



University enabling programs while still at school: supporting the transition of low-SES students from high school to university

Lynette Vernon^{1,2} · Stuart J. Watson¹ · William Moore¹ · Sarah Seddon¹

Received: 2 December 2017 / Accepted: 29 October 2018 / Published online: 20 November 2018
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Abstract

University participation rates are significantly lower in low socioeconomic status (SES) areas in Australia. Specifically, rates differ between-schools and within-schools, where inequalities in opportunities to access university pathway programs exist. The aim of this study was to test whether academic encouragement supported students' school satisfaction and increased their desire for, expectation of and belief in the possibility of university study and whether differences were evident depending on pathway of study: the ATAR pathway versus a Year 12 access enabling pathway program called TLC110. A sample of 257 high school students (58% female) from 18 high schools, within a low-SES area of outer metropolitan Perth, Western Australia, were surveyed. Teacher encouragement was found to be positively associated with school satisfaction and, in turn, supported university desire, expectation and belief for ATAR students but not for TLC110 students. Qualitative data were collected ($n=9$) to contextualise the inclusivity of TLC110 for high school students from low-SES backgrounds to support aspirations for university.

Keywords Aspirations · University enabling programs · Widening participation · High school students · Transition to university

The Australian education system is structured around high-stakes testing and result-based enrolment opportunities for university entry (Blondal and Adalbjarnardottir 2012; Harvey et al. 2016; Smyth et al. 2004). Students who are following academic

✉ Lynette Vernon
l.vernon@murdoch.edu.au; lynette.vernon@curtin.edu.au
Stuart J. Watson
s.watson@murdoch.edu.au

¹ Murdoch University, 90 South Street, Murdoch, WA 6150, Australia

² National Centre for Student Equity in Higher Education, Curtin University, Kent Street, Bentley, WA 6102, Australia

university pathways (as compared to general/vocational pathways) through high school successfully traverse the external testing regime culminating in enrolment at university (Harvey et al. 2016). Throughout schooling, students who achieve above-average results are encouraged by schools to study rigorous academic subjects in their senior years (Houng and Justman 2014; NSW Department of Education 2018). Ultimately, these final year secondary students sit statewide external examinations, upon completion of which they receive an Australian Tertiary Admission Rank (ATAR; Queensland will transition to this system in 2020), a ranking position relative to all other students (ATAR 2017). This number then determines whether there is an opportunity to access higher education through the centralised admission processes (Tertiary Admissions Centre (TACs); Harvey et al. 2016). However, for students from low socioeconomic (SES) backgrounds, obtaining an ATAR can be problematic due to the inequalities in access to academic curricula both between high and low-SES schools and within low-SES schools (Perry and Southwell 2013).

Well-resourced, high SES schools enable students to have direct transition from school to university (Harvey et al. 2016; Koshy 2016; Naylor et al. 2013; Willis and Joschoko 2012). However, schools in low-SES areas, including in Australia, are often under-resourced (Perry 2018), and many are staffed with early-career teachers (Berry 2004; Ferfolja 2008) who can find it difficult to keep students engaged and who often have underdeveloped behaviour management skills (Angus et al. 2010; Perry 2018). Indeed, research consistently finds that teacher quality improves with experience (Ost 2014) and retaining quality teachers is essential for student achievement (Ronfeldt et al. 2013). Specifically, for example, classes can vary in terms of levels of disruption, which may impact on achievement; even low-level disruption impacts on engagement and achievement levels in low-SES schools (Goss and Sonnemann 2017).

When students enter the Australian secondary education system, some may become disengaged early in high school as they begin to fail in the high-stakes testing regime (e.g. National Assessment Program-Literacy and Numeracy; NAPLAN 2017). The result of an early failure in high school is that students are often encouraged by their teachers to enrol in classes that offer 'easy' subjects, usually without adequate consideration of personal and environmental circumstances (McGregor 2009). Furthermore, adding to the complexity, schools serving low-SES populations often do not offer their students the same depth and breadth of academic subject offerings in senior school compared to high SES schools, widening the gap between socio-economically advantaged and disadvantaged students (DET 2017; Perry 2018; Perry and McConney 2013; Perry and Southwell 2013). The underlying problem for many students from low-SES backgrounds is recognition that the education systems across Australia may push them into general/vocational pathways, away from an academic pathway, which, if they had appropriate resources, such as experienced teachers and academically rigorous subject offerings (Angus et al. 2010; Perry 2018), many would not choose to leave (Goggin et al. 2016; Smyth et al. 2004; Smyth and McInerney 2012).

Furthermore, those who fall behind within the education system are placed at a disadvantage when it comes to stable long-term employment, housing and general quality of life (Department of Education and Early Childhood Development,

DEAECED 2012; The Committee for Economic Development of Australia, CEDA 2015). Students who fall through the cracks of a precarious education system may have little opportunity or encouragement from their school and teachers to reintegrate and follow the direct admissions pathway to university. Once the damage of dropping out is done, there is little opportunity to catch-up (Goggin et al. 2016; Smyth et al. 2004; Smyth and McInerney 2012) and educational and economic outcomes decline (CEDA 2015). Illustratively, in 2017, only 19.8% of total university applications were from low-SES backgrounds with applicants less likely to receive an offer (DET 2017). However, when students from low-SES backgrounds enrol in university, they perform better for a given ATAR than their high SES counterparts (Messinis and Sheehan 2015). The long-term disadvantage in low-SES areas creates a local culture that makes it difficult for individuals living in these regions to gain the skills they need to reduce their likelihood of repeating the cycle of entrenched disadvantage (Tanton et al. 2012).

To understand cyclical disadvantage for low-SES regions, it is useful to draw upon the idea of cultural capital (Bourdieu 2011). Just as economic capital is accumulated, cultural capital is passed between families and within close communities. Lee and Bowen (2006) suggest that within the middle-classes, cultural capital is developed over the course of generations, as benefits are experienced within the mesosystem of education, employment and the expectations of success across life. As such, the pathway from multiple desires to realisation of educational and occupational goals is well signposted for the more privileged groups (Gale et al. 2013). In contrast, for students from low-SES backgrounds, their occupational and educational desires are shaped over time by their expectations; the future that they see as realistic (Gale and Parker 2014; Gottfredson 1981). To support the pathway from desires to accomplishments, to improve outcomes for students from low-SES backgrounds and to reduce cyclical disadvantage, provision of extensive educational opportunities and productive school experiences is required (Boxer et al. 2011; Perry 2018) and this can be achieved through pre-access or enabling programs as pathways to university (Goggin et al. 2016). Although there has been much research about post-high school enabling programs (Pitman et al. 2016), this paper focuses on enabling programs offered concurrently within the final year of high school (Goggin et al. 2016).

Ways to engage students in their learning have centred on fostering substantial and significant relationships between students and their teachers (Goggin et al. 2016; Hargreaves 2004). Throughout school, an important task for students is to engage positively in school and challenge themselves to achieve to the best of their ability (Eccles and Roser 2011). High student engagement, in particular, cognitive engagement (i.e. students' investment in their own learning, self-regulation and desire for challenge through goal setting at school (cf. Fredricks et al. 2004), contributes positively to students' emotional appraisal of their school-related experiences, that is increasing school satisfaction, as well as life satisfaction (Lewis et al. 2011). However, often disadvantaged students lack opportunities and recourses and so report low cognitive engagement with associated low school satisfaction and poor academic outcomes (Huebner and Gilman 2006; Lewis et al. 2011). Experienced teachers have the capacity to encourage and develop student engagement while managing disruptive behaviours (Angus et al. 2010;

Goss and Sonnemann 2017). However, experienced teachers are inconsistently retained in low-SES schools (Mooney et al. 2015; Ronfeldt et al. 2013). Therefore, many students in low-SES schools become disengaged, display unproductive behaviours and underperform academically (Goss and Sonnemann 2017). Disengaged students from low-SES backgrounds zigzag academically through middle school until they are eventually funnelled into pathways of study which exclude being able to access TAC processes for university study (Angus et al. 2010; Perry 2018). However, if aspirational students are offered alternative access to university study, then they can achieve to their potential (Goggin et al. 2016).

Why do low-SES students zigzag academically through high school?

Aspirations towards higher education are evident early in high school for students in low-SES regions (Gale et al. 2013; Prodonovich et al. 2014; Vernon et al. 2018). However, for students from low-SES backgrounds, moving through high school, often their desire to study at university becomes incongruent with their expectations of studying at university especially when ‘socio-cultural incongruence’ (Devlin 2013, p. 939) influences the reality of opportunities they can envision within the school environment (Prodonovich et al. 2014; Vernon et al. 2018). Specifically, the desire to obtain a university degree may be tempered with the realisation of changing individual circumstances including the mismatch between the middle-class culture and the cultural capital of the students from low-SES backgrounds (Appadurai 2004; Devlin 2013; Reay et al. 2009). Despite moving to senior school with a strong desire for university study (Gore et al. 2015; Prodonovich et al. 2014), lower scores on external tests and a lack of university-bound academic curricula for students from low-SES backgrounds (Angus et al. 2010; Perry 2018) result in fluctuating expectations as to whether university is likely to be a viable destination (Vernon et al. 2018). The decline in university expectations leads to a decline in the belief of obtaining a university degree in the future, so students continue to disengage from school (Goss and Sonnemann 2017). Indeed, as the level of disadvantage increases for students, the rate of transition to university from school declines (Koshy 2016). To address the lack of opportunities and experiences for non-ATAR but capable Year 12 students, a university enabling program intervention named The Learning Centre 110 (TLC110) was offered to students attending schools in the low-SES region of outer metropolitan Perth in Western Australia. This paper examined student experiences within this program in contrast to students who were from the same region but in an academic ATAR pathway. Specifically, we examined school and teacher academic encouragement in relation to students’ school satisfaction. Associated desire, expectations and beliefs for university study were also examined for those students who were studying ATAR-pathway subjects versus students who were studying a university enabling program.

School–university enabling program

The Bradley review (Bradley et al. 2008) noted that students from low-SES backgrounds were under-represented in higher education. In response to the Bradley Review, the Australian government policy *Transforming Australia's Higher Education System* proffered the introduction of demand-driven undergraduate places, with targets to increase the participation rate of people from low-SES backgrounds to 20% by 2020 (Bradley et al. 2008; DEEWR 2009, pp. 12–13). As too few students in low-SES areas graduated from high school with an ATAR for direct entry to university, enabling programs were key to meet the targets set to improve the participation rates in higher education in low-SES areas. Identified pockets of disadvantage in Australia (Brotherhood of St Laurence 2014) were targeted for educational change, specifically the focus of this study being the education system of the southwest corridor of outer metropolitan Perth. Indeed, public schools in this area have a very low percentage of students studying towards an ATAR (from 0 to 26% in public schools in 2016; Schools Online 2017) and do not offer mid to high-level mathematics subjects, compared to higher SES schools (Vernon et al. 2018). As a result, educational attainment in this region is low, and youth unemployment is high (Brotherhood of St Laurence 2014). Furthermore, it can be argued that students are denied the opportunity to fully capitalise on their potential and achieve academically, to pursue higher education (Vernon et al. 2018). Recognising the potential of students within these schools was an important step which lead to the development of an intervention, TLC110: the university enabling program, as an alternative pathