Foskett et al, 2008). This is a different view from Lyons (2006), who feels the concept of 'cultural capital' is a better term for explaining the close relationship between parental attitudes and students' own explanations of the rationale for making a particular subject choice in the sciences. Lyons argues that family, social and cultural capital could also influence decisions about other subjects, although the approaches to teaching science meant it had less intrinsic value to students than most other subjects. Thus students were aware of the value of these subjects in retaining future career options, while others with higher levels of intrinsic value (such as drama or visual arts) were understood not to provide that same range of options.

Motivation in education is a significant component of choice arising from a complex interplay between intrinsic and extrinsic factors (Baboolal and Hutchinson, 2007; Hassan, 2008). Hassan (2008) describes both of these aspects: intrinsic, where students choose a programme or subjects because they are 'inherently interesting and enjoyable' (p 130) and extrinsic, where choice is made to achieve a specific outcome 'such as earning money' (p 130). Lyons (2006) suggests that, as potential career pathways begin to emerge or crystallise in senior years of secondary school, awareness develops further about extrinsic aspects such as pay or status, which begin to 'have a greater influence on their post-secondary decisions' (p 58).

The value of subject (programme) advice from individuals was rated by the respondents in Lyons's (2006) study as being from parents first, followed by peers such as senior students and friends. The advice of expert, school-based sources (teachers, course advisers) was least important to choice of subject (Lyons, 2006). Lyons (ibid) adapted the original *multiple worlds* model developed by Phelan et al (1991) and included mass media, as well as the original family, school and peer worlds, as important influences on decision making. Lyons believed his theoretical model of students' multiple worlds was better able to provide a foundation for understanding how students make transitions between these worlds, and how the complex relationships formed by these transitions affected choice.

In the case of business studies, Malgwi et al (2005) found that parents and course advisers at secondary school have little influence on students' choice of programme. Fergusson and Woodward (2000) disagree, and show that the socio-economic status of families is a more important factor.

In general, it seems likely that, in part, the lower university participation rate of young people from lower socio-economic status families may reflect the presence of attitudinal and economic factors that conspire to make university education less attractive to these young people than to their peers from socio-economically advantaged family backgrounds. (Fergusson and Woodward, 2000, p 34)

In regard to choice factors for tertiary providers, Holdsworth and Nind (2006) suggest that demand for a particular institution is related to the ways in which its attributes fit with the characteristics and needs of students. They further noted that:

... [a] significant persuading influence on the student's choice of university was the extent that it offered a degree option aligned with future career aspirations. Other universities were considered favorably where a particular student was considering a specialist course, unavailable locally. (Holdsworth and Nind, 2006, p 86)

Joseph and Joseph (1998) refer to the most important categories for provider choice as being academic and programme issues, cost, location and recreation facilities, and peer–family issues.

Payne (2003) prepared a useful summary of the factors that play an important role in making choices about subjects or programmes. She noted that those factors could be separated into three types of model: structuralist (choice is constrained by matters beyond the control of students), economic (decisions are based on rational assessments of potential returns) and *pragmatic rationality* (some rational choices are possible, but they are 'constrained by a realistic perception of opportunities' (Payne, 2003, p 1). Stokking (2000) notes that a common feature of these models is their assumptions about the degree to which individuals make rational decisions about options.

Education system in New Zealand

The setting or framework for such choices in New Zealand is a three-stage education system that features primary and secondary schools as the first two stages, usually preceded by early childhood education. Stage three, or tertiary, comprises higher and vocational education (New Zealand Qualifications Authority, 2015). The formal education system is compulsory for those aged six to 16, but earlier opportunities include kindergartens, which are aimed at children from around two to five years old, supported by other early childhood education options, such as play centre, Montessori or Rudolf Steiner programmes. Most children begin their formal education when they turn five and attend primary school (year 1). Primary school continues until children are 10 years old (year 6) when they can either move to intermediate school for two years (years 7 and 8) or stay at primary school for years 7 and 8 and then move directly to secondary education at a high school at around 13 years of age (year 9). Once children reach the age of 16 (usually year 11) they can leave school, although many stay until they are 18; this provides an opportunity for them to gain a university entrance qualification (normally taking them through to year 13).

The main qualification for secondary school students is the National Certificate of Educational Achievement (NCEA), which has three levels, is recognised by

employers and is used for selection by tertiary education providers locally and overseas. Students work through levels 1 to 3 of the NCEA certificate from years 11 to 13 (Ministry of Education, 2015). There are other pathways available to enrol in a landscape architecture programme, but this paper focuses on students joining after gaining a level 3 NCEA certificate at secondary school.

Although students pay fees for their respective courses, funding of tertiary institutions in New Zealand is largely derived from central government grants; the annual funding model is based on student numbers, which means that more students equals more money for the institution. Therefore, there is competition between providers for students, especially for generic programmes such as science or commerce degrees. Because these generic programmes are offered by several tertiary providers, students are likely to make their choice with reference to other factors, such as proximity or differentiation between the programmes in terms of their particular strengths or character. More specialised programmes, such as dentistry or veterinary science, are each only offered by a single university in New Zealand; limited places are available and the competition is therefore between students for those places.

Landscape architecture sits between those two extremes. Programmes offered by two of the eight universities in New Zealand (Lincoln in Christchurch and Victoria in Wellington), and one polytechnic (Unitec in Auckland), are accredited by the New Zealand Institute of Landscape Architects (NZILA) with reference to guidelines prepared by the International Federation of Landscape Architects (IFLA). Accreditation verifies that programmes meet the minimum standards outlined in the 2012 IFLA/UNESCO Charter for Landscape Architectural Education.

However, unlike dentistry or veterinary sciences, which are limited in how many students they accept, with three landscape programmes to serve a domestic population of just 4.6 million people in New Zealand, there is good capacity available to train professional landscape architects. Differentiation between the programmes offered by the three providers and competition for prospective students is therefore significant. In fact, two aspects are involved in this competition for students: the first is to attract students to the profession from other career choices they may be considering; the second is for each provider to attempt to claim a substantial share of those who have chosen the landscape profession.

Secondary school students face many choices of subjects to study. The National Curriculum requires all students to include English, mathematics and science in their first three years of study, as well as elective subjects, but for the final two years students can select from a wider range. To qualify for university entrance, students must have level 3 NCEA, with 14 credits in each of three approved subjects, 10 credits in literacy, 5 in reading and 5 in writing (at level 2 or above) and 10 credits in numeracy at level 1 or above (New Zealand Qualifications Authority, 2015).

Programme providers in New Zealand do not require specific NCEA subjects for those enrolling in landscape architecture. However, Elsworth et al (1999), who reviewed a series of Australian studies about subject choice in secondary schools,

concluded those choices supported a 'persuasive pattern of coherent associations between generic interests and domain-specific school subject preferences and choices' (p 299). Despite the different approaches to study design, methods of measurement and analysis, the authors reported that the results showed 'remarkable consistency' (ibid).

This paper answers an important question about the factors influencing student choice of a tertiary landscape architecture programme. The investigation considers whether or not students who have enrolled in an accredited programme of landscape architecture in New Zealand chose to aim for a career in landscape architecture first, and then decided on a provider for that degree programme, rather than choosing a provider first and then taking one of their available programmes that happened to include landscape architecture. The findings could enable both NZILA and providers to make decisions about their respective marketing strategies. A related matter identified during the research was the degree to which subject choice by first-year students of landscape architecture is different from first-year student choice nationally. The findings could allow an opportunity for tertiary providers to identify those students who may be more likely to choose a career in landscape architecture.

Method

All first-year students enrolled in the three accredited landscape architecture programmes in New Zealand in 2009 ($n = 117$) were eligible for the study. This is a typical annual number of landscape architecture students and has remained around this level for some time. Only those who attended class when the forms were distributed ($n = 97$) were invited to take part in the study; this distribution occurred on the same day at each provider when all of the students had a formal studio class. Confidentiality and anonymity were assured because respondent names were not collected. In line with normal social science research protocols, participation in the study was voluntary, and completion of the questionnaire form indicated consent to take part in the research.

Respondents were asked to indicate the main factors that had influenced their choice of landscape architecture as a career. They were also asked to specify the relative importance of those factors on a Likert-type scale (very important, important, slightly important or not important). The responses from those who rated a factor as being very important or important were aggregated. Other responses (slightly important or not important) were excluded because they indicated the particular factor was not a main component of their decision to enrol in a landscape architecture programme.

Respondents were also asked to list the subjects they took in year 13 at secondary school, to assess if any differences existed in respondent subject choice from national student population enrolments. Respondents were asked to rate the level of relevance or usefulness to their landscape programme of each of those subjects.

Data were analysed using SPSS 17. A chi-square test was used to determine whether or not the survey findings were significant in regard to students first choosing a programme or first choosing a provider. A correlation coefficient was

calculated to determine whether or not a significant difference existed between the subject choice of respondents and subject choice nationally.

Results

Of the students who attended class when the questionnaire was distributed ($n = 97$), just under half chose to participate in the study ($n = 44$), a response rate of 45.4 per cent. The mean age of respondents was 20.0 years ($SD = 4.35$); 54.5 per cent were female ($n = 24$) and 45.5 per cent were male ($n = 20$).

Landscape architecture was the career of first choice for 91 per cent of the respondents. Most respondents ($n = 33$) reported they chose their career first and then selected a provider for an appropriate degree programme. A chi-square test demonstrated this was a significant result ($\chi^2 (1, 43) = 12.30, p < .05$).

Figure 1 summarises the proportion of respondents who indicated a particular factor was a very important or important influence on their choice of landscape architecture as a career, with the factors listed in rank order. The same choices were also considered by respondents regarding factors that were very important or important to their decision to select a particular provider for their landscape degree. It should be noted that two of these factors, ‘close to home’ and ‘cost of living’, are only relevant to provider choice.

Career-based extrinsic factors thought to be important in the choice of landscape programme (work opportunities, lifestyle reputation, academic reputation) accounted for 48.1 per cent of the total number of factors identified by respondents. ‘Family and friends’ comprised 16.1 per cent of the total (family

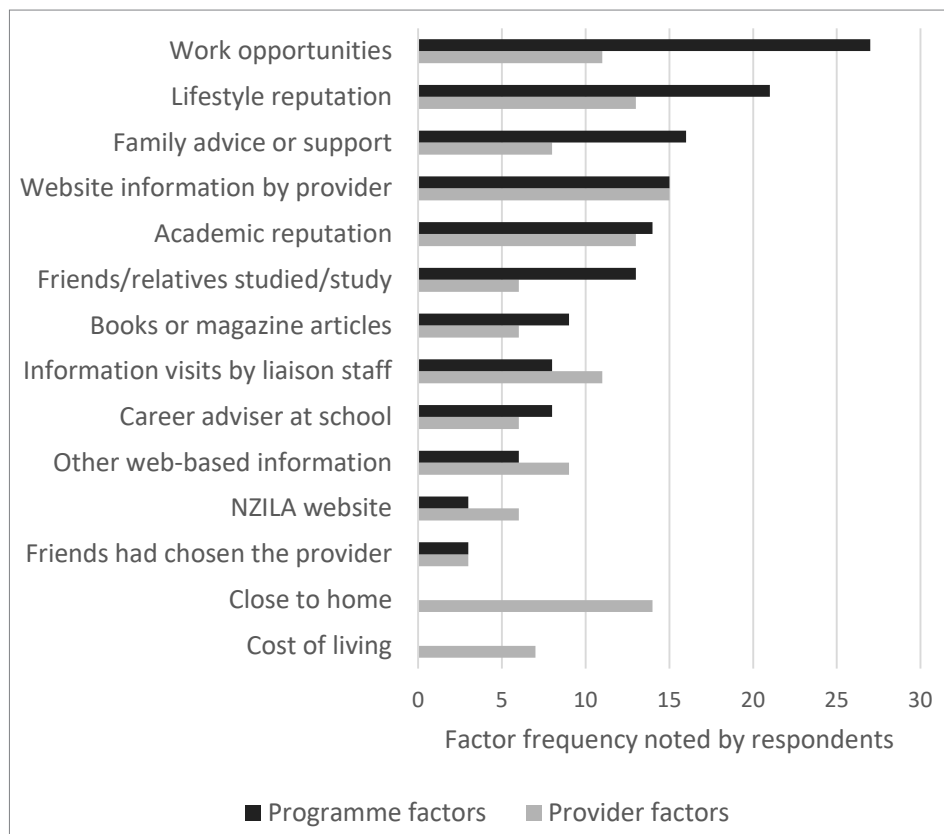


Figure 1: Choice factors – programme and provider

advice or support, friends/relatives studied/study landscape, friends said they were going to enrol). Those factors under control of the tertiary providers (website information, visits by liaison staff) also comprised 16.1 per cent of the total.

Factors reported as being important for choice of provider showed that 41.1 per cent of the total number identified by respondents were under the control of tertiary providers (website information, academic reputation, lifestyle reputation, visits by liaison staff). ‘Family and friends’ were more important to the choice of provider at 28.0 per cent than to the choice of profession (family advice or support, friends/relatives studied/study landscape, friends said they were going to enrol, close to home). Extrinsic factors (work opportunities, cost of living) were relatively low at 7.1 per cent.

A related question sought to establish whether or not respondents differed from the national population of first-year students regarding subject choice. The proportions of respondents and of students nationally taking the 10 subjects identified by the respondents as being most useful or relevant to their programme showed a significant difference (the null hypothesis was rejected; $r = 0.403$, $p = n.s.$).

Table 1 lists the size of the differences between uptake by respondents and by students nationally in the *top 10* subjects reported by respondents as being the most relevant or useful to their landscape programme.

The ‘difference’ column shows the ratio of the proportion of respondents taking each subject divided by the proportion of students nationally taking each subject. A ratio of 1.0 would show that the same proportions of respondents and students nationally were taking a particular subject; numbers greater than 1.0 show that proportionally more respondents took the subject than enrolments nationally, and numbers less than 1.0 show that proportionally fewer respondents than students nationally took the subject.

Figure 2 shows the same 10 subjects arranged from the highest ratio to lowest. This pattern of subject enrolments comparing respondents with their colleagues nationally points to a potential identifier of those who should perhaps consider landscape architecture as a career choice.

NCEA subject	Percentage of respondents stating subject useful	Percentage of students who took the subject		
		Respondents	Nationally	Difference ratio
Graphics	23.0	9.0	1.0	9.00
Geography	11.5	6.9	4.7	1.47
Design	10.6	4.8	2.9	1.66
English	10.6	11.2	14.5	0.77
Painting	6.2	4.3	2.9	1.48
History of art	5.3	4.3	1.4	3.07
Biology	4.4	4.3	3.0	1.43
History	3.5	1.6	2.7	0.59
Chemistry	2.7	2.7	4.6	0.59
Mathematics	2.7	8.0	12.9	0.62

Table 1: Top 10 useful subjects taken in year 13 according to respondents; comparison between uptake by respondents and students nationally in 2008

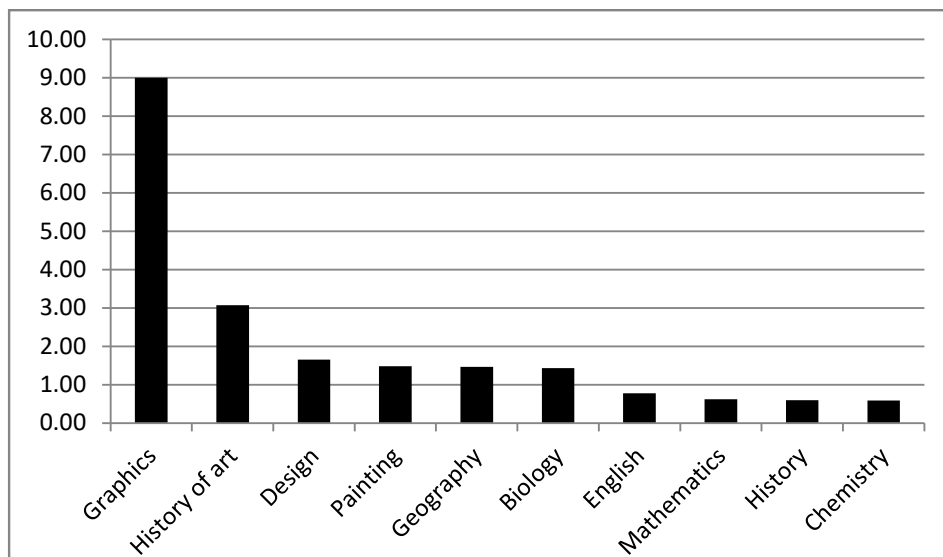


Figure 2: Respondents' top 10 useful subjects arranged by their difference ratio

Having established that those top 10 subjects were useful for distinguishing the respondent population from the national population, further analysis is shown in table 2. Here, the 10 subjects are grouped with reference to two factors: their uptake by the respondents in comparison with national data; and the level of support by the respondents for the relative usefulness of each subject to their landscape programme.

The subjects listed in each column in table 2 are grouped by difference between respondents and their peers nationally. The left-hand column lists subjects taken by proportionally more of the respondents than by students nationally. The right-hand column lists subjects taken by proportionally fewer respondents than students nationally. The two rows differentiate subjects by the relative value of each reported by the respondents. If more than 10 per cent of respondents reported a subject as being useful to their landscape programme, it appears in the first row, but if fewer than 10 per cent reported a subject as being useful to their programme, it appears in the second row.

The subjects that appear in the top-left quadrant and those in the lower-right quadrant can therefore be seen as distinguishing features of the respondents, when compared with the national student population, in terms of subject choice. It is interesting to note that graphics and design are more likely to be subjects selected for intrinsic reasons; history, chemistry and mathematics are more likely to be rejected for intrinsic reasons.

	Subjects taken by more respondents than students nationally	Subjects taken by fewer respondents than students nationally
>10% say useful	Graphics Geography Design	English
<10% say useful	Painting History of art Biology	History Chemistry Mathematics

Table 2: Top 10 useful subjects taken in year 13, grouped by difference and usefulness

Discussion

Most respondents (75 per cent) chose their career first before selecting a provider offering a programme leading to that career. While not unexpected, it supports the view that the particular characteristics or qualities of landscape architectural professional practice have a higher priority for the respondents than where they studied to gain access to their chosen profession. It is unclear whether the reasonably small number of first-year landscape students in New Zealand ($n = 117$ in 2009) is low because landscape architecture is only attractive to relatively few people, or whether most year 13 students are simply not aware of the profession; it may not be an obvious career choice. Shaffer's (2010) US study found that most students were not aware of the landscape architecture profession while in high school.

This finding contrasts with that of James et al's (1999) Australian study, which found students used a combination of course and institution factors when making their choices. However, their study was focused not on landscape architecture but on tertiary education in general. A more specific study by Shaffer (2010) found that more than half of the students interviewed (52 per cent) chose a provider first, while 48 per cent chose landscape architecture first. Shaffer notes that choosing a provider first, however, is constraining because it implies fitting a student's aspirations to the available courses within the provider. While the New Zealand students enrolled directly into a landscape architecture programme, in the United States of America students do not have to choose a major, for example, landscape architecture, until they have enrolled in their chosen provider (Study Group, 2015). This may explain the difference between Shaffer's findings and those of the present study.

The finding that students choose their career first is important for the three institutions offering accredited landscape degrees in New Zealand, because they must promote the distinctiveness of their programmes to continue to appeal to as many students as possible. Two reasons explain this importance. First, a 'numbers' funding model means total student numbers have an influence on the overall financial viability of an institution; more students equals more funding from central government. Second, a critical mass of students is required for a robust and healthy exchange of views and ideas, and there are implications for staffing levels.

The factors selected by respondents as being very important or important in making their decision about a career in landscape architecture and the provider that offers a programme to enable that career fall into three main groups: extrinsic motivation; family and friends; and tertiary provider. What the findings show is that extrinsic motivations are far more important than family or institutional influences on career choice, but institutional influences are far more important than family or extrinsic factors when choosing a provider. This indicates that providers have little influence on the choice of a career in landscape architecture by year 13 students. It does suggest, though, that once landscape architecture is selected, providers can potentially have quite an influence on the proportion of students who choose one institution over another.

The factor profile for choice of provider has a smaller range than the profile for choice of landscape architecture as a career (see figure 1). This more even distribution of factors that influence provider choice indicates no one particularly

strong reason exists for students to select one provider over another. While further investigation is required to understand this aspect of the landscape career path, it is possible students have decided that, now they are moving to tertiary study, they should perhaps take their studies more 'seriously' and therefore place more value on extrinsic factors.

A bigger range of career factors indicates broader consensus among the respondents on the reasons to choose a career in landscape architecture, with a focus on work opportunities, lifestyle reputation and family advice or support. It would be interesting to establish if such a profile difference also applied to students nationally who chose a more generalist programme, such as commerce or science.

Limitations

The low response rate (45.4 per cent) was a limitation to the study and may have introduced selection bias. A further limitation arises from difficulties in disaggregating data about year 13 subject enrolments from the Ministry of Education and New Zealand Qualifications Authority websites. The respondents had 40 subjects to choose from for their final year of secondary school in 2009, listed on the New Zealand Qualifications Authority website as being approved to count towards the requirements for university entrance. Each subject comprises a series of unit standards that students could choose from to make up the appropriate number of required credits. National-level subject enrolments were thus calculated by combining the unit standard enrolments that most closely related to each subject taken by the respondents, although the particular unit standards taken by each student for particular subjects can vary.

Conclusion

The finding that landscape architecture students choose their career path first and then consider which provider to use to achieve that goal means the professional landscape architecture organisation in New Zealand (NZILA) is in a position to have more influence on attracting prospective students to the profession than do providers. However, once the choice is made to become a landscape architect, providers have influence over which institution students choose for their studies. Programme distinctiveness, and the ways in which that message can be communicated to prospective students, is thus likely to have an effect on student choice.

What this means for NZILA is that landscape architecture should be highlighted as a career choice and information about the profession provided to year 12 and year 13 high school students, when tertiary education decisions are being made. NZILA has several options, including targeting those particular years of students by providing guest speakers to schools; encouraging NZILA members to support school initiatives to engage with their learning environments, such as supporting parent or teacher proposals to broaden the ways in which particular curricula could be delivered; or providing work experience opportunities.

What this means for providers is that more research into decision making by students in New Zealand is needed, perhaps using a survey instrument to establish why students choose landscape architecture, because, as noted by

Harvey-Beavis and Elsworth (1998), students' interests are critical in defining demand for tertiary education.

The suggestion that year 13 subject choice could be one predictor of career choice is not so clear cut, because providers do not require particular clusters of subjects for enrolment. However, the survey findings show those taking graphics, geography and design should at least consider a career in landscape architecture because respondents reported the usefulness of those subjects to their landscape programme. Alternatively, it could be argued anyone not taking history, chemistry or mathematics should also consider landscape architecture. This would likely involve quite large numbers of students nationally, however. Therefore, it may be more reasonable to suggest that a combination of those subject choice characteristics is more likely to be helpful; that is, students who are taking graphics, geography and design, but without history, chemistry or mathematics, should consider such a career. Whether this matching of subject choice and potential career is best accomplished by the school (for example, through careers advice) or the provider (for example, by liaison staff or better-targeted publicity) needs further investigation. It would be interesting to survey those who choose these particular subject combinations in high school to establish if anything else distinguishes them as a group. This information could then help NZILA or providers to highlight the opportunities for these students to consider a career in the landscape architecture profession.

Figure 2 shows it may be important for providers to examine the relationship between subject choices in secondary school and career choice. Establishing the number of year 13 students nationally who have a subject profile similar to that found for the respondents would be a useful next step. Bringing landscape architecture to the attention of this group, if it were possible to do so, could broaden the options they may consider for tertiary study. It is clear NZILA has a more significant role here than the providers. However, programme distinctiveness and the ways in which that message can be communicated to prospective students by providers are still likely to influence student choice.

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