

FOCUSING ON WHAT COUNTS: USING EXPLORATORY FOCUS GROUPS TO ENHANCE THE DEVELOPMENT OF AN ELECTRONIC SURVEY IN A MIXED-METHODS RESEARCH DESIGN

Natal'ya Galliot¹, Linda J. Graham²

¹ *Macquarie University, Department of Education, Rm 807, Building C3A, Macquarie University, NSW, Australia, 2109, natalya.shcherbak@gmail.com*

² *Queensland University of Technology (QUT), School of Cultural & Professional Learning, Faculty of Education, Rm 326, A Block, Victoria Park Road, Kelvin Grove, QLD, Australia, 4059, l2.graham@qut.edu.au*

Abstract

This paper describes the use of exploratory focus groups to inform the development of a survey instrument in a sequential phase mixed methods study investigating differences in secondary students' career choice capability. Five focus groups were conducted with 23 year 10 students in the state of New South Wales (NSW), Australia. Analysis of the focus group data informed the design of the instrument for the second phase of the research project: a large-scale cross-sectional survey. In this paper, we discuss the benefits of using sequential phase mixed method approaches when inquiring into complex phenomena such as human capability.

Key words: sequential mixed methods, focus groups, survey development, adolescents, agency.

Introduction

A paradox exists at the basis of global capitalism and the outsourcing of labour from developed to developing countries. Whilst considered necessary for ongoing competitiveness and profitability, these practices have led to fundamental change to the nature of labour markets within developed countries, leading to growing unemployment and rising inequality (Stiglitz, 2012). People with few skills and little education are in the least demand with the OECD (Braconier & Westmore, 2014) warning that "the rising economic importance of knowledge will tend to raise returns to skills, likely leading to further increases in earning inequalities within countries" (p. 5). Australia is no exception to this trend. Transition from production to service industries over time has led to a decrease in the proportion of "blue collar" or low-skilled occupations relative to "white collar" or high-skilled occupations. In 1966, for example, manual jobs in manufacturing, farming, fishing and timberwork accounted for 56% of the job market. Now, almost five decades later, these occupations account for only 30% (Australian Bureau of Statistics, 2011). Career opportunities for young people with basic education and skills are therefore limited, contributing to growing youth unemployment and entrenched social exclusion (Graham, Van bergen, & Sweller, 2014).

Recent government policies have thus focused on driving participation in higher education and raising the aspirations of young people from disadvantaged backgrounds, including Indigenous students, and students in regional and remote locations (Smith, 2011). In 2013, more than \$192 million in Federal government funds were allocated to increase and support the participation of disadvantaged school students through the Higher Education Participation and Partnerships Program (HEPPP). Of these funds, around \$80 million was reserved for university-school partnerships and out-reach activities designed to "raise aspirations and build capacity of students from low SES communities where articulation to universities has historically been low" (HEPPP, 2014, np).

To date, however, there is insufficient evidence that programs aimed at raising the aspirations of disadvantaged students make any difference to their attainments (Carter-Wall & Whitfield, 2012). Further, Burnett (2013) notes that “it takes more than enthusiasm and motivation to succeed when the odds are so overwhelmingly against” a person (para. 14). Comparing the probability of going to university for disadvantaged and advantaged students, Burnett suggests that advantaged students are more likely to enrol in higher education, even though disadvantaged students might be more motivated. This discrepancy is caused by the higher number of obstacles that disadvantaged students need to overcome in order to reach higher education. These hurdles counteract their motivation, thereby putting the less-motivated but more advantaged student ahead of them.

These findings suggest that aspiration is not singularly important in the career decision-making process. For example, research in the area of career development has found that a person’s career aspiration is influenced and shaped by personal and environmental contexts (Vondracek, Lerner, & Schulenberg, 1986), as well as the resources available to individuals (Howard et al., 2011). According to Hirchi, Niles and Akos (2011) however, the majority of career development studies focus on intrapersonal variables or, in rarer cases, on environmental factors, and a focus on both of these within the same study is scarce.

Amartya Sen’s (1995) theory of human capability offers a helpful lens through which to examine the range of differences between students who are able to actively make their career choice and those who are not. Sen considers human diversity to be a fundamental aspect that creates differences in the way individuals are able to convert resources into valuable outcomes. The key to his theory of capability, which we have adapted for this project (see Galliot & Graham, 2014), is its focus on the formative elements that relate to the development of human agency (or, in this case, career choice capability). We have argued elsewhere that education is one such formative element and that its benefits may be unequally distributed, perhaps affecting students’ academic achievement, as well as the quality and type of career education opportunities they receive (Galliot & Graham, 2014). Therefore, the central questions guiding this study are:

1. Who is and who is not active in career decision making?
2. What characterises those students who are not?

Whilst Sen’s theory of human capability is an ideal conceptual framework through which to pose such questions, a common criticism of the capability approach is that “agency” is difficult to measure (see Alkire, 2005). For this reason, Sen (1995) recommends that researchers use “observable data regarding achievements to get a partial but significant view of the freedoms enjoyed by different persons” (p. 5). But what achievements? How are these best measured? And what type of approach would enable attention to elements that have been identified in the existing research literature, as well as those pertinent to the local context and to the young people themselves?

Method

The focus of our research study was on Year 9-12 high school students because, at this stage of schooling, they have already been through the process of selecting their elective subjects and possibly thought about their future career trajectories. Determining meaningful differences between students in terms of their readiness to make a career choice requires a representative sample and this would be most readily achieved via the survey method. Deciding which and how many questions to ask in a survey, however, is of vital importance, as user-friendliness increases participation, completion and representation of all participant types, including students of both genders, different socioeconomic backgrounds, school types, and developmental stages. Our solution was to conduct a series of focus groups as the first phase in a sequential phase mixed-methods design that used the “following a thread” technique of integrating qualitative and quantitative findings (O’Cathain, Murphy, & Nicholl, 2010).

In comparison with single method research designs, mixed-method research is said to offer a more well-rounded understanding of the research problem (Ivankova, Creswell, & Stick, 2006), deeper inquiry into the phenomenon of a study, and wider understanding and confirmation of the results (Johnson, Onwuegbuzie, & Turner, 2007). Yet, the majority of studies in the field of career development are theoretical

or quantitative. Mixed-methods research is also under-utilised in comparison with related discipline areas such as school psychology and vocational education and training (Cameron, 2010). As such, the existing body of research in the area of career development, while allowing for theorisation and identification of statistically significant factors relating to students' career choices, cannot fully explain the subjective reasons that underpin the behaviours of individuals from different circumstances.

To address this gap, this doctoral research project employed a sequential phase mixed-method research design utilising both qualitative and quantitative data collection methods and techniques of analysis (Creswell, 2003; Tashakkori & Teddlie, 2003). The strengths of such an approach is that we can first explore the issues identified in the career development literature by investigating their relevance to students living within specific local contexts. This would allow us to be more specific in what and how to measure quantitatively in order to enhance our understanding of the problem. The method that we chose for our first phase prior to the development of a survey was focus group interviews from which a number of benefits accrued.

Firstly, interaction with representatives of the target group enabled us to explore the career-related ideas of high school students in different socioeconomic regions and various school types (including government and non-government schools). The inclusion of a short questionnaire as part of the focus group, which we analysed quantitatively, gave us some initial impressions as to the diversity of career options being considered and whether any patterns existed. Secondly, focus groups assisted in familiarising the researchers with the language being used by these students, which enabled us to ensure that the questionnaire was student-friendly. Thirdly, focus groups helped us to partly fill the gaps in the research literature with regard to the variety of educational and life experiences of a range of students, and how we could sensitively frame demographic questions. Finally, focus groups enabled us to pilot the planned survey questions and to adjust individual questions based on students' ease of interpretation.

These qualitative focus group findings were then used to augment the draft of the quantitative questionnaire of the survey, which had been based on the existing research literature in the areas of youth aspiration and career development. In the following section we describe the conduct of these focus groups and show how analysis of these data both informed and improved the development of the survey instrument.

Procedure

For the purpose of the focus groups, we obtained the necessary approvals from Macquarie University Human Research Ethics Committee (HREC Approval No. 5201100745), the NSW Department of Education and Communities (SERAP Approval No. 2011197), and the principals from five secondary schools. Each school was drawn from a different stratum of the Index of Community Socio-Educational Advantage (ICSEA) developed by the Australian Curriculum, Assessment and Reporting Authority (2010) (See Table 1). This index uses a range of student-level variables such as parental occupation and education level achieved, school location, and proportion of Indigenous student enrolments (Australian Curriculum Assessment and Reporting Authority, 2013).

Table 1.

Participating schools by ICSEA level, sector, type, and geographic location.

ICSEA Value	School Code	School Sector	Selective/Non-selective	Geographic location
1100+	School E	Government	Selective	Metropolitan
1001-1099	School D	Independent	Non-Selective	Outer metro area
		Mean = 1000		
900-999	School C	Government	Non-Selective	Metropolitan
800-899	School B	Government	Non-Selective	Outer metro area
	School A	Government	Non-Selective	Metropolitan

The ICSEA scale has a mean of 1000 and a standard deviation of 100, with a range of 500 (extremely disadvantaged) to 1300 (exceptionally advantaged) (Australian Curriculum Assessment and Reporting Authority, 2012). Given that the majority of schools in NSW are clustered between the 800-1200 strata, we randomly selected two schools within one standard deviation (one on each side of the mean); one school two standard deviations above the mean and two schools two standard deviations below.

Participants

A combination of government and non-government schools was selected and all schools were co-educational (See Table 1). Between two and six students from each participating school were interviewed in five groups for about 45 minutes (length of one standard lesson in a particular school). Participants were recruited from the same year grouping (Year 10). Of the 23 focus group participants, there were 10 males and 13 females. As shown in Table 1 above, students were recruited from schools representing different ICSEA strata. Seven students were from schools in the lowest (800-900) ICSEA stratum, six students were from schools in 901-1000 stratum, four students were from schools in the 1001-1100 stratum, and six students from schools in the highest (1101-1200) stratum. All names are pseudonyms.

Data Collection

The focus groups were conducted over a nine week period during the first and second terms of the 2012 school year (first half of the year). Qualitative data were collected via semi-structured group interviews allowing researchers to sample a broad range of experiences (Creswell, 2005; DiCicco-Bloom & Crabtree, 2006; Seidman, 2006). The data were collected in the school environment. The first author recorded focus group discussions on a digital recorder and took observational notes. The data were then transcribed verbatim into a text file for a further analysis.

Data Analysis

Qualitative data from the focus groups were coded and analysed thematically using NVIVO 9 software (King & Horrocks, 2010). Coding of the units of data (i.e. words, expressions, sentences and/or group of sentences related to the same topic) and identification of the themes was achieved using a number of scrutiny techniques (Ryan & Russell, 2003), including identification of “similarities and differences” between units of data, searching for literature-related material to understand how the qualitative data illuminated the experiences of informants, and finally, “metacoding” was used to evaluate the relationship between previously identified themes to identify new overarching themes (Ryan & Russell, 2003, pp. 91-99).

Results

The focus group data analysis revealed several themes related to students' career aspirations and associated school experiences. Sub-themes were established through an open-coding process and grouped using the axial coding technique into conceptual fields or meta-themes (Miles & Huberman, 1983). Some of these, such as “aspirations”, “educational & life experiences” and “pathways”, were driven by the literature questions of the interview. Another sub-theme, such as “self-efficacy”, was less expected and emerged after more complex content scrutiny. Themes, as depicted in Figure 1 below, were later utilised as domains in the survey instrument.

