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School based experiences as contributors to career decision-making: findings from a cross-sectional survey of high-school students

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Abstract This paper is based on a study examining the impact of young people's backgrounds and educational experiences on career choice capability with the aim of informing education policy. A total of 706 students from secondary schools (Years 9–12) in New South Wales, Australia took part in an online survey. This paper focuses on the differences found between groups on the basis of their educational experiences. Participants who were uncertain of their future career plans were more likely to attend non-selective, non-metropolitan schools and were more likely to hold negative attitudes towards school. Career 'uncertain' students were also less likely to be satisfied with the elective subjects offered at their school and reported less access to career education sessions. It is concluded that timely career information and guidance should be provided to students and their families in order to allow them to more meaningfully make use of the resources and opportunities available to them with a view toward converting these into real world benefits.

Keywords Youth aspirations · Career education · Career development · Post-school transitions · Career certainty

Introducing a "first-world" problem

Globalisation and the outsourcing of low-skilled labour to developing countries has contributed to a sustained increase in youth unemployment in many Western

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developed countries, including Australia (Tomlinson 2012). Whilst a number of government programs have been trialled with the aim of increasing academic achievement and degree qualifications, policy responses to the problem of low attainment, early school leaving and subsequent unemployment are becoming increasingly punitive (Graham et al. 2015). The new Australian government, for example, is currently proposing to withhold income support for all persons under the age of 30 who are not engaged in employment or education for a period of 6 months each year (Commonwealth of Australia 2014). Whilst this proposal may encourage some young people to remain in school for longer and/or to obtain higher qualifications than they otherwise would, it will not help to improve the availability of jobs, the shortage of which is exacerbating youth unemployment rates.

In the eyes of government, too many young people are leaving school each year without a clear and achievable career plan in an increasingly competitive labour market and this leaves them more vulnerable to unemployment. According to McMillan and Marks (2003), young people who do not transit to full-time work, education or training after finishing school are at significantly greater risk of not securing full-time employment in the future. The longer that young people are unemployed after finishing school, the harder it is for them to enter the workforce (Brotherhood of St Laurence 2014a). In addition to challenges in finding employment, these young people also tend to have poorer health, are marginalised from the communities in which they live, and are over-reliant on income-support payments (Brotherhood of St Laurence 2014a). Due to the decreasing number of entry-level employment opportunities, as well as high levels of competition for available jobs, youth unemployment rates for 15–24 year olds is as high as 20 percent in some regions of Australia (Brotherhood of St Laurence 2014b), and "[a] growing number of young people are in danger of being locked out of stable employment for the long term" (Brotherhood of St Laurence 2014a).

Recent policy responses

To engage with this problem, government policy has increasingly focused on raising the aspirations and achievement of young people in an effort to get them to think about their futures, whilst incentivising participation in higher education and training. The aspirations of students from disadvantaged backgrounds is a principal focus of recent policy reforms due to some researchers arguing that these young people are aspiring too low (Polidano et al. 2012). The question remains, however, as to whether higher aspirations are sufficient in and of themselves and whether these policies are targeting the right students or practices that they need to in order to be effective.

Indeed, the aspirations of disadvantaged youth may not be the core problem. For example, Graham et al. (2015) have found that disadvantaged young people do have aspirations but these may not involve going to university. They argue that a growing disconnect between some young people's aspirations and the academic school curriculum, together with a 'policy preoccupation' with university education, is widening gaps between school, training and employment and fuelling disengagement from school, leading to even greater difficulties in post-school transition.

Similar assertions have been made by Gale (2014) who argues that whilst students of low socioeconomic status (SES) may have aspirations that are different to those promoted via the 'neoliberal imaginary', these aspirations are still legitimate and require support. Bok (2010), however, maintains that low SES students often *do* have high aspirations but their realisation is comparable with doing 'a play without a script' (p. 175) due to a lack of cultural capital, networking opportunities, and information about pathways to aspired careers.

An increase in the availability of career related information may not improve matters for the growing number of young people who experience difficulties in post-school transition, however. Over the last two decades, several career information resources have been developed, including the Australian Blueprint for Career Development (Department of Education, Science and Training 2005), the Australian Government's "My Future" website (www.myfuture.gov.au) (McMahon and Tatham 2008), and 'Career Bullseye' posters (Australian Government Department of Education 2013) to name just a few. Despite an associated growth in online career information, youth unemployment continues to rise (Australian Bureau of Statistics 2014), as does the number of young people who are not in education, training or work (Tomlinson 2012). The question therefore remains as to whether current education policies are appropriately directed both in terms of audience and subject.

In our earlier work, we have argued that such policies are based on at least four assumptions: first, that career choice capability is a problem of individual agency; secondly, that the dissemination of career information can empower students to act as 'consumers' in an unequal job market; thirdly, that agency is simply a question of will; and finally, that school education and career advice is of equal quality, distribution and value (Galliott and Graham 2014a, b). This paper engages with the fourth assumption by investigating differences between groups (career 'certain' and career 'uncertain' secondary school students) in terms of their educational experiences. First, however, we explain how career uncertainty is perceived in the research literature from the dominant field in this area of research (psychology) and offer what we believe is a conceptual lens better suited to understanding potential influence from the school environment.

