

Parents influencing secondary students' university aspirations: A multilevel approach using school-SES

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Students' university aspirational capacity and expectancies are key factors in predicting future university participation. Aspirations and expectations to attend university are strongly influenced by parent educational socialisation and school culture. This study investigates associations between students' university discussions with parents and their aspirations and expectations for university, and whether this link is particularly salient for students from disadvantaged schools. As well, differences in students' exposure to university are examined. Students (N = 548, 57% female) from Perth's south-west metropolitan region in Western Australia were surveyed. Multilevel analysis revealed that students from low socio-economic status (SES) schools who reported more frequent university discussions with parents had higher aspirations and expectations for university than students from similar SES schools who had fewer university discussions with parents. Furthermore, university discussions with parents predicted higher levels of aspirations for university and this link is stronger for students from lower SES schools. The effect of school-SES for the university expectations model was similar, though of weaker influence. Exposure to university is greater for students in high-SES schools. Therefore, students and parents in low-SES areas may benefit by increasing university exposure to develop knowledge and discussions about university, and support aspirations to grow expectations to attend university.

Introduction

Australia has a persistent under-representation of students from low socioeconomic backgrounds attending university (Bradley, Noonan, Nugent & Scales, 2008). Coupled with only 29 percent of Australia's 25 to 34-year-olds holding degree-level qualifications, this points to a notable under-representation of individuals from disadvantaged backgrounds (Bradley et al., 2008). Educational inequality continues to be a significant issue in Australia with only 16 percent of domestic enrolments in universities being from the lowest SES quartile (Bradley et al., 2008). As Australia's economy transitions and seeks to compete globally, there must be increased participation in higher education to produce the required highly skilled workforce (CSIRO, 2015). However, investment in higher education indicates Australia lags behind other similar developed countries (OECD, 2015) and Australia's position is not expected to improve in the near future. Current budgetary constraints and redirection of funds from the *Higher Education Participation and Partnership Program* (HEPPP; Department of Education and Training, 2016) means disadvantaged students will have fewer programs financed with the intention to increase access and participation in higher education. In order to continue the development of a highly skilled workforce, a shift in focus to support youth from disadvantaged backgrounds will be required to ensure increased economic capacity and advantage for those constrained by social immobility (Laming, 2012). Communities, including universities, will be forced to find ways to improve educational attainment without the benefit of additional financial

support. The salient question for equity practitioners will be: by what means can we shift focus to improve access and participation in university for students from disadvantaged backgrounds?

Aspirations, expectations and value

Currently, students from lower socioeconomic backgrounds are nearly half as likely to enrol in university education compared with their higher socioeconomic counterparts (Bradley et al., 2008; Laming, 2012). The discourse that develops around the disparity for post-secondary continuation rates relates to the differences in students' *aspirational* levels; it is believed that high levels are required for enrolment in university education (Bradley et al., 2008). *Educational aspiration* has been conceptualised as the desired level of education a student would like to achieve (Reynolds & Pemberton, 2001). However, while it is often perpetuated that low-SES students do not aspire to tertiary education (Raco, 2009), recent reports suggest that aspirations for tertiary education are high and well established for students despite socioeconomic status (Mello, 2009; Prodonovich, Perry & Taggart, 2014). Aspirations, however, cannot be considered in isolation; students' *expectations* to attend university are distinct from aspirations and play a predictive role in their post-secondary pathways (Johnston, Lee, Shah, Shields & Spinks, 2014).

Students' educational expectations are influenced in ways that aspirations are not, specifically, by economic contexts and availability of resources (i.e. *cultural capital*; Bourdieu, 1986), and the value that families and communities place on education in ways that aspirations are not (Johnston et al., 2014). Expectations to attend university play an instrumental role in student motivation to transition from high school to university (Guo, Parker, Marsh & Morin, 2015). Expectations to transition to university are driven by students' perceived likelihood of success as well as the intrinsic *value* they hold for university education (Guo et al., 2015). Expectations of success and subjective task value are major components of the expectancy-value model theorised by Eccles and colleagues and have multiple sources of influence (Eccles, 2009; Wigfield & Eccles, 2000). Eccles (2009) theorised that expectation to go to university (also known as college) and the value of a university degree are directly related to the identity formation process; personal identity (i.e., being personally confident of doing well and personally valuing a university degree) and collective identity (i.e. being socially acceptable to have a university degree as per gender, race, or social class). Collective identity formation is influenced by *neighbourhood factors* (Johnston et al., 2014). Ultimately for students the decision to go or not to go to university is made considering a range of influences. Expectancy-value theory posits that beliefs and values of significant others can act as a source of reinforcement, information, and guidance in shaping the value that students place on university education (Eccles, 2009). Thus, limited exposure to, knowledge about, and experience with university for significant others (family) in young people's lives, may negatively influence students' expectations to go to university, just as extensive exposure to university will likely positively influence student expectations. Therefore the gap between initial aspirations and later expectations to be able to attend university for students in low-SES schools compared with students from high-SES schools is likely to widen (Kirk et al., 2012). Thus, a combination of factors related to a student's own beliefs, family influences,

and school culture will act together to determine the gap between aspirations and expectations and ultimately to influence subsequent university attendance or not (Kintrea, St Clair & Houston, 2011).

Parental factors

School-family interactions are multidimensional, and the relationship between parental involvement and student achievement varies (Harris & Goodall, 2007). Much of this variation depends upon individual characteristics, and the context in which individuals live (Bronfenbrenner & Morris, 2006). A parent's involvement in their child's education is informed by personal attitudes and beliefs, educational experiences, and interactions with the school community (Fantuzzo, McWayne, Perry & Childs, 2004; Harris & Goodall, 2007, Reynolds & Clements, 2005). Moreover, studies examining parental academic involvement in their children's education, specifically *academic socialisation*, indicate that it is a significant positive predictor of student academic aspirations and achievement (Hill & Tyson, 2009). Academic socialisation refers to parental communication and transmission of academic aspirations and value of education to their children (Hill & Tyson, 2009). Academic socialisation increases the exposure of students to parental values that students may internalise, which can act to direct and guide their academic goals and pursuits, and build their *social capital* (Bourdieu, 1986; Hill & Tyson, 2009). Social capital can be conceptualised as the potential social resources a student has access to within their community (Bourdieu, 1986). Indeed, parental expectations, involvement with schoolwork, and support of student autonomy positively influence high school completion and are an imperative component of the development of student aspirations to attend university (McCarron & Inkelas, 2006; Mello, 2009; Rumberger, 1995; Vallerand, Fortier & Guay 1997).

However parents' communication of high expectations to go onto university does not always support student aspirations to go to university. A recent study by Low (2015) highlighted conditional findings of the benefits of parental encouragement for higher education, being, in part, dependent upon socioeconomic status. Low reported that students from low-SES backgrounds, whose parents communicated high expectations for university attendance while strongly discouraging alternative trajectories (e.g., apprenticeship training) were more likely to report less enthusiasm for university education. Low's findings have highlighted the need for parental encouragement and knowledge of university pathways to be characterised by bidirectional, collaborative discussions in order for this involvement to foster social capital (Bourdieu, 1986). Thus, through active directed discussions about the many pathways into university, parents can positively promote university as a post-secondary option.

Parental involvement with their children's education can also take many forms conveying both explicit and implicit expectations (Low, 2015). Parental discussion about university is often included under overarching constructs such as parental encouragement or parental involvement (Hill & Tyson, 2009; Low, 2015). Broad constructs limit the capacity of scholars to disentangle what factors related to parental involvement specifically enable students to enrol in university. It may be specific discussion between parents and their

children about university rather than discourse around general career and post-secondary study options that result in an outcome of university enrolment. Furthermore, parents' knowledge of, values for and exposure to university, which all feed into parent discussions about university, cannot be considered in isolation from the students' school environment. That is, the school's higher education culture strongly influences student aspirations and expectations for university (Perna et al., 2008).

School culture

A school's resources and ability to support students' university pathways may also explain the current gap for low-SES students between aspirations and expectations to study at university (Kirk et al., 2012; Perna et al., 2008). Parents who have little university exposure are limited in their ability to provide accurate information and guidance for navigating university entry and requirements (Kirk, Lewis-Moss, Nielsen & Colvin, 2011). Given that first-in-family (for study at university) status is more prevalent in low-SES regions compared to high-SES regions, low-SES region students are therefore less likely to be provided adequate university exposure and academic socialisation; this is a strong limiting factor on the accrual of social capital (Kirk et al., 2011; Sanderfur, Meier & Campbell, 2006). For these low-SES students, schools are an independent and critical source of information and support for aspirations to attend university. Thus, schools become pivotal in the accumulation of social capital related to the benefits of university education for low-SES students (Sanderfur, et al., 2006).

Research by Rowan-Kenyon, Perna and Swan (2011) examined high school environments and student aspirations and showed that student educational aspirations was positively associated with the quality and availability of school resources. These resources included career counseling and university preparatory curriculum. Resource availability is a limiting factor for low-SES schools, whereby lower SES schools have fewer resources to allocate to programs to prepare students for transition from high school (Rowan-Kenyon, Perna & Swan, 2011). Teachers can also be a source of knowledge about the workings of university, considering their undergraduate training occurred at a university. However, the first cohort of teachers in Western Australia to enter university via an alternative pathway, rather than direct entry via external exams, was in 2008 (Pilkington & Lock, 2012), therefore the majority of subject teachers would have limited knowledge of alternative pathways to study at university and their discussions with students would reflect that shortfall. As a result, students who attend low-SES schools often report limited and sometimes misguided understanding of educational pathways for their desired occupation (Rowan-Kenyon, Perna & Smith, 2011). Such findings suggest that the educational culture of an entire school environment can influence university pathways and occupational choices for students (Bordeiu, 1986; Sandefur, Meier & Campbell, 2006).

Community factors such as family SES, school financial resources, and the provision of skills and knowledge to navigate university pathways impact student university aspirations and expectations (Prodonovich et al., 2014). Low-SES populations are at risk of experiencing significant barriers to university, which can result in financial instability and a general lack of awareness of how higher education operates. Students and their families

from these regions have limited capacity to recognise the utility of a degree for career aspirations (Kirk et al., 2011). For low-SES students, this means that while they may aspire to attend university, they may not expect to be able to achieve that goal. Although the effect of parental involvement on student aspirations has been extensively researched (e.g. Fantuzzo et al., 2004; Hill & Tyson, 2009; LeCroy & Krysik, 2008; Low, 2015; Qian & Blair, 1999; Rumberger, 1995; Suizzo et al., 2012; Taylor, Clayton & Rowley, 2004; Vallerand et al., 1997), there is comparatively less research on specific factors which will support the outcome of students enrolling in university. Therefore research is required to investigate how the social capital provided by both schools and parents could interact and impact upon student university education aspirations and expectations (Sandefur et al; Meier & Campbell, 2006).

The current study

This research aims to add to existing literature regarding factors that contribute toward the substantial under-representation of low-SES individuals at Australian universities. The southwest corridor of metropolitan Perth, Western Australia, is one such region characterised by low degree-level qualification attainment (15%) for 25 to 34-years-olds, compared to the rest of metropolitan Perth (30%; Australian Bureau of Statistics, 2011). Parental involvement has been shown to be a strong predictor of eventual higher education participation. However, particular aspects of parental involvement, namely students discussing university study with their parents, have not been investigated. Therefore, differences in the predictive utility of parental discussions about university on students' university education perceptions will be investigated across SES levels in the region. As students who aspire towards university may not realistically expect to obtain entry (Hill & Tyson, 2009), this article examines both students' aspirations and expectations to attend university. We hypothesise that higher parental involvement, specifically frequency of discussions about university with parents, will be associated with higher aspirations and expectations towards university. We further hypothesise that these associations will be stronger for lower SES school students, compared to higher SES school students. In order to contextualise these hypothesised effects, we also will examine differences in university exposure between lower and higher SES school students.

Method

Participants

Respondents were 548 (female $n = 310$) high school students from the Southwest corridor of metropolitan Perth, Western Australia (Table 1). The sample comprised predominantly Australian, Caucasian students from below-average SES schools, whose parents primarily spoke English at home. Slightly more than one-third reported that they would be first-in-family to attend university. Respondents were sampled from 12 of the total 23 schools in the region where the *Murdoch's Aspirations and Pathways for University* (MAP4U) project is located. MAP4U is a Federal government funded project with a suite of programs designed to grow and support university aspirations in the region. Respondents completed the survey during semester one of 2014.

Table 1: Participant demographics

		n	%
SES	Lower-middle quarters	402	73.4
	Upper-middle quarters	146	26.6
School year level	Year 7	25	4.6
	Year 8	60	10.9
	Year 9	35	6.4
	Year 10	138	25.2
	Year 11	148	27.0
Cultural identity (a)	Year 12	142	25.9
	Caucasian	447	81.6
	ATSI (b)	29	5.3
Language spoken at home	Other	95	17.4
	English	507	92.5
Place of birth	Other	37	6.8
	Australia	388	70.8
First in family	Overseas	152	27.7
	Yes	210	38.3
	No	297	54.2
	Don't know	17	3.1

a. The cultural identity measure was a multiple response item, so some participants have identified with multiple cultural identities.

b. Aboriginal and/or Torres Strait Islander

Measures

Measures used in this study were taken from the 2014 *Murdoch Tertiary Aspirations Survey* (MTAS) administered to students at schools participating in MAP4U programs. The MTAS comprises items and scales from the *Youth Activity Participation Study of Western Australia* (YAPS-WA) survey (Blomfield & Barber, 2009) and *The Australian Survey of Student Aspirations* (TASSA) (Parke, Stratton, Gale, Rodd & Sealey, 2013). The self-report survey design comprised sets of Likert-type scales to measure student university aspirations, academic self-concept, school satisfaction, socialisation, and encouragement. Demographic measures such as gender, year level, and cultural indicators were also requested.

Gender was measured using a dichotomous response (Male = 0, Female = 1). For school-SES, the *Index of Community Socio-Educational Advantage* (ICSEA) was used. The index allows meaningful comparisons to be made between schools and is constructed from various factors that correlate with educational outcomes, including individual-level SES (Australian Curriculum, Assessment, and Reporting Authority [ACARA], 2015). The higher the ICSEA, the higher the SES of the school. ICSEA values for the current sample were published on the government *My Schools* website (ACARA, 2015). The ICSEA index has a mean of 1000 and standard deviation of 100. Schools in our sample ranged from approximately 880 to approximately 1080. School level SES has been used successfully in

multilevel analysis where individual level SES has been difficult to measure in a school student population (Blomfield & Barber 2011). The full range of ICSEA values was used for the multilevel analysis; however for the descriptive examination of university exposure the school-SES was dichotomised to compare lower and higher SES schools in the region.

University discussions with parents

University discussions with parents were assessed using one item. This measured the frequency with which the student talked with parents about the possibility of a university pathway post-high school, "How often do you talk about university with your parents/guardians/carers?" This item was assessed on a 5-point Likert scale (1 = Never and 5 = Often), where a higher value indicates more frequent discussions about university.

Academic self-concept

Academic self-concept measured students' beliefs about their general abilities at school. Items within the measure were drawn and adapted from existing scales (Marsh, 1992a, 1992b, 1992c) to measure academic self-concept, and showed acceptable internal consistency (Cronbach $\alpha = .72$). The scale comprised the mean of three items including "I have the ability to be good at most subjects if I try." Each item was measured using a 6-point Likert scale, (1 = Not at all true for me to 6 = Very true for me). Higher values indicate higher academic self-concept.

University aspiration

Student aspiration for university was measured using one item; "I want to go on to university after high school". The item was measured using a 6-point Likert scale, where 1 = Not at all true for me, to 6 = Very true for me.

University expectation

Student expectation to attend university was measured using the item "How likely is it that you will go onto University after high school?" The item was measured using a 7-point Likert scale, where 1 = Not at all likely to 7 = Very likely.

University exposure

Students' exposure to university was measured using a set of multiple response items that allowed participants to select the types of university-related experiences they had encountered. The item was "What experiences have you had with a university?" with six response options: I visited one with school/church/family; I know someone who goes to university right now i.e. family or friends; I sometimes play sport at a university; Someone from a university visited our school/ church/ youth centre; Never had an experience with a university, and Other. For those who selected "Other", space was provided to specify an open-ended response. Less than five per cent of participants selected "Other", with 16 (3%) of those indicating participation in a university enabling program. Thus, a "University Enabling Program" response was created. All remaining "Other" responses were identified and coded into the alternate fixed-response options. A sum score of experience with university, ranging from 0 to 5, was then calculated for each participant. A score of 0 indicated the individual had not experienced any form of contact with

universities or university representatives. A score of 5 indicated the individual reported experiencing all types of university exposure available as responses in the survey.

Procedure

Prior to data collection, ethical clearance was obtained and approval to conduct research issued from the university's Human Research Ethics Committee. Data were collected from high schools along the southwest corridor of Perth by letter of invitation to partake in the MAP4U programs. Recruitment of participants for the survey was at the discretion of each school, including the internal distribution of parent and student information and consent packs to students. All final participants provided both their own written consent and the parent/guardian's written consent before being surveyed. The rate of participation in the survey cannot be determined due to the administrative procedures to recruit being determined by the school.

The MTAS survey was administered during approximately 20 minute sessions at each school. The survey was conducted early 2014. The survey was administered using 30 iPads and an online survey software program, *SurveyMonkey*. Substitute paper and pen surveys were used if requested by schools. Participants were informed of their right to confidentiality and reminded that participation was voluntary.

Analysis plan

First, the bivariate correlations between the constructs were examined. Then, a series of multilevel models were estimated. Given the hierarchically nested structure of students within schools and our hypothesis concerning the main effects and interaction between school-SES (the group level variable) on the individual level association, a multilevel analysis was appropriate. As the students in the schools share the same actual and potential higher education resources and culture (i.e., *social capital*; Bourdieu, 1986), multilevel analysis enabled controls for the non-independence for the variables of interest (Raudenbush & Bryk, 2002). The multilevel analyses were conducted with the *HLM7* program (Raudenbush, Bryk & Congdon, 2011).

In order to test the links between individual characteristics (university discussions with parents), group characteristics (school-SES), and interactions (school-SES by university discussions with parents) and university aspirations and expectations, a series of two-level models were estimated following the steps outlined by Woltman, Feldstain, MacKay and Rocchi (2012). Gender and academic-self-concept were included in all models as covariates. Both continuous predictors at Level 1 (university discussions with parents and academic self-concept) were group-mean centred, and the Level 2 predictor (school-SES) was grand-mean centred. The within-person associations were modelled at Level 1, with separate models estimated for each of the within-person independent variables. The between-person variable, school-SES, was modelled at Level 2. Following the estimation of university aspirations and expectations by the within-person and between-person variables, cross-level interactions were investigated. If the group level variable is related to the variability of the within-person slopes, then cross-level interactions are present (Hox,

2002). To illustrate this, a significant cross-level interaction would indicate that the association between the within-person independent variable (i.e., university discussions with parents) and the dependent variable (i.e., university aspirations or expectations) significantly varied by the between-person group variable (i.e., school-SES). The data set had missing data for less than five per cent of the sample. Data that were missing were at least *missing at random* (MAR) and so were imputed using multiple imputation method, *expectation-maximisation* (Scheffer, 2002).

To illustrate the importance of school culture on students' post-secondary pathway perceptions, we dichotomised school-SES in our sample as per ACARA quarters (i.e., lower-middle quarter and upper-middle quarter; ACARA, 2015) and compared the two SES groups for exposure to university.

Results

University aspirations and expectations

Bivariate correlations and descriptive statistics for all variables are displayed in Table 2. Student aspirations and expectations for university were strongly positively correlated. University discussions with parents was strongly and positively correlated to university aspirations and expectations. University discussions with parents were moderately and positively significantly correlated with academic self-concept. All variables were somewhat skewed to the higher end of the scale.

Table 2: Correlations and descriptive statistics of study variables (N=521)

Variables	1	2	3	4	5	6
1. Expectation for university	-					
2. Aspirations for university	.75***	-				
3. School-SES	.17***	.22***	-			
4. Gender	.13**	.17***	0.04	-		
5. University discussions with parents	.57***	.62***	.25***	.17***	-	
6. Academic self-concept	.50***	.54***	0.08	-.00	.39***	-
Mean	5.13	4.81	977.29	0.56	3.27	4.81
SD	1.75	1.61	49.50	0.50	1.27	0.98
Minimum	1	1	-(a)	-	1	1.67
Maximum	7	6	-(a)	-	5	6.00

a. School ICSEA values are not provided to ensure confidentiality.

* $p < .05$; ** $p < .01$; *** $p < .001$

University aspirations and expectations by discussions with parents about university and school-SES

Multilevel modeling was used to investigate the hypothesis, that the link between parental discussions about higher education and university aspirations and expectations would be stronger for students from more disadvantaged schools. Results for the Level 1 analysis

showed that higher levels of university discussions with parents were significantly associated with university aspirations and expectations (see Table 3). Students who reported more frequent discussion about university with their parents reported higher aspirations and expectations for university than those who discussed university less frequently. Level 2 analyses showed that student aspirations and expectations for university varied as a function of school-SES. Specifically, higher school-SES was associated with higher aspirations and expectations for university. The interaction between university discussions with parents and school-SES was significant for university aspirations and approaching significance ($p = .059$) for university expectations. Firstly this trend indicates that as school-SES increases the link between university discussions with parents and university aspirations decreased, indicating that the positive link between university discussions with parents and aspirations was stronger for students from lower SES schools (see Figure 1). Secondly as the interaction between university discussions with parents and school-SES was marginally significant for expectations for university the strength of the positive link is reduced (see Figure 2.)

Table 3: Coefficients for the final model for both university aspirations and university expectations, testing the cross-level interaction between university discussions with parents (Level 1) and school-SES (Level 2).

		University aspirations		University expectations	
		Coefficient	SE	Coefficient	SE
Level 1 –	Intercept	4.92***	0.13	5.26***	0.15
Student	Gender	0.28**	0.10	0.19	0.12
	Academic self-concept	0.56***	0.06	0.56***	0.06
	University discussions with parents	0.39***	0.07	0.40***	0.08
Level 2 –	School-SES	0.01**	0.002	0.01*	0.01
School	University discussions with parents x school-SES (slope)	-0.004*	0.001	-0.003†	0.001

Note: † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1 displays the simple slopes for the association between university discussions with parents and university aspirations across levels of school-SES. The positive association between university discussion with parents and aspirations was strongest for students from lower SES schools, becoming weaker for students from higher SES schools. The intercept, however, was higher for higher SES schools.

Figure 2 displays the simple slope trends for the association between university discussions with parents and university expectations across levels of school-SES. The positive association between university discussion with parents and expectations was strongest for students from lower SES schools, and only marginally weaker for students from higher SES schools. The intercept, again, was higher for higher SES schools.

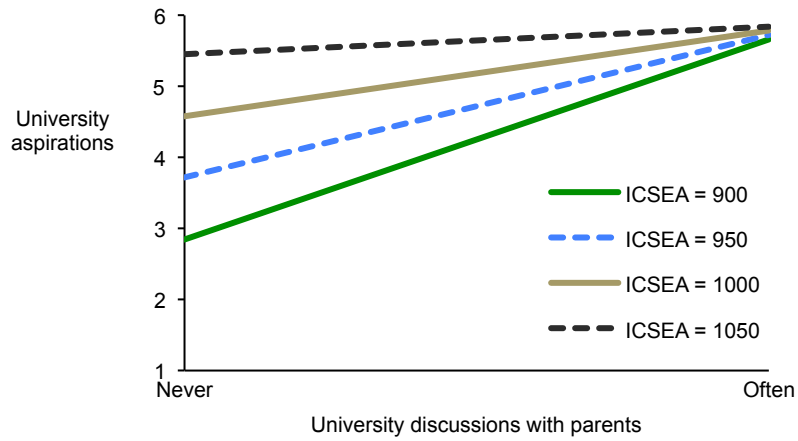


Figure 1: University aspirations - the interaction between university discussions with parents and school-SES in the model predicting university aspirations. Note: Slopes are modelled for four meaningful levels of ICSEA: one standard deviation below the standardised ICSEA mean (900); one half of one standard deviation below the standardised ICSEA mean (950); the standardised ICSEA mean (1000); and, half of one standard deviation above the standardised ICSEA mean (1050).

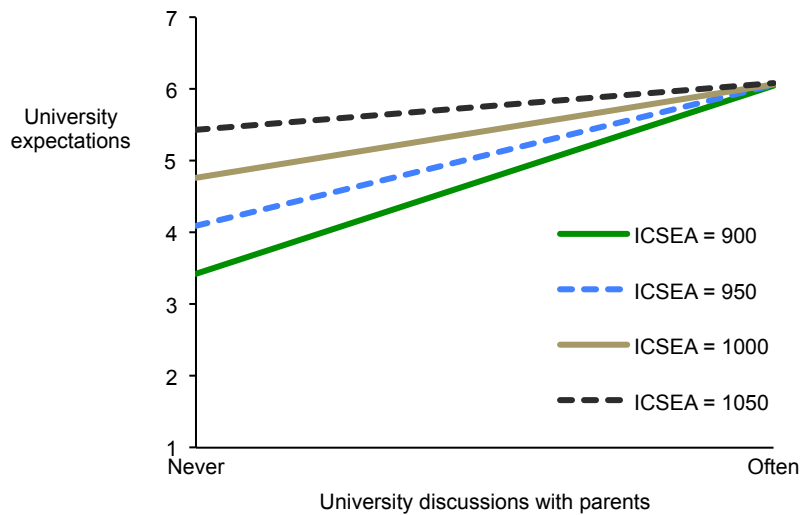


Figure 2: University expectations - the interaction between university discussions with parents and school-SES in the model predicting university expectations. Note. Slopes are modelled for four meaningful levels of ICSEA: one standard deviation below the standardised ICSEA mean (900); one half of one standard deviation below the standardised ICSEA mean (950); the standardised ICSEA mean (1000); and, half of one standard deviation above the standardised ICSEA mean (1050).

University experiences

A one-way between subjects ANOVA was conducted to compare lower and upper-middle quarter SES school students' university experience. Students attending upper-middle quarter SES schools ($M = 2.13$, $SD = .94$) reported, on average, significantly more university experience compared with the lower-middle quarter SES students ($M = 1.43$, $SD = 1.14$), $F(1, 528) = 42.60$, $p < .001$, $\eta^2 = .08$. The results suggest that school-SES may be associated with the frequency of university exposure a student is provided access to. With a medium effect size, lower-middle quarter SES students reported almost one university experience less compared to upper-middle quarter SES students.

In order to determine patterns amongst the university experience types between SES student groups, frequencies for individual responses were examined. Figure 3 shows the percentage of students in both the lower- and the upper-middle quarter groups who reported each individual type of university experience. With the exception of "I sometimes play sport at University", all other group frequency comparisons differ significantly ($p < .05$) using the chi-square test of independence. Significantly fewer lower-middle quarter SES students compared to upper-middle quarter SES students, reported prior visits to university, knowing someone who is currently attending university, attending a University Enabling Program, as well as visit from a university representative at their school. More than five times as many lower-middle quarter SES students reported having had no experience with a university compared to upper-middle quarter students. The extra exposure to university, or *touch points*, may be a contributing factor as to why students from higher SES schools in the region aspire and expect to attend university at similarly high levels across their reported frequency of university discussions with parents.

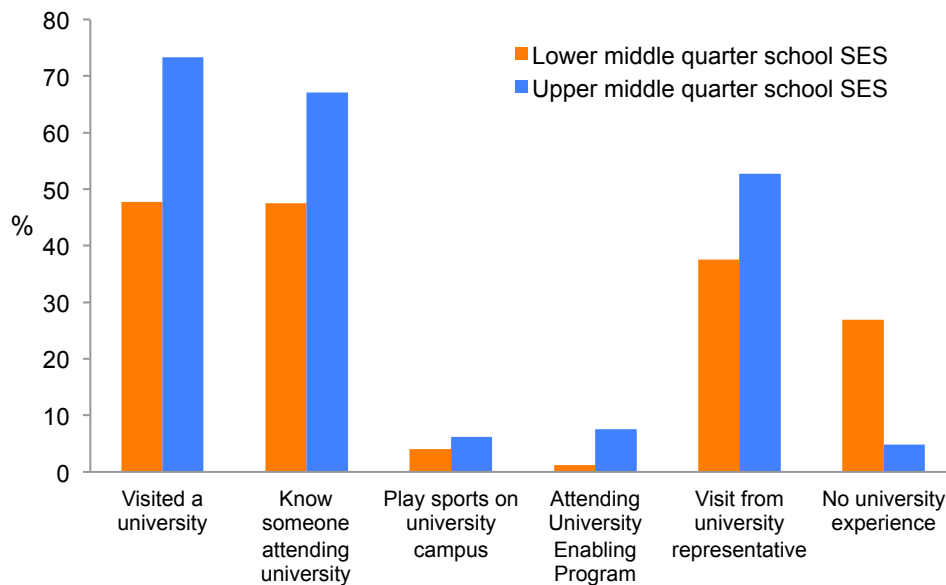


Figure 3: Percentage of lower and upper-middle quarter school-SES students who reported each type of university experience.

Discussion

Parental involvement has long been thought to encourage aspirations and expectations for university attendance (Hill & Tyson, 2009). This is particularly salient for students from low-SES backgrounds as they experience barriers when it comes to understanding the inner workings of university participation (Perna et al., 2008; Smith, 2011). Students from high-SES backgrounds, compared to low-SES backgrounds, are more likely to have parents who have attained a university education (Kirk et al., 2012), and as such, these parents will have experiential knowledge (i.e., *hot knowledge*; Smith 2011) about university and will be able to, through discussions about university, strongly influence their children's aspirations and expectation to go to university. However, their lower SES counterparts are more likely to have parents who have not been to university therefore, they have fewer opportunities to experience university discussion, which develops their aspirations and expectations for university attendance (Sanderfur, et al., 2006). Even though these parents have not attended university, findings from research suggest that parents from lower SES areas still encourage academic achievement and involve themselves in their children's academic socialisation (Hill & Tyson, 2009; Low, 2015; McCarron, & Inkelas, 2006). Therefore, in the present study we had two major goals: to examine whether university discussion with parents positively predicted higher aspirations and expectations towards attending university; and, to investigate whether this link was particularly salient for students from lower SES schools. We also examined differences in students' reported exposure to university as a function of their school's SES.

As hypothesised, students who reported more frequent discussion about university with their parents reported higher aspirations and expectations for university attendance, compared with those who reported fewer discussions about university. Our second hypothesis was partly supported; university discussions with parents were more important for lower SES students' university aspirations compared to higher SES school students' aspirations. For university expectations, however, discussions were equally as important across levels of school-SES. Furthermore, in contextualising the multilevel effects our results for student university exposure, it was revealed that students attending lower-middle quarter SES schools reported fewer instances of university exposure when compared to upper-middle quarter SES students. This may explain why parental discussions play a critical, compensatory role for lower SES school students' development of university aspirations.

Our results indicate that the association between parental discussions and university aspirations for higher SES students was not as strong as for lower SES students. It may be that the higher SES school culture provides the context to develop aspirations to university. Indeed previous research suggests schools often have unequal distribution of resources that are conducive to university engagement (Perna et al., 2008), therefore, it is possible that greater availability of resources in higher SES schools dilutes the critical role played by parental discussions for these students' university aspirations. Conversely, for lower SES students, it is important for parents to fill the gap left by the limited university exposure opportunities available to these students in lower SES schools. However, filling the gap poses a challenge, as parents of lower SES students are less likely to have

experiential knowledge about university (i.e., *hot knowledge*; Smith 2011). This may explain why parents from lower SES areas have fewer discussions about university with their children. If parents are to fill this gap, they will require accurate and detailed information about pathways and protocols surrounding university attendance (i.e., *cold knowledge*; Smith, 2011). Cold knowledge provided to lower SES parents may afford the same opportunities for discussions about university that are frequently afforded to higher SES students. Such resources could include career counseling, the provision of alternative entry pathway support programs, and exposure to university through parent-school-university partnerships. Partnerships developed between the MAP4U project, high schools in the southwest metropolitan corridor of Western Australia and Youth Connect is one such example whereby parents have attended workshops and activities to increase their knowledge about university. In particular the program *Parents as Career Transition Support* (PACTS; Youth Connect, 2014), was supported through the region to provide knowledge for parents to navigate career options collaboratively with their children. Such a program could be modified to specifically target supporting university transition for lower SES parents who report low levels of hot knowledge about university.

The exploratory results for the differences for instances of university exposure between SES groups indicated that students attending lower-middle quarter SES schools reported exposure to fewer university experiences than their upper-middle quarter peers. These results may indicate that the environments of upper-middle quarter SES schools are more conducive than lower-middle quarter SES schools for university attainment due to increased access to tangible university experiences. In fact, upper-middle quarter SES schools had a greater percentage of students reporting on all instances of university exposure (i.e. knowing someone from university, having visited a university, playing sport on a university campus, and having someone from a university visit their school) compared to lower-middle quarter SES schools. Furthermore, more lower-middle quarter SES students reported never having experienced university when compared to the upper-middle quarter SES students. For students attending a lower resourced school and reporting fewer experiences with university, university discussions with parents play a critical role in supporting these students' aspirations and expectations. Without the same exposure to university and support that upper-middle quarter SES students report, instances of bidirectional, collaborative discussions with parents about university becomes more instrumental for aspirations and expectations..

These results are consistent with existing research (Rowan, Perna & Swan, 2011), and the school resource model posited by Perna (2006). The school resource model posits that multiple layers of contexts, including university- and occupation-related information in a student's immediate environment, and career counselling and university preparatory curriculum in their school environment, collectively impact upon the development of university aspirations and expectations (Perna, 2006). The results also support existing literature that higher SES schools possess more resources in the form of university exposure, while lower SES schools offer students less exposure to university.