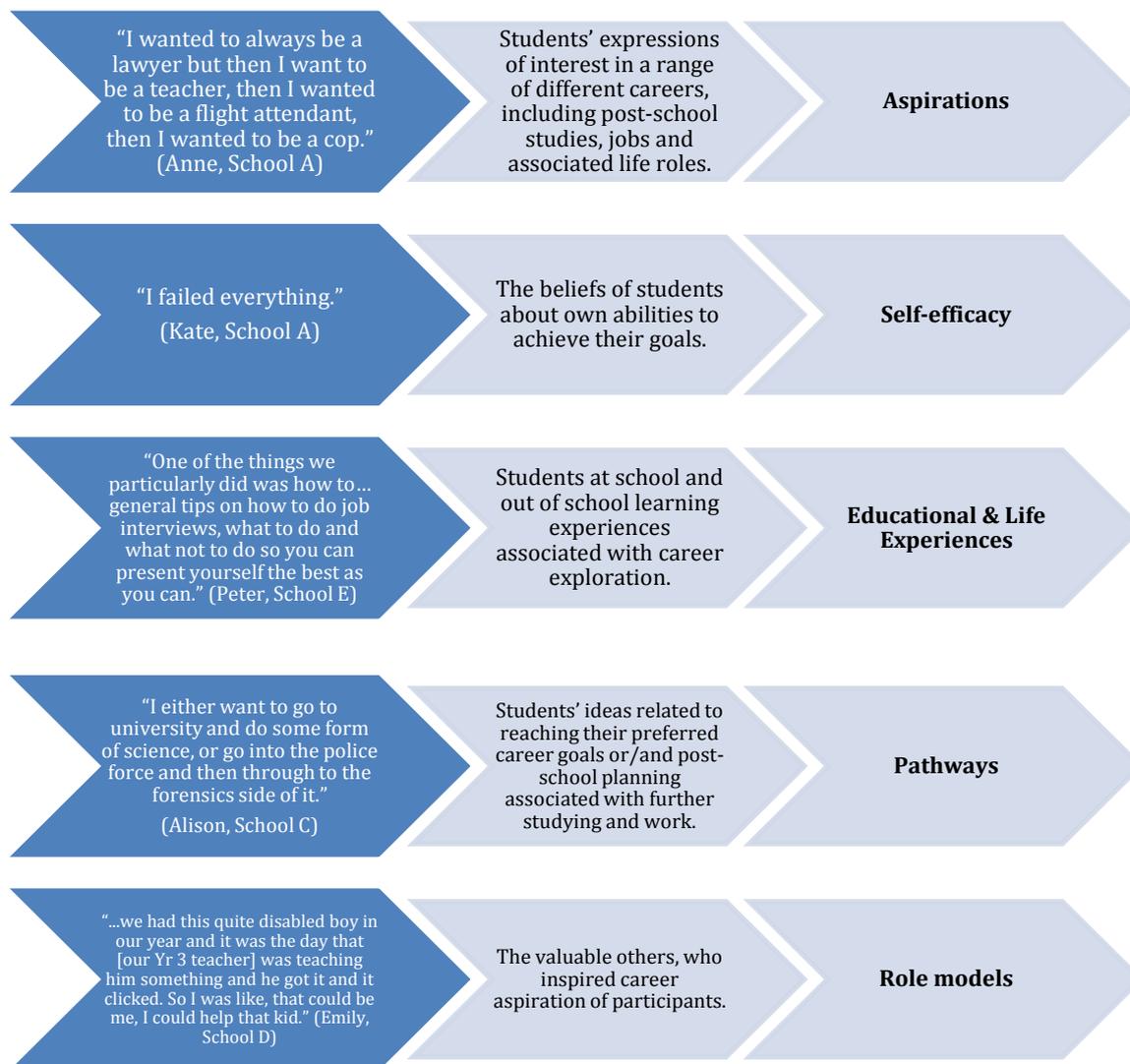


Figure 1. Themes and categories that emerged from qualitative analysis of the focus group data.

In the following section, we describe how the analysis of the focus group data informed the development of survey items within each of these domains.

Aspirations

When looking at the way our participants articulated what they would like to do in their future career, it was clear that some students have a number of alternative preferences, while others are not sure what they want to do. While this was anticipated from our review of the literature, the participants' responses emphasised the importance of separating out students who did not have any plans at all and students that did have a plan but were still unsure of the detail. For example, Nicole (School E) stated that she had "absolutely no idea" what she wanted to do when she left school, while Jack (School D) said that he was considering going to university but was still undecided about the field of study. Jack was also thinking of becoming a pilot, however he was not certain of what he needed to do to work in this profession.

These two responses from Nicole and Jack highlighted that there may be qualitative differences

between students who are uncertain of what they want to do once they leave school, indicating that responses to questions in this domain can be misleading if more complex questions are not asked. As differences between students in terms of their future career certainty was one of the central questions guiding this research study, we made sure to include numerous response options. This way, we could better understand what students were uncertain of and group them appropriately for statistical analysis. The final design of this multi-stranded question is presented in Figure 2 below.

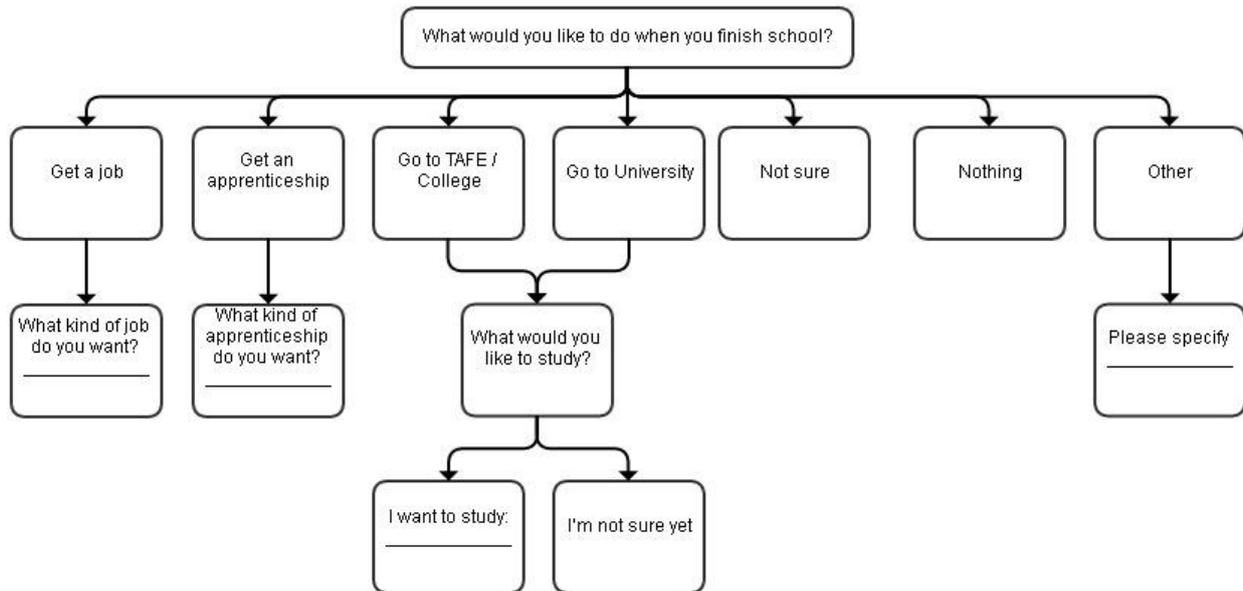


Figure 2. Post-school career options: dividing questions into branches based on the previous responses.

This question was followed by a sliding bar asking students to indicate how much certainty they have (0-100%) in choosing their future career (Figure 3). This item allowed us to more precisely assess the differences between students who said they had no idea of what to do after finishing school versus those who had some options in mind but were uncertain which one they would like to pursue thereby ensuring that we were not conflating the two. This was important because of the study focus on students’ career capability and our interest in what characterised students who were uncertain in their career aspirations versus those who were not.

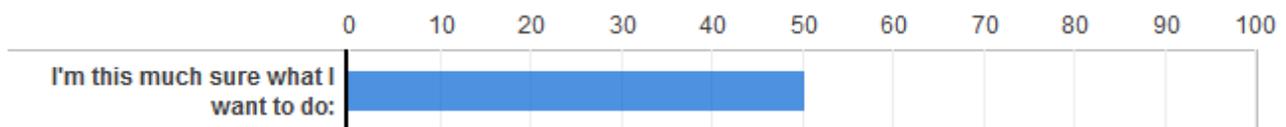


Figure 3. Level of career certainty response format.

These two items – what would you like to do when you finish school and self-reported certainty in response – were therefore designed to work together. The first was designed to assist us in dividing the participating students into two groups: “career certain” and “career uncertain” and the scale provided an additional safeguard to ensure that the grouping of students was accurate.

Self-efficacy

Some focus group participants with multiple career aspirations discussed their options in order of preference followed by perceived achievability. An example is Emma (School E), who said “I want to do something creative like be a magazine editor. But then if I don't reach that it's probably going to be like a museum curator”. Similar responses across groups confirmed that students were exercising *career adaptability*, as described by Super and Knasel (1981) and later by Savickas (1997). Our participants also indicated that some students may temper their future aspirations according to their perceived academic ability and self-efficacy, a trait that has been noted in recent Australian research (Hawkins, 2014). This finding prompted us to include two items designed to tap into student perceptions of their academic abilities relative to others in their year group, and their own self-efficacy and problem-solving abilities. In the first item, we asked participants to self-assess their academic achievements by selecting one of three options:

- I'm at the top third of my year
- I'm in the middle of my year
- I'm at the bottom of my year

In the second item, we included three six-point forced choice questions that were adapted from the general self-efficacy scale (Schwarzer & Jerusalem, 1995), as recommended by Alkire (2005):

- I usually can solve difficult problems if I make enough effort.
- I can usually think about several possible solutions when dealing with problems.
- Usually it's easy for me to follow my goals and work towards achieving them.

The inclusion of these two items allowed us to identify some of the more objective (i.e., achievements) and subjective (i.e., self-efficacy) measures of career choice capability (Galliot & Graham, 2014).

Educational & Life Experiences

The range of resources, experiences and activities that participants described drawing on to explore career opportunities included families, local communities, schools, universities and other organisations. Interestingly, not only did we find diversity in students' personal (home-based) career related experiences, but school organised initiatives also varied considerably across all five participating schools. For example, at the time of focus group discussions (first half of the school year), not all students had experienced career education sessions but those who had found them very useful. Students from School E discussed the benefits they received from group career advisory sessions where they covered a large variety of topics:

“Well, in our class Mrs X. will come and teach us and we just learn about... trying to get experience in jobs and how to write a resume and stuff like that... and work experience, and how to choose what kind of jobs you wanna do.” (Olivia, School E)

“In the class we did like this online quiz thing... and it kind of gave us list of career options that... like... based on the quiz that they think we would be good at or will suit us.” (Linda, School E)

“One of the things we particularly did was how to... general tips on how to do job interviews, what to do and what not to do so you can present yourself the best as you can.” (Peter, School E)

Meanwhile, participants from School B talked about a one day career related event that their school had organised:

“We had a career expo at the end of last term and we had to go around to different workshop things and they told us about the job, what you need and how to write your resume for it.”
 (Andrew, School B)

Students in metropolitan schools in disadvantaged areas (A and C) indicated that their schools had strong connections with universities through various support programs. Events that they mentioned included visits by university representatives, excursions to university campuses with demonstration of their facilities, student participation in a variety of activities, and talks from current university students with backgrounds similar to school students who may not thought about studying at university before.

Participants from school D had not had any formal career sessions apart from a more general “goal setting” workshop:

“Goal-setting... They’re pretty good, they go over the future and stuff... I guess it’s about making the right size goals and going in and achieving them, how you do it and stuff”. (Mia, School D)

This variety of career choice related experiences and their inconsistency from school to school inspired us to include another multiple choice response question, where students could select all of the options that were applicable to them. We also included additional (skip logic) questions enquiring about the usefulness of these experiences (see Figure 4 below).

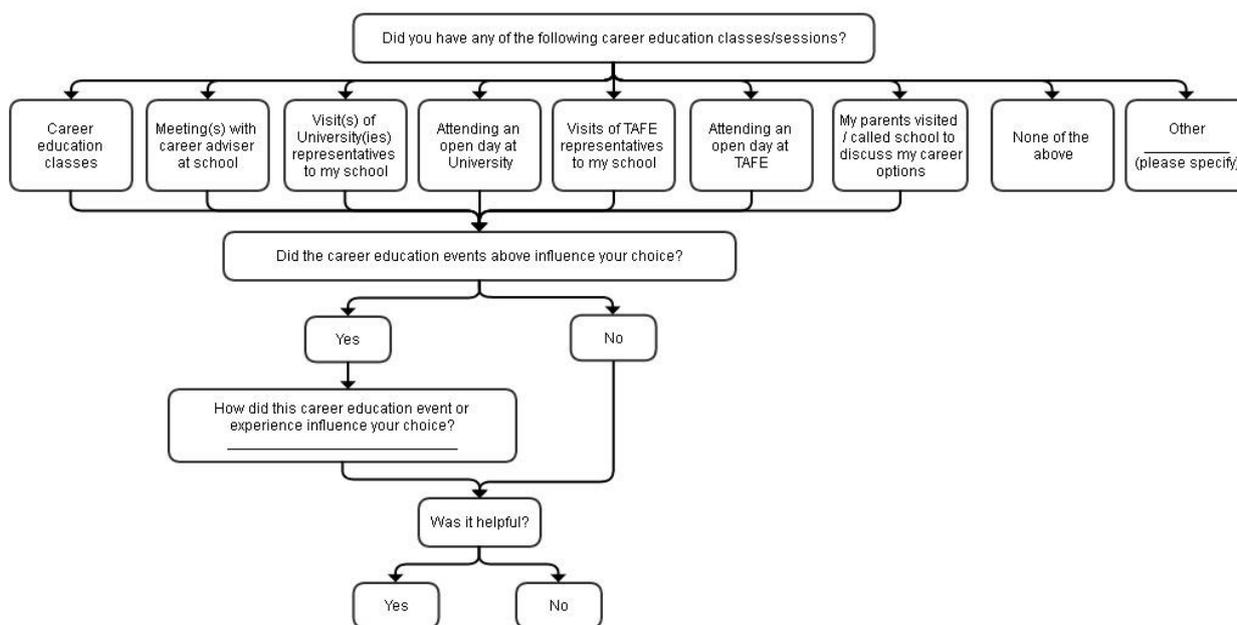


Figure 4. Career education classes/sessions: dividing questions into branches based on the previous responses.

Despite participants from school D not having had any of the experiences listed in Figure 4 above, they were aware that they were going to have other career related activities later during the year:

“We have work experience later in the year, so if Jack wants to go and do some piloting stuff in an office, he can go and do that.” (Isabella, School D)

In response to this comment, we included another series of questions investigating school organised work experience, students’ reasons for doing it, and the effects on career decision making (Figure 5).

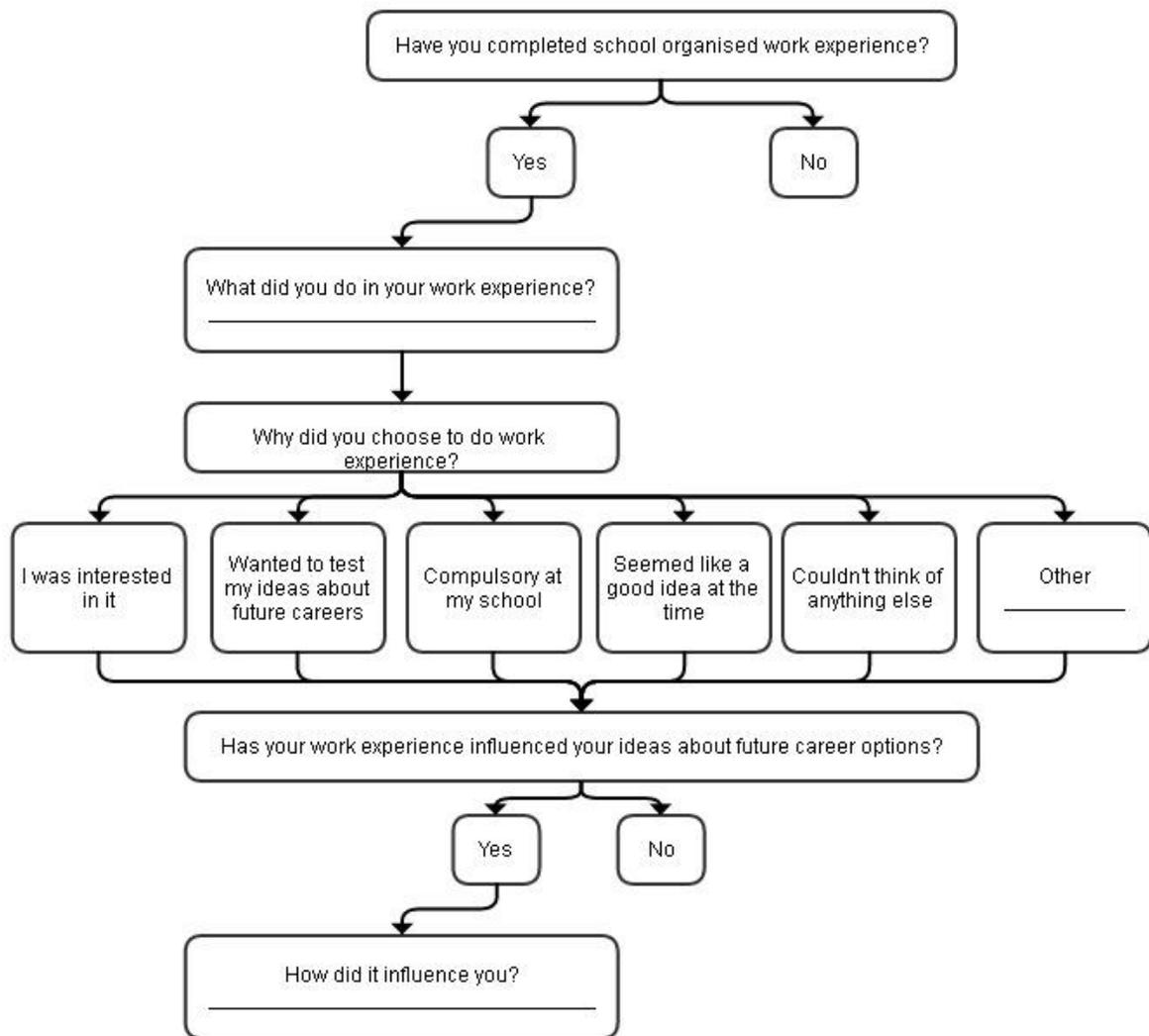


Figure 5. School organised work experience: dividing questions into branches based on the previous responses.

Questions such as these allowed us to tap into the contributions made by educational experiences to differences between students in terms of their career readiness, which was the second central research question guiding this study.

Pathways

When students were asked which of their school subjects might help them in their preferred career, not all participants could draw straight forward connections between the curriculum offered to them and their post-school career trajectories. It was not always because students did not know what they need to study for their chosen careers. For example, Mike from School B knew that in order to become

‘a computer engineer, you really just need to know what's in a computer, like the RAM, the CPU, hard drive, it's good to know other aspects like coding and scripting.’

However, when Mike was asked which of his subjects might be helpful for him in preparation for his chosen career, he responded that they ‘don't have a software class’. In a further discussion, Mike indicated that he was aware of subjects such as computing and multimedia, which could help in a computer engineering in the

future, yet these subjects were not available at his school. Due to this curriculum limitation, Mike was considering an alternative career for which he was doing music:

‘I think music will help me go towards the sound engineering. Because it helps me learn about the staves, about the sounds, that's about it.’

This example demonstrates that some schools provide limited subject offerings and that some students have to select from electives that are not obviously associated with their most desired careers, in some cases causing them to deviate from their original career preference. For instance, in the example above, Mike was forced to alter his career preference based on the availability of educational opportunities. This finding prompted us to include in a survey questionnaire a sequence of questions in relation to elective choices. First of all, we asked participants to list their elective subject choices. Then we asked them to indicate what their reasons were for selecting those subjects.

Schools A and B were offering student scholarship programmes, with the support of government and university representatives, in order to help them to decide what they want to do and to be more prepared for post-school transition:

“We run lots of programs which is really good, like lots of scholarship programs to help us to decide what they want to be in their future and what opportunities they have.” (Mary, School A)

Supported by recent government initiatives such as Higher Education Participation and Partnership Program (HEPPP), those programs provided through universities were encouraging students from disadvantaged backgrounds to choose a pathway to university and to prepare for it during their high school years. However, while targeting disadvantaged students, the programs were very competitive and offered placements only for higher achievers:

“The end of year eight, you have to sign in a form and put in either if you want to do N or M program and then from that, depending on your attendance and your risk entries and basically just how you go along, general marks, so that’s how everybody was selected.” (Amelia, School C)

Only 15 students from 115 applicants at school C were admitted to program M, roughly indicating a thirteen percent admission rate.

To determine who has (and who does not have) access to participation in the HEPPP based programs we incorporated questions enquiring whether students are aware about such options and, if so, whether they participate in them. Logos of the several HEPPP sponsored programs operating in NSW were provided as visual clues to trigger students’ memories.

Participants from School C, while describing one of their visits to a university, gave positive feedback about ‘Bullseye’; a visual representation of school subjects and potential jobs that are associated with them. In those diagrams, school subjects were placed in the middle circle, and related professions were placed in the circles around, where increased difficulty and the amount of study required corresponded with being further away from the central circle. Amelia from school C referred in a very positive manner to one of those diagrams:

“The most helpful would have to be when we looked at the “Bulls-eye”, because there were some subjects that we didn’t actually realise could get you into your – like where you wanted to be at where you finished school. For example, for one I didn’t know that English by itself could lead you by itself to surgery and medicine type things. So you could just choose English to do that. There’s a further extension to do it, so you’re going to have to pay for more of biology and chemistry classes when you’re in uni, but that’s something you could do.” (Amelia, School C)

“Bulls-eye” is one of the online career guidance resources promoted by the Australian government Department of Education (2013). Knowing that some of those resources are recommended for incorporation into career education sessions at Australian schools (Board of Studies New South Wales, 2008), we included a list of such resources in the survey and asked students whether they knew about those web sites, accessed them and found them useful.

Items in this domain helped us to investigate the effect and usefulness of the career education resources distributed by the Australian Government to students in various forms (i.e., through universities and the Internet).

Role models

According to Pleiss and Feldhusen (1995), role models (people who are considered to be worth emulating) can facilitate the decision making process. Our focus groups' participants referred to a range of role models often described in the literature (Hackett, 1989), including family members, other relatives, friends and their relatives, and school staff. Interestingly, while some people in the social network of participating students were considered to be examples of a good career, others were providing an example of what not to do. For example, Jessica from School C referred to seeing her parents and what they do as a positive career example:

“To be honest, my father, him getting into the whole psychology slash biology, all the study of the mind and everything has really inspired me.” (Jessica, School C)

Conversely, seeing what his parents do discouraged Jack from undertaking similar work:

“Up to the point that I don't, in some cases I don't like what they do, just because it's boring. My dad's an accountant and that would be so boring, so annoying, so that sort of turned me off accounting.” (Jack, School D)

Amelia drew inspiration outside of her family network, from her local community:

“Basically no one really inspired me besides my surgeon because throughout my life I've had quite a few surgeries done, so my surgeon is the one that really inspired me into continuing with surgery type focus and from where I am right now ... I hope I do get to do surgery.” (Amelia, School C)

Seeing the work of teachers prompted both Peter (School E) and Anne (School D) to think about pursuing a career in teaching, however, their reasoning was quite different. Anne appreciated the personal involvement associated with teaching, such as being caring and providing help to those who are in need:

“We had this quite disabled boy in our year and it was the day that she was teaching him something and he got it and it clicked. So I was like, that could be me, I could help that kid, I could help kids like that to get things that otherwise they might not have.” (Anne, School D)

Meanwhile, Peter was attracted to job security:

“I think being a primary teacher would be quite... I think there would be plenty of jobs there for me because I'm a male.” (Peter, School E)

The focus group discussions highlighted the potential importance of an emerging trend that is not yet a key feature in the research literature. Participants described how on several occasions universities created opportunities for students to see examples of people with different career pathways from being an average school student to post-school studies and to jobs in a range of industries. Schools A and C arranged visits of students to universities where they were exposed to a variety of career pathways. In addition, for five students media was a powerful source of career-models, with characters from TV serials and movies as well as literature being a source of a career inspiration:

“I watch shows like that gaming show at the moment, and sometimes they show career opportunities that they have so sometimes when I see them I'm like, I want to do that when I grow up.” (Eddie, School C)

“When I was a kid I watched that movie, called something 30, and her job was a magazine editor and I was watching it and I was like 'that's... such a great job...’” (Emma, School E)

Learning about the variety of inspirational people in the lives of students led us to develop a sequence of questions, which are depicted in Figure 6. By enquiring about the source of career-role models, we were interested to see whether students who are more active in their career decision-making are affected more by particular types of sources (and whether these related to the personal or educational spheres) and experiences associated with them.

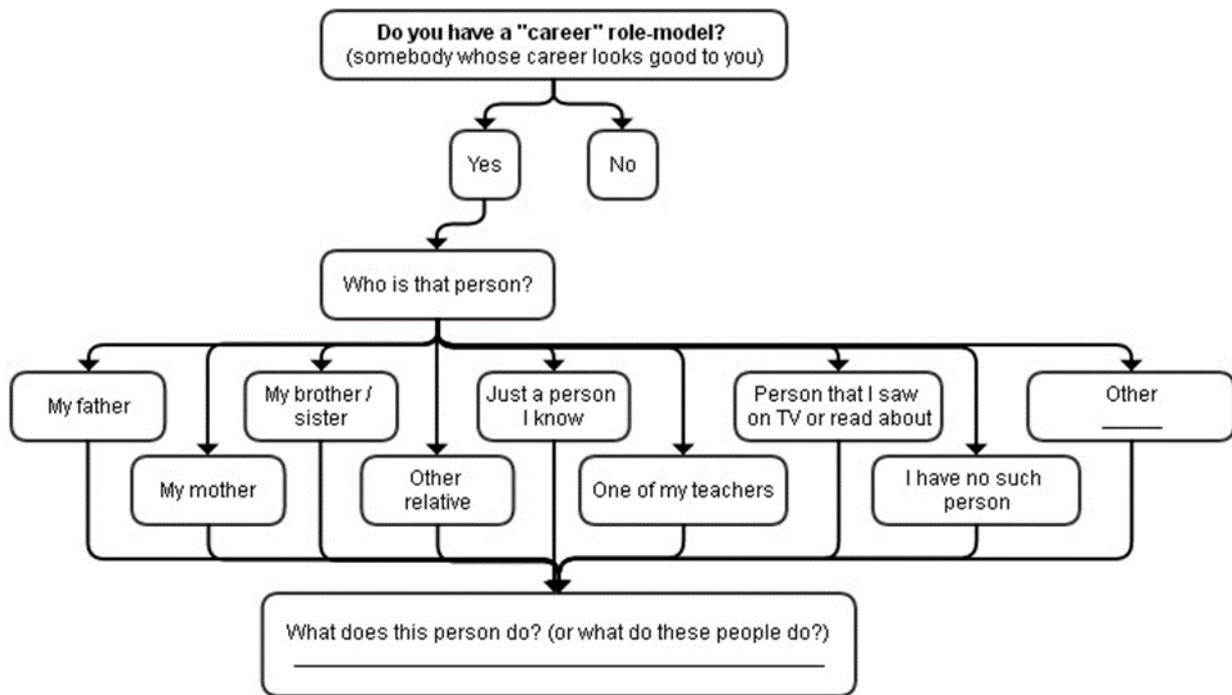


Figure 6. Career role-model: dividing questions into branches based on the previous responses.

Discussion

Conducting focus groups provided multiple benefits for questionnaire design in addition to piloting constructs from the research literature. For example, greater contextualization allowed us to increase the participant friendliness of the survey instrument. In addition, travelling to our participants provided us with a glimpse of the suburbs in which the students lived, from the architecture and street grooming to the availability of public transport and shops. These things, while not directly related to the aims of the study, helped us to have a better understanding of the worlds in which our participants lived.

Having visited the different school settings, we were able to see the kind of facilities and natural environment that surrounded students in their everyday life. Seeing trophy displays and students' art works gave us some ideas about subtle differences in the various school cultures. Talking to the staff members of the schools further demonstrated that there were not only differences in organisational culture, but also in professional attitudes. As such, the career advisers of the participating schools provided valuable information which allowed us to form preliminary ideas and some hypotheses as to potential sources of career choice challenges experienced by their students.

For instance, the career adviser from School E voluntarily offered her time in explaining the career education program provided by her school, as well as their communications with parents, universities and industry representatives. The career adviser from School D, however, briefly mentioned that her students do not really need career education classes until the final part of Year 12 due to new legislation which encourages school students to stay at school until they are 17 years old (Reid & Young, 2012). Although the sample of five schools was too small to draw generalisable conclusions, the inclusion of focus groups allowed us to immerse ourselves in the world of our research subjects and improve development of the survey instrument which was to be used in the next phase of the project.

The final version of the questionnaire comprised five main sections covering both personal and environmental contexts in which students were forming their career preferences. These sections included questions concerning (i) the personal backgrounds of students and their families, (ii) students' school experiences, (iii) future career aspirations, (iv) knowledge about career guidance resources and experience of their use, and (v) work experience. Due to variations in the developmental stages and communication skills

of Year 9-12 students as prospective participants of the survey (Borgers, De Leeuw, & Hox, 2000), we tried to keep the number of questions to a minimum with an estimated completion time being 10-15 minutes. The survey included 29 main questions and 37 'skip/display logic' questions, which were presented to students or skipped depending on their previous responses.

As previous international research observed high non-response rates to career aspirations questionnaires (Sikora & Saha, 2009), our task was, firstly, to make participation in the survey desirable and, secondly, to ensure the user friendliness of the final survey instrument in order to improve participant retention. With the first goal in mind and knowing from focus group discussions that music plays an important role in lives of many young people, we decided to include iPod touch and three iPod shuffles as incentives for survey participation. In order to keep students from all backgrounds motivated and engaged with the survey through to completion, we arranged our questions in a way that made them easy to read, comprehend and respond to (as suggested by Burns & Bush, 2010). The questions were presented such that less mentally demanding constructs capturing objective measures such as age and gender were placed at the beginning of the questionnaire, with more complex subjective measures, such as amount of certainty in one's career choice, towards the end.

In order for the questionnaire to be visually appealing, it was designed in Qualtrics software. Not only did it provide a wide range of design styles and response formats, it also allowed for the incorporation of customised images alongside particular questions. For example, we noticed in our focus group discussions that, in some cases, students recalled the visual appearance of some career guidance resources, but could not remember the name of said resources. Thus, when survey questions asked about awareness of web-based career guidance programs, we provided logos of those online resources as visual clues. According to Lim (2014), Information Communication Technologies (ICT) have become an integral part of students' lives and participants in our focus groups confirmed this statement with references to their use of technologies for both school work and their own social networking and entertainment. Thus, it was decided that the questionnaire will be administered online and dissemination of the information resulting from the survey would be provided to students and their families via school newsletters (which, in most cases, were distributed electronically).

Conclusion

The career decision-making of Australian youth affected by post-GFC economy continues to be a hotly debated topic among practitioners and policy makers. A number of recent government initiatives have been developed and implemented to address perceived attitudinal barriers. The success of such strategies and whether they are targeting the right groups at the right time is therefore an important topic of research. This doctoral study draws on Amartya Sen's theory of human capability to investigate who is and is not active in determination and what characterises those who are not. As it is difficult to measure abstract concepts such as human agency, this paper describes the implementation of the mixed-method research design that utilizes focus groups to inform the development of a survey aimed at students in the final four years of secondary school (Years 9-12). Themes identified in the process of focus groups data analysis informed a number of survey constructs, and provided us with information about the diversity of our participants. This alerted us to the complexity of response options that we would need in order to capture the full range of student responses, ensuring that important group differences were not conflated. The wide range of communicated students' experiences also allowed us to design a more relevant variety of possible response options in the questionnaire. Our findings helped to augment and improve the quality and participant-friendliness of the previously developed draft of the survey, which was based on existing literature relevant to career choice investigation and capability measurement.

References

- Alkire, S. (2005). Subjective Quantitative Studies of Human Agency. *Social Indicators Research*, 74(1), 217-260. doi: 10.1007/s11205-005-6525-0
- Australian Bureau of Statistics. (2011). Fifty years of Labour Force: Now and then *Australian Social Trends* (Vol. December 2011). Canberra: Australian Bureau of Statistics.
- Australian Curriculum Assessment and Reporting Authority. (2012). *My School: Guide to understanding ICSEA*. Sydney: Retrieved from http://www.acara.edu.au/verve/resources/Guide_to_understanding_ICSEA.pdf.
- Australian Curriculum Assessment and Reporting Authority. (2013). *My School Fact Sheet: About ICSEA*. Sydney: Retrieved from http://www.acara.edu.au/verve/resources/Fact_Sheet_About_ICSEA.pdf.
- Australian Government Department of Education. (2013, 14 November 2013). Career Bullseye posters. Retrieved 13 July, 2014, from <https://www.education.gov.au/career-bullseye-posters>
- Board of Studies New South Wales. (2008, 13 October 2008). Work Education. Retrieved March 07, 2013, from http://www.boardofstudies.nsw.edu.au/syllabus_sc/work-education.html
- Borgers, N., De Leeuw, E., & Hox, J. (2000). Children as Respondents in Survey Research: Cognitive Development and Response Quality. *Bulletin de Méthodologie Sociologique*, 66(1), 60-75. doi: 10.1177/075910630006600106
- Braconier, H., G. Nicoletti, & Westmore, B. (2014). *Policy Challenges for the Next 50 Years*: OECD Publishing.
- Burnett, D. (2013). Motivation and aspiration: what's the point? Retrieved from <http://www.theguardian.com/science/2013/nov/15/motivation-and-aspiration-whats-the-point>
- Burns, A. C., & Bush, R. F. (2010). *Marketing research*: Prentice Hall.
- Cameron, R. (2010). Is mixed methods research used in Australian career development research? *Australian Journal of Career Development*, 19(3), 52-66.
- Carter-Wall, C., & Whitfield, G. (2012). The role of aspirations, attitudes and behaviour in closing the educational attainment gap.
- Creswell, J. W. (2003). *Research design: qualitative, quantitative, and mixed method approaches*: Sage Publications.
- Creswell, J. W. (2005). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*: Merrill.
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314-321. doi: 10.1111/j.1365-2929.2006.02418.x
- Galliot, N., & Graham, L. J. (2014). A question of agency: applying Sen's theory of human capability to the concept of secondary school student career 'choice'. *International journal of research and method in education*, 37(3), 270-284.
- Graham, L. J., Van bergen, P., & Sweller, N. (2014). To educate you to be smart': disaffected students and the purpose of school in the (not so clever) 'lucky country'. *Journal of Education Policy, ahead-of-print*, 1-21.
- Hawkins, C. (2014). The Graduate, the Globetrotter and the Good Samaritan: adolescent girls' visions of themselves in early adulthood. *The Australian Educational Researcher*, 41(5), 565-583.
- HEPPP. (2014). Higher Education Participation and Partnerships Program. Retrieved 30 October 2014, from <http://www.bulletpoint.com.au/heppp/>
- Hirschi, A., Niles, S. G., & Akos, P. (2011). Engagement in adolescent career preparation: Social support, personality and the development of choice decidedness and congruence. *Journal of Adolescence*, 34(1), 173-182.
- Howard, K. A. S., Carlstrom, A. H., Katz, A. D., Chew, A. Y., Ray, G. C., Laine, L., & Caulum, D. (2011). Career aspirations of youth: Untangling race/ethnicity, SES, and gender. *Journal of Vocational Behavior*, 79(1), 98-109. doi: <http://dx.doi.org/10.1016/j.jvb.2010.12.002>
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using Mixed-Methods Sequential Explanatory Design: From Theory to Practice. *Field Methods*, 18(1), 3-20. doi: 10.1177/1525822x05282260
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research.

Journal of mixed methods research, 1, 112-133.

- King, N., & Horrocks, C. (2010). *Interviews in Qualitative Research*. London: SAGE Publications.
- Lim, M. (2014). How Singapore teachers in a pioneer 'School of the Future' context 'deal with' the process of integrating information and communication technology into the school curriculum. *The Australian Educational Researcher*, 1-28. doi: 10.1007/s13384-014-0153-0
- Miles, M. B., & Huberman, M. A. (1983). *Qualitative Data Analysis*. Beverley Hills, CA: Sage.
- O'Cathain, A., Murphy, E., & Nicholl, J. (2010). Three techniques for integrating data in mixed methods studies. *BMJ*, 341. doi: 10.1136/bmj.c4587
- Reid, C., & Young, H. (2012). The new compulsory schooling age policy in NSW, Australia: ethnicity, ability and gender considerations. *Journal of Education Policy*, 27(6), 795-814. doi: 10.1080/02680939.2012.664287
- Ryan, G. W., & Russell, B. H. (2003). Techniques to Identify Themes. *Field Methods*, 15, 85-109. doi: 10.1177/1525822X02239569
- Savickas, M. L. (1997). Career Adaptability: An Integrative Construct for Life-Span, Life-Space Theory. *The Career Development Quarterly*, 45(3), 247-259.
- Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs*. (pp. 35-37). Windsor, UK: NFER-NELSON.
- Seidman, I. (2006). *Interviewing As Qualitative Research: A Guide for Researchers in Education And the Social Sciences*: Teachers College Press.
- Sen, A. (1995). *Inequality reexamined*: Oxford University Press.
- Sikora, J., & Saha, L. J. (2009). Gender and professional career plans of high school students in comparative perspective. *Educational Research and Evaluation: An International Journal on Theory and Practice*, 15(4), 385 - 403.
- Smith, L. (2011). Experiential 'hot' knowledge and its influence on low-SES students' capacities to aspire to higher education. *Critical studies in education*, 52(2), 165-177.
- Stiglitz, J. (2012). *The price of inequality*. US: WW Norton & Co.
- Super, D. E., & Knasel, E. G. (1981). Career development in adulthood: Some theoretical problems and a possible solution. *British journal of guidance and counselling*, 9(2), 194-201.
- Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social & behavioral research*: SAGE Publications.
- Vondracek, F. W., Lerner, R. M., & Schulenberg, J. E. (1986). *Career development: A life-span developmental approach*. Hillsdale, NJ: Erlbaum.

Appendix 1

Topics for focus group discussion in phase 1

Introduction:

Can you please introduce yourself – tell us your name and suburb you live in? Are you born in Australia? Where were your parents born?

Topic 1

Let us start with some questions related to what you like doing...

- Do you like school? What do you like or dislike about it?
- What are your favorite subjects? Why? What do you like about them?
- Is there any after school activity that you like to participate in?
- Are you good at your favorite subjects/*after school activity*? How do you know if you are good or not?
- What else do you like to do after school? Do you have any special interests or hobbies?

Topic 2

- And what do you want to do when you finish school?
- Why do you want to be ?
- What do you have to do to become a ?
- And what subjects are you learning at school that you think might help prepare you for that?
- Is there anybody who influenced you to choose ?
(*if you didn't make a choice: Is there anybody whom you admire? What do they do? When do you think is a good time to make a career choice?*)
- Do your parents, or the kinds of jobs that they do, influence your career choice in any way?

Topic 3

- Have you been to career education classes or had career advice at your school? Can you tell me what happens in those classes/meetings?
- What did you learn? Was it useful or helpful for you? In what way? Why?

Topic 4

Now let's talk about the future (about a **good life**):

- What do you need to **have** in your adult life to feel good?
- Do you think these will be enough? Is there anything else you will need?
- And what do you think you will need to **do** to feel good?
- What else you can do that will make you feel good?