Conceptual framework

Career indecision has been intensively researched since the 1950's (Super 1957) and is described as problems that a person might experience during the career decision-making process (Brown and Rector 2008; Osipow 1999) or as an individual's inability to make a decision in relation to his or her education and/or occupation (Kelly and Lee 2002; Guay et al. 2003; Leong and Chervinko 1996). Gati, Krausz and Osipow (1996) believe that career indecision can happen because of internal or external effects, such as students' lack of career decision-making readiness or if an individual lacks access to appropriate information.

While career indecision is a temporary state and part of the normal career determination process (Creed et al. 2006), some individuals experience chronic career indecision, which is also called *career indecisiveness* (Fuqua and Hartman 1983; Hartman and Fuqua 1983). Di Fabio et al. (2013) argue that career

indecisiveness can be associated with personal characteristics such as high anxiety, obsessive–compulsive tendencies, low self-esteem, neuroticism, perfectionism, procrastination and low self-efficacy. The existing research, however, predominantly focuses on personal traits of career uncertain students or in rare cases on environmental influences, such as the availability of career guidance information. Research combining both is scarce. This leaves educational policymakers with only partial information about the reasons behind the difficulties experienced by different student groups.

This doctoral research project draws on Sen's (1995) theory of human capability to examine career choice formation as a *complex developmental process*; one that is influenced by personal characteristics and background, as well as broader environmental factors. One of Sen's major contributions to political philosophy was to make it clear that people possess different abilities which can affect their conversion of *means* into *ends*, which has succeeded in focusing attention on inequalities in capability and how this contributes to outcome inequalities. Importantly, 'capability' is *formative*; it is influenced by a myriad of factors including birth circumstances, as well as developmental contexts and access to opportunities. Therefore, whilst Sen's work has been mainly applied to development economics, his theory also has significant implications for education.

For example, as a 'universal' public good, the provision of education is often assumed to have equal benefits for all recipients; however, researchers in education note that education has several unique properties that make it more unstable than is generally assumed (Saito 2003; Unterhalter 2003; Walker 2006). For example, the quality and breadth of a child's educational experiences, in addition to their family background and prior-to-school learning experiences, can affect their access to the academic school curriculum. Differences in access together with the inadequate provision of supports (which are also imperfectly allocated) can lead to further difficulties in access, dictating what children do and don't get out of the 'good' in question.

School education is also highly variable with significant differences between systems, between schools and even between classrooms in terms of what is taught to whom and how well (Anyon 1981; Apple 2004; Luke 2010; Nolan and Anyon 2004), all of which contribute to differences in student capability. As similar findings of a 'postcode lottery' have been reported by researchers in the field of career education and development (Langley et al. 2014), it follows that an increase in the availability of career related information may not lead to equal career opportunities if that information differs by school context or if students differ in their ability to convert these resources into actual career choices. Both parts of the 'capability' equation—*personal characteristics* + *educational experiences*—are therefore vital in determining an individual's capability to make a career choice (for a comprehensive discussion of the theoretical framework underpinning this study, see Galliott and Graham 2014a).

This study examines the impact of young people's backgrounds and educational experiences on career choice capability with the aim of informing education policy. The first part of this investigation, which has been published elsewhere (Galliott et al. 2013), enquires into the effects of students' backgrounds. In this earlier phase

of the research, students' perceived academic and problem-solving abilities, parental occupation, and language/cultural backgrounds were found to influence career determination to a significantly greater extent in comparison to years of schooling and individual characteristics, such as gender and age. Findings indicate, however, that further research investigating differences between students' educational experiences, particularly in terms of their quality and relevance to various student groups, is vital to enable the development of more effective educational policies and to support students in their career determination. This paper therefore attempts to answer the following research question: what characterises those students who are not yet ready to envision and enact their desired future career choice in terms of their educational experiences?

Method

Participants

This study employed a cross-sectional survey with 706 secondary school students attending Years 9–12 in twelve schools in New South Wales, Australia. The survey was administered online and included 66 questions, 29 of which were compulsory and the other 37 were displayed (or not) depending on participants' previous responses. Questions included demographical, behavioural and attitudinal items and attempted to increase the interest and engagement of participants by incorporating nominal, interval and ratio scales, as well as visual illustrations (where appropriate) (Burns and Bush 2010). The participating schools were selected using stratified simple random sampling, where each of the four strata represented different levels of advantage as defined by the Index of Community Socio-Educational Advantage (ICSEA).

ICSEA was developed by the Australian Curriculum Assessment and Reporting Authority (ACARA), and assesses all Australian schools on a scale from 500 to 1300 (from extremely educationally disadvantaged to very educationally advantaged) with mean of 1000 and a standard deviation of 100. As the majority of Australian schools are located within two standard deviations of the mean, prospective participants were invited from schools with ICSEA scores from 800 to 1200. The sample was representative of the ratio of government to non-government schools currently observed in the state (Australian Bureau of Statistics 2013), and included academically selective, as well as comprehensive schools, co-educational and single sex schools, as well as those in metropolitan, outer metro and regional areas (see Table 1).

Students participated in the survey in the 3 month period from October to December 2012 (Term 4 out of 4 school terms). Students in Years 9–12 were encouraged to complete the survey because by Year 9 students are required to select elective subject choices, which can stream them into certain career trajectories. The proportions of Year 9, 10, 11 and 12 in the sample were 22.2, 31.2, 14.2, and 29.3 % respectively. In addition, 3.1 % of respondents had just completed Year 12 at the time of participation. The majority of the respondents were 15, 16 or 17 years old (26.6, 28 and 25.5 % respectively), 11.2 % of participants were less than 15 years

Table 1 Percentage of participants completing the survey by type of school

ICSEA value	% of participants	School code	School sector	Selective/non-selective	Single sex/co-educational	Geographic location
1101–1200 (Mean +2 SD)	43.8	School 12	Non-government	Non-selective	Single sex	Metropolitan
		School 11	Government	Selective	Co-educational	Metropolitan
		School 10	Non-government	Non-selective	Single sex	Regional
		School 9	Government	Selective	Co-educational	Metropolitan
1001–1100 (Mean +1 SD)	25.5	School 8	Non-government	Non-selective	Single sex	Metropolitan
		School 7	Non-government	Non-selective	Single sex	Outer metro area
		School 6	Government	Non-selective	Co-educational	Outer metro area
Mean = 1000						
901–1000 (Mean −1 SD)	20.8	School 5	Government	Non-selective	Co-educational	Outer metro area
		School 4	Government	Non-selective	Co-educational	Outer metro area
		School 3	Government	Non-selective	Co-educational	Metropolitan
800–900 (Mean −2 SD)	9.9	School 2	Government	Non-selective	Co-educational	Outer metro area
		School 1	Government	Non-selective	Co-educational	Metropolitan

old, 7.6 % were 18, and the remainder (1 %) were 19 or older. The majority of the respondents were girls (64.4 %), born in Australia (81 %) and had at least one parent born outside of Australia (43.3 % of participants had both parents born overseas and 17.6 % had one of their parents born overseas). The most common language spoken at home among the participants was English (59.1 % of respondents reported speaking English only and 26.8 % speaking English and at least one other language). The other most common language groups included Asian (24.5 %), Middle Eastern (9.5 %), European (3.4 %) and Pacific (3.3 %) languages.

Measures

Earlier analyses of this sample's characteristics and family background (Galliott et al. 2013) found no significant differences in career certainty relating to age, school year, gender, whether the participant and his/her parents were born in Australia, and whether the participants' parents were employed. Being 'career uncertain' was, however, associated with an English-only language background, lower socioeconomic status of parental occupations, lower self-assessment of academic achievements, and lower self-efficacy. However, if a person's career choice capability *is* influenced by their educational experiences, as we suspect may be the case, these findings can only partially explain students' difficulties in career determination. Thus, for the purpose of this paper, the following variables relating to the educational experiences of 'career certain' and 'uncertain' students were analysed:

Career certainty

Participants were grouped into 'career uncertain' and 'career certain' clusters using two variables. Those students whose responses to the question 'What would you like to do when you finish school' included 'nothing' or 'not sure' were allocated to the 'career uncertain' group. The remaining participants who expressed an intention to 'get a job', 'get an apprenticeship', 'go to Technical and Further Education (TAFE)/ College' or 'go to University', comprised the 'career certain' group. Group membership was then tested via a scale asking students to rate their level of certainty from 0 to 100 % (Galliott and Graham 2014b).

School sector/type

Participating schools received unique links to the study survey, which allowed us to identify the school each participant was from. Specific information about the school, such as its location, whether the school was selective or non-selective, government or non-government, and whether it was boys', girls' or co-educational school, was obtained from the Australian government's *MySchool.edu.au* website.

Exposure to career-education

Variables related to students' school experiences associated with career development were largely inspired by focus group discussions previously conducted as part

of the same study (see Galliott and Graham 2014b). Up to three questions were analysed for the purpose of this paper:

Participation in career education classes/sessions: Respondents were asked *'Did you have any of the following career education classes/sessions?'* and were provided with multiple response options including 'career education classes', 'meeting(s) with career adviser at school', 'visit(s) of University(ies) representatives to my school', 'attending an open day at University', 'visits of TAFE representatives to my school', 'attending an open day at TAFE', 'my parents visited/called school to discuss my career options', 'none of the above', and 'other' (with a comment box).

Participation in school organised work experience: Participation in school organised work experience was assessed with two variables. Firstly, students were asked *'Have you completed school organized work experience?'* (Yes/No). Further, those who answered 'yes' to the previous question were then asked *'Why did you choose to do work experience?'* The response options included 'I was interested in it', 'wanted to test my ideas about future careers', 'compulsory at my school', 'seemed like a good idea at the time', 'couldn't think of anything else' and 'other' (with an open-ended response box).

Students' attitudes towards school and school learning

As previous research has demonstrated a strong relationship between attitudes to school, academic achievements and aspirations (Abu-Hilal 2000), participants were asked a number of questions to gauge students' attitudes towards curriculum subjects and school in general.

Reasons for choosing elective subjects: Students could select multiple options out of the following reasons for choosing their electives: 'they are interesting', 'good teacher', 'I prefer these subjects to other options', 'I need them for my planned study/career', 'not enough other choices', 'somebody recommended them to me', 'I'm good in these subjects' and 'other' (with a comment box).

School liking: Students were asked *'Do you like school?'* and provided with five response options from (1) 'I enjoy going to school' to (5) 'I hate school'. Due to small numbers of the 'career uncertain' participants, the responses on this question were re-coded in the process of data analysis to a smaller scale. Combined responses 1 and 2 became (1) 'like', option 3 was coded as (2) 'neutral' and answers 4 and 5 comprised (3) 'dislike' group of responses.

Reasons for school liking: All participants were asked *'What do you like about school?'* and had an opportunity to select more than one option out of 'everything', 'being with other students', 'teachers', 'learning new things', 'doing new things', 'technologies/resources', 'sport/PDHPE (Personal Development, Health and Physical Education)', 'social events (school trips, camp, fun activities etc.)', 'none of the above', and 'other' (with an open-ended response box for an additional specification).

Reasons for NOT liking school: As per indication of reasons for liking school, all students could select multiple causes for disliking school. Participants were asked *'What don't you like about school?'* Response options included 'everything', 'being with other students', 'teachers', 'learning new things', 'doing new things', 'technologies/resources', 'sport/PDHPE (Personal Development, Health and Physical Education)', 'lack of social events (school trips, camp, fun activities etc.)', 'none of the above', and 'other' (an open-ended comment box was provided).

Favourite subjects at school: Participants of the survey were able to select their favourite subject areas out of the following options: 'English', 'Mathematics', 'Science', HSIE (Human Society and Its Environment)', 'Sport/PDHPE', 'Creative Arts', 'Technology', 'Languages' and VET (Vocational Education and Training). They could also select 'none of the above' and 'other' with an opportunity to provide specification in an open-ended response box.

Procedure

This study received HREC approvals from Macquarie University and the New South Wales Department of Education and Communities.[1] Information about the study with a link to the online survey was placed in participating school newsletters and, in some cases, distributed by the schools via student email. Participation in the survey was entirely voluntary and parents or guardians could withdraw their child or children from the study at any time.

Data analyses

The survey data was analysed using IBM SPSS Statistics 22 software. As the main aim of this phase of the research project was to compare the educational experiences of students with different levels of career decision readiness, students' responses to the question 'What would you like to do when you finish school?' were coded as 'career uncertain' and 'career certain'. The survey responses of these two groups on a variety of other questions were then analysed using descriptive statistics and inferential tests.

Chi square tests of independence were used for testing associations between career certainty and categorical educational experience variables, whereas independent samples *t* tests were employed for continuous variables. In order to control the false discovery rate at alpha = .05, significant overall Chi square tests were followed by Bonferroni adjusted *z* tests for multiple comparisons of the column proportions (Hochberg 1988). Cohen's *d* was used to provide measures of effect size for *t* tests, whereas Cramér's V was provided to indicate effect size for Chi square tests. In addition, significant results on Chi square tests were accompanied by odds ratios.

[1] Whilst applications to conduct research in Catholic schools were submitted to several Catholic dioceses, approval was not granted.

Results

Out of a total of 706 respondents, 80 students were not included in the data analyses as they dropped out of the survey before indicating their career plans. The exclusion of these students from the data analysis had minimal impact on sample composition.

Five hundred and eighty two participants indicated that they held clear intentions regarding their planned post-school career options and were grouped into the 'career certain' cluster. Forty-four students were allocated into the 'career uncertain' group. Before comparing the educational experiences of the 'career uncertain' and 'career certain' groups, the differences in their responses to the question *'How much certainty do you have in choosing your future career? Please indicate on a sliding bar… (from 0 to 100 %)'* were examined using an independent-samples *t* test. The results, $t(624) = 5.65$, $P < .0005$, $d = 0.86$ (a large effect size Cohen 1988), confirmed a significant difference between the groups, where 'career uncertain' students had a statistically lower level of certainty concerning their future career ($M = 38.73$ %, SD = 31.14) in comparison with 'career certain' participants ($M = 64.68$ %, SD = 29.27).

As reported earlier, no differences between groups were found in relation to gender, year group, age, whether participants and their parents were born in Australia, and whether their parents had jobs. The following section examines the contribution of educational experiences, including school sector and type, students' exposure to career education, and students' attitudes towards school and school learning. Other variables associated with educational experiences, including the subjects in which students experienced the most difficulty and self-reported school attendance, were analysed with Chi square tests, but were not significantly associated with career certainty (all $P > .05$).

School sector/type

Being from a school located outside the metropolitan area was significantly related to students' career certainty. These results, however, should be considered with caution as the sample included only one regional school and in the Chi square analysis one of the expected cell frequencies was smaller than 5 (see Table 2).

Table 2 Number and percentage of 'career certain' and 'career uncertain' students by school type

School type	Number (and %) within career 'Certain'	Number (and %) within career 'Uncertain'	χ^2 value	*P* value	Cramér's V
Metropolitan	384 (66.0)	18 (40.9)	12.344	.002*	.140
Outer metro area	159 (27.3)	19 (43.2)			
Regional	39 (6.7)	7 (15.9)			
Selective	175 (30.1)	6 (13.6)	5.374	.020	.093
Non-Selective	407 (69.9)	38 (86.4)			

* One of the expected cell frequencies is smaller than 5

The relationship between career certainty and school type was similarly examined with a Chi square test of independence. Being in a selective school was significantly related to career certainty, with a higher proportion of 'career certain' than 'uncertain' students from selective schools, and conversely a higher proportion of 'career uncertain' than 'certain' students from non-selective schools (both $P < .05$, small effect size). Based on the odds ratio, the odds of being 'career uncertain' were 2.72 times higher for students from non-selective schools compared with selective schools.

No significant relationship was found between career certainty and school sector (government or non-government), or career certainty and school type (single-sex or co-educational) (both $P > .05$).

Exposure to career-education

The relationship between career certainty and school-organised career education was examined with a Chi square test of independence followed by Bonferroni-adjusted comparisons of column proportions. Having had meeting(s) with a career adviser at school was significantly related to career certainty, with a higher proportion of 'career certain' than 'uncertain' students being among those who met with their school career adviser (Bonferroni-adjusted $P < .05$, small effect size). The odds of being 'career certain' were 2.12 times higher for students who had met with their career adviser in comparison with those who did not. Other career session types (i.e. career education classes, visits of Universities and TAFE representatives, attendance of open days at Universities and TAFES) that were listed in the questionnaire were not significantly associated with career certainty (all $P > .05$). Conversely, a higher proportion of 'career uncertain' than 'certain' students indicated that they had not accessed any of the listed options of career education classes or sessions ($P < .05$, small effect size) (see Table 3). Based on the odds ratios, the odds of being career 'uncertain' were 2.54 times higher for students who did not have any career education experience compared with students who did.

A significantly higher proportion of 'career certain' than uncertain students reported participating in work experience activities ($P < .05$, small effect size). According to the odds ratios analysis, the odds of being 'career certain' were 1.17 times higher for students who had completed school organised work experience compared with those who did not. Of those who did participate in school organised work experience, significantly higher proportions of 'career certain' compared with 'career uncertain' students explained that they did so because they were 'interested in it' ($P < .05$, small effect size) (see Table 3). The odds of being 'career certain' were 2.40 times higher for those who chose to participate in school organised work experience because they were interested in it. Other reasons for doing work experience that were listed in the questionnaire, such as wanting to test their own ideas about a future career or because work experience was a compulsory requirement at their school, were not significantly associated with career certainty (all $P > .05$).

Table 3 Number and percentage of 'career certain' and 'career uncertain' students in significant association with their career education

School organised career education	Number (and %) within career 'Certain'	Number (and %) within career 'Uncertain'	χ^2 value	*P* value	Cramér's V
Participation in career education classes/sessions					
Meeting(s) with career adviser at school (Yes)	205 (35.2)	9 (20.5)	3.966	.046	.080
Meeting(s) with career adviser at school (No)	377 (64.8)	35 (79.5)			
None of the above (Yes)	154 (26.5)	21 (47.7)	9.186	.002	.121
None of the above (No)	428 (73.5)	23 (52.3)			
Participation in school organized work experience (Yes)	250 (43.9)	12 (27.3)	4.594	.032	.087
Participation in school organized work experience (No)	320 (56.1)	32 (72.7)			
Reason for choosing to do work experience					
I was interested in it (Yes)	160 (27.5)	6 (13.6)	4.030	.045	.080
I was interested in it (No)	422 (72.5)	38 (86.4)			

Students' attitudes towards school and school learning

Reasons for choosing elective subjects

Analysis of the relationships between career certainty and reasons for elective subject selection revealed several significant associations. When explaining their reasons for choosing their elective subjects, a significantly higher proportion of 'career certain' students in comparison with 'career uncertain' students answered that their electives were interesting, that they were good at them, or that they needed them for their planned study/career (all three Bonferroni-adjusted $P < .05$, with small effect sizes). The odds of being 'career certain' were 2.82 times higher for those who selected their electives because they thought there were 'interesting', 2.59 times higher for students who said that they chose their electives because they were 'good in these subjects', and 5.04 times higher for those who said 'I need them for my planned study/career'. Conversely, significantly higher proportions of 'career uncertain' students stated that they had chosen these electives because there were 'not enough other choices' ($P < .05$, small effect size). Based on the odds ratios, the odds of being 'career uncertain' were 3.98 times higher for those who selected 'not enough other choices' as a reason for electives choice.

Higher proportions of 'career uncertain' students also selected 'somebody recommended them to me' and 'other' reasons for choosing electives, however, in both cases one of the expected cell frequencies (25 %) was smaller than five, which suggests that both of these results should be considered with caution (see Table 4). Other reasons for choosing elective subjects that were included in the questionnaire,

Table 4 Number and percentage of 'career certain' and 'career uncertain' students in significant association with their school and subjects attitudes

School attitudes	Number (and %) within Career 'Certain'	Number (and %) within career 'Uncertain'	χ^2 value	*P* value	Cramér's V
Reason for choosing elective subjects					
They are interesting (Yes)	484 (83.2)	28 (63.6)	10.470	.001	.129
They are interesting (Yes)	98 (16.8)	16 (36.4)			
I need them for my planned study/career (Yes)	258 (44.3)	6 (13.6)	15.803	<.0005	.159
I need them for my planned study/career (No)	324 (55.7)	38 (86.4)			
Not enough other choices (Yes)	67 (11.5)	15 (34.1)	18.321	<.0005	.171
Not enough other choices (Yes)	515 (88.5)	29 (65.9)			
Somebody recommended them to me (Yes)	51 (8.8)	11 (25.0)	12.086	.001*	.139
Somebody recommended them to me (No)	531 (91.2)	33 (75.0)			
I'm good in these subjects (Yes)	333 (57.2)	15 (34.1)	8.862	.003	.119
I'm good in these subjects (No)	249 (42.8)	29 (65.9)			
Other (Yes)	30 (5.2)	6 (13.6)	5.430	.020*	.093
Other (No)	552 (94.8)	38 (86.4)			
Liking school					
Like	462 (79.4)	22 (50.0)	20.748	<.0005	.182
Neutral	73 (12.5)	12 (27.3)			
Dislike	47 (8.1)	10 (22.7)			
Reasons for school liking					
Sport/PDHPE (Yes)	208 (35.7)	24 (54.5)	6.203	.013	.100
Sport/PDHPE (No)	374 (64.3)	20 (45.5)			
None of the above (Yes)	10 (1.7)	3 (6.8)	5.232	.022*	.091
None of the above (No)	572 (98.3)	41 (93.2)			
Reasons for NOT liking school					
Everything (Yes)	30 (5.2)	6 (13.6)	5.430	.020*	.093
Everything (No)	552 (94.8)	38 (86.4)			
Sport/PDHPE (Yes)	129 (22.2)	3 (6.8)	5.790	.016	.096
Sport/PDHPE (No)	453 (77.8)	41 (93.2)			
Favorite subjects at school					
Science (Yes)	228 (39.2)	9 (20.5)	6.094	.014	.099
Science (No)	354 (60.8)	35 (79.5)			
HSIE (Yes)	186 (32.0)	7 (15.9)	4.941	.026	.089
HSIE (No)	396 (68.0)	37 (84.1)			
Sport/PDHPE (Yes)	206 (35.4)	23 (52.3)	5.023	.025	.090
Sport/PDHPE (No)	376 (64.6)	21 (47.7)			

* One of the expected cell frequencies is smaller than 5

such as being good at these subjects, preferring these subjects to other options, and having a good teacher, were not significantly related to career certainty (all $P > .05$).

School liking

The relationship between students' career certainty and their attitudes towards school were examined with a series of Chi square tests followed by Bonferroni-adjusted comparisons of column proportions. Not liking school was significantly related to 'career uncertainty' (see Table 4). Comparisons of proportions within the 'career uncertain' and 'certain' groups revealed that higher proportions of participants who were 'career uncertain' were neutral to or disliked school (both Bonferroni-adjusted $P < .05$, medium effect size), whereas a higher proportion of students who were 'career certain' liked school ($P < .05$ with medium effect size) (see Table 4). Based on the odds ratios, the odds of being 'career uncertain' were 3.45 times higher for students who were neutral towards school and 4.47 times higher for those who disliked it.

Reasons for school liking and disliking

The proportion of career undecided students who liked school for Sport/PDHPE was significantly higher than the proportion of career decided students who liked school for the same reason (Bonferroni-adjusted $P < .05$ with small effect size). Conversely, 'career certain' students selected Sport/PDHPE as the main reason for *not* liking school significantly more often than 'career uncertain' participants (Bonferroni-adjusted $p < .05$ with small effect size). The odds of being 'career uncertain' were 2.16 times higher for students who chose Sport/PDHPE as something that they liked about school, while those who disliked this subject area were 3.89 times more likely to be in the 'career certain' group. Higher proportions of 'career uncertain' students indicated that they dislike 'everything' at school and selected 'none of the above' among the reasons for school liking, however, in both analyses one of the expected cell frequencies (25 %) was smaller than five, thus, both of these results should be considered with caution (see Table 4). The remainder of the reasons for school liking and disliking that were included in the questionnaire, such as being with other students, relationships with teachers, learning and doing new things, technologies and resources, and social events, were not significantly associated with career certainty (all $P > .05$).

Favourite subjects at school

The relationships between career certainty and participants' favourite subjects as well as reasons for choosing their electives are also shown in Table 4. Statistically significant relationships were found between career certainty and selecting Science, Human Society and Its Environment (HSIE), and Sport/PDHPE subject areas. Follow-up comparisons of proportions between 'career certain' and 'uncertain' groups demonstrated that higher proportions of 'career uncertain' students came

from those who liked Sport/PDHPE (Bonferroni-adjusted $P < .05$, small effect size). Conversely, higher proportions of 'career certain' participants were found among those whose favourite subject areas were Science and HSIE (both $P < .05$, and both with small effect sizes) (see Table 4). The odds of being 'career uncertain' were therefore 2.00 times higher for students whose favourite subject area was Sport/PDHPE, whereas the odds of being 'career certain' were 2.51 times higher for students who favoured Science and 2.48 times higher for those who enjoyed HSIE. Other subjects including English, Mathematics, Creative Arts, Technologies, Languages and VET, were proportionally enjoyed by students in both 'career certain' and 'uncertain' groups (all $P > .05$).

Discussion

This paper examined the effects of educational experiences, including school sector and type, students' exposure to career education, and students' attitudes towards school and school learning on their readiness to make future career choices. Our results indicated that school sector (government/non-government) was not significantly related to career choice certainty and neither was co-educational/single sex school status. However, studying in a selective school and living in a particular geographic location were significantly related to career certainty with higher proportions of career uncertain students attending non-selective and non-metropolitan/regional schools.

Our research also found that students who were 'career uncertain' were significantly less likely to have had access to career education classes and school-organised work experience, were less likely to enjoy school, and more likely to report that they dislike 'everything' about school. When asked what they *did* like about school, students in the 'career uncertain' group were more likely to select 'sport/PDHPE' than 'career certain' participants who were more likely to select these subjects as their reason for *not* liking school. Students in the 'uncertain' group also named sport/PDHPE as their favourite subject significantly more often than students in the 'certain group'. Conversely, students in the 'uncertain' group nominated science and HSIE as their favourite subjects significantly less often than students in the career certain group.

Together, these findings suggest that some educational experiences bear influence on the development of student career choice capability whilst others, such as school sector, do not. Further, this influence may be compounded by the interactions between multiple factors including students' individual backgrounds and characteristics, as well as other educational experiences. Lack of access to career education and guidance, for example, may impact student career choice capability in a number of different, yet interrelated ways. Firstly, the lack of certain educational experiences, such as career education sessions and school organised work experience, can impact students' perceptions of what is realistically achievable and desirable (Smith 2011). Secondly however, lack of guidance—particularly in the earlier stages of secondary school—may affect students' subject

choices, leading to the uptake of subjects that are either not well suited to their interests and abilities or to the students' desired career pathways (Gore et al. 2015).

There is established evidence of a strong connection between development of career plans and school subject choices. Catsambis (1994) has suggested that students' earlier career determination often leads to pursuit of associated course work during high school. Elsworth and Harvey-Beavis (1995), in their Australia-wide empirical study, demonstrated a pattern of relationships between occupational interests and the curriculum choices of high school students. The authors recommended that the development of career plans, school subject selection and critical discussions of students' reasoning behind those choices should be integrated within school guidance. If those practices are implemented, students who exhibit consistency between their occupational interests and specific subject choices are more likely to have greater interest in their school work and improvement in their approach to learning (Elsworth et al. 1999). Although these recommendations were proposed more than a decade ago, the road to practical implementation seems to have been problematic for a number of schools, with more than 60 % of Year 9 and about 20 % in each of the Year 10–12 groups in our sample reporting not having experienced any career education sessions while making their subject selection choices.[2]

Lack of career education sessions may partially explain participants' difficulties in choosing school subjects most relevant to their needs from the range of provided options. Walker et al. (2006) found that career advisers in NSW schools mostly perform their role on a part-time basis, combining it with teaching and administrative duties. As a result, they are often unable to allocate enough time for high quality personalised career education and guidance. Our results suggest that these gaps in practice may now be affecting the development of student career choice capability, particularly for students who do not seem to be getting much out of the school curriculum. If so, this could be addressed by establishing more proactive and systematic career guidance, which should provide information and consultations to students and their parents starting from earlier years of schooling, preferably before the actual selection of elective subjects. For example, Gore et al. (2015) recommend that general career exploration, focusing on students' motivations, opinions and pathways, should commence in primary school. As our research has found a significant relationship between career uncertainty and parental occupations associated with low SES, this type of guidance may be especially crucial for students with less access to important social capital, such as family provided networks and parental career orientation (Galliott et al. 2013).

Worryingly, recent policy changes may make the already patchy availability of career education and guidance worse. Since 2010, some schools (particularly in areas identified as disadvantaged) have received benefit from additional career support. The 'Partnership' component of the Higher Education Participation and Partnership Program (HEPPP) was specifically designed to fund universities to create activities encouraging school students from low socioeconomic backgrounds

[2] This difference between year groups does not account for significant differences between career certain and uncertain groups.

to aspire to higher education and to build their capacities to access tertiary education (Australian Government Department of Education 2014a). Unfortunately, however, this part of the program has sustained substantial cuts in funding from the beginning of 2013 (EducationCareer 2012) and will cease to exist from January 2015 (Australian Government Department of Education 2014b). As a result, schools with the most disadvantaged and 'career uncertain' students will have no choice but to return to self-reliance in career guidance provision, further reinforcing the patchwork quality of career education Australia (Patton 2005), as well as its uneven effects.

There is precedence from which Australian politicians could learn. Recent cuts to university outreach programs in the UK have resulted in dramatic reductions in both the quantity and quality of career support provided to young people (Langley et al. 2014). Programs such as Aimhigher, Connexions, and Education Business Partnerships, which were designed to increase aspirations and improve post-school transitions, worked to share the burden of responsibility for the most disadvantaged and vulnerable student groups with schools. This support has now been severely curtailed, returning the work associated with career guidance and counselling to school authorities. Due to a lack of certainty in dealing with this increase in responsibility however, schools now approach career guidance in a vast variety of ways and forms. The result is a "postcode lottery" where some student groups are disadvantaged by receiving no, or less, career guidance compared to students in other schools. With the exception of good practice in some schools, the general trend shows a substantial decrease in both the quality and quantity of career education provision (Langley et al. 2014). These problems could and should be avoided here.

More equitable access to career education and guidance however will not solve problems stemming from academic difficulty, a lack of curricular diversity, or student engagement. In previous analyses examining student characteristics and career choice capability (Galliott et al. 2013), we found significant differences between groups in relation to self-reported academic achievement, with 'career certain' students more likely to rate themselves in the top third of their year academically and 'career uncertain' students more likely to rate themselves in the bottom third. Our current findings strongly suggest that student career choice capability is also affected by a lack of breadth in the school curriculum, providing empirical support for the need for curricular diversity.

'Career certain' students were also significantly more likely to choose electives because they had an interest or talent in the subject or because they needed those subjects for their chosen career. Conversely, a significantly higher number of 'career uncertain' students reported not having a sufficient number of elective options and that they made their existing choices at someone else's recommendation. As a result, they may not be selecting their subjects because of planned study, future career or personal interest *but because they lack better options*. Students in the 'career uncertain' group were also more likely to say that they preferred sport/PDHPE and that they did not like science or HSIE. Together, these findings suggest that some young people are not well served by the academic school curriculum; an observation that is not new. Our research suggests however that students struggle to

see a future for themselves when they are forced to undertake subjects that do not interest them and which they do not like. This further suggests that activities aimed at raising aspirations and/or providing career guidance will not address mismatches between student interest or ability and curriculum offerings.

In their recent study, Graham et al. (2015) found that students who do not see relevance of school education to their post-school lives tend to dislike formal schooling and become disengaged. Recognising the strengths and importance of this pattern should lead educational policymakers away from what is arguably an overused individual deficit model and towards the development of initiatives aimed at exploring the ways in which school systems ought to cater for young people who prefer non-academic subjects and who may—with the benefit of greater curriculum diversity and more timely provision of career education—be able to perceive a future career in fields related to the subjects they enjoy.

Conclusion

Career determination of youth in post-GFC times seems to be national priority for many developed economies including Australia. Nevertheless, increasing numbers of young people experience difficulties in their post-school transitions when desirable jobs disappear from the labour market. While governments implement new educational policies in order to address the problem of youth aspirations and post-school transitions, the outcomes of those initiatives are sometimes controversial and often ineffective in achieving set aims and goals. Student career choice is a multistage formative process that relies on personal characteristics and resources, as well as educational experiences. With respect to the contribution of educational experiences to the development of students' career choice capability, this study found that students who were uncertain of their future career had less access to career education opportunities and expressed less satisfaction with the diversity of elective subject choices. They also tended to enjoy school significantly less than 'career certain' students and preferred Sport/PDHPE to Science and HSIE subjects. In order to increase successful outcomes in post-school transitions for the most disadvantaged and those students struggling with their career determination, schools need greater curricular diversity, as well as proactive career guidance. To aid career aspiration formation, students and their families should also be provided with the relevant career education information before they start choosing their electives. This will allow more students to be able to make use of educational experiences and career opportunities available to them.

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