Implications

The results add empirical support to the theorised distinction between university aspirations and expectations (Gale & Parker, 2014; Gale & Parker 2016; Gottfredson, 1981). The different pattern of results between the aspiration and expectation models highlights the varying effect of cultural and social capitals on university aspirations and expectations for students at higher SES schools. Previous research has shown that students from lower SES regions do aspire to university (Prodonovich et al., 2014; Gale et al., 2013), adjusting common rhetoric that there is a poverty of aspirations in these areas (Prodonovich et al., 2014). However, often, for students in these lower SES regions, there is a gap between their aspirations for a university degree and their perceptions of realising this goal (i.e., expectations). Our results provide further evidence for this gap. However, we build upon knowledge that within this study region there are differences in the way that aspirations and expectations are built and supported by the social and cultural elements that exist in students' environment. Because the pattern of results differed for student aspiration and expectation for university across different levels of SES, we conclude that aspirations and expectations for university in the region are distinct constructs and are differentially influenced by the students' immediate cultural and social environment. Indeed, our findings indicate that for those students from lower SES schools, social capital (see Figures 1 and 2 slopes) is instrumental for building perceptions of post-secondary transition due to lower cultural capital (see Figures 1 and 2 intercepts).

Despite comparatively high university aspirations amongst lower SES students there remain a proportion of students who do not aspire to university. Although it is speculative that these students could aspire for university with appropriate support, our results demonstrate the importance of university discussion with parents for lower SES school students' aspirations. For expectations, however, parental discussions about university were important for all students regardless of school-SES. These findings support Johnston et al. (2015) who suggested that students from homogenous neighbourhoods share similar social, economic and cultural conditions, which affect their education and employment pathways. Given the disadvantaged region from which this sample is derived, the result that parent discussions are influential for all students' expectations regardless of school-SES suggests that even students at higher SES schools in disadvantaged regions are affected by homogenous neighbourhood factors. Specifically, students' realisations of a university pathway are informed and conditioned by the prevailing culture of the region and as such, discussion with their parents provides the social capital required for them to expect to attend university, just the same as the discussions do for students from lower SES schools in the same region.

During the last decade school staff have experienced increasing workloads (Rowan-Kenyon, Perna & Swan, 2011), so the implementation of new strategies to increase parental knowledge about university, without adequate resourcing will be challenging. An innovative strategy may be to look to universities to develop and engage outreach strategies that target parents with the aim to build their knowledge and capacity to support their child's transition to university. This could be done by providing university exposure opportunities to parents, similar to those currently offered to students, with the aim to

normalise parents' attitudes and beliefs about university education. Further, by providing factual and up to date information about university pathways, these types of programs could build the capacity for parents to broaden the educational horizons of their child. By illuminating what is possible for the child, parents can then more effectively support their child's aspirations to university and consequently transition their child's aspirations to expectations for university and ultimately attendance at university.

Limitations and further research

The interpretations stemming from the results of the present study are limited by several methodological issues. Specifically, when considering the implications drawn from the effect of school-SES, the restricted range of school ICSEA in the study region may reduce the generalisability of the findings beyond the measured range of SES. The sample's school-SES ranged wholly within the middle quarters of the ICSEA scale (ACARA, 2015). More specifically, the majority of the sample was from the schools in the lower-middle quarter of ICSEA. Whilst this is representative of the region whose ICSEA ranges between 850 and 1080, the limitation warrants replication using a more diverse range of ICSEA.

Similarly, there is no comparison group to compare homogeneity, or indeed heterogeneity, of the results. In order to determine how the effects of cultural and social capital on university aspirations and expectations may differ for students in both the top and bottom quarters of the ICSEA scale, it is important to replicate these results using a comparative research design. Future research should consider different combinations of samples for comparison. For instance, comparing a similar sample used in this study with a sample comprising other regions across Australia and a sample from both very low and very high SES would lead to further understanding around the influences of parental involvement and aspirations and expectations for university.

Furthermore, the current study measured only the types of university-related exposures the students had encountered, but not the frequency or quality of their engagement with those experiences. For example, one student could have reported experiencing all options, but may have experienced each type of university exposure only once. This student would have scored highest on the summed scale of university experience. Conversely, another student may have scored low because they only visit a university with their school. However, their engagement with the university may be regular and more systematic resulting in a stronger quality of exposure than the student who scores high but only engages at a surface level. Future research should aim to measure both the frequency and quality of university exposure to determine whether or not there is an effect of *dose*.

Lastly, the analysis is cross-sectional, so it is not possible to determine the direction of effects between university parent discussions and aspirations or expectations for university. It is possible that students from lower SES school who have high aspirations and expectations for university engage in discussions with their parents because of their aspirations. Future research requires longitudinal data with cross-lag analysis to determine the direction of influence.

Conclusion

The results of this study indicate the importance of parents' discussions about university with their children while they are in high school. Furthermore, discussions about university become particularly salient to support aspirations and expectations to go to university for students from lower SES schools. Even for higher SES schools located in a disadvantaged region, parental discussions about university are particularly important for students' expectations, because these discussions protect against prevailing neighborhood factors, which can discourage the value of university study. Furthermore, this increase in dialogue about university may compensate for limited exposure to university for under-resourced schools. Students and parents in low-SES areas may benefit from increased university exposure to develop knowledge and discussions about university and support aspirations to build expectations to attend university.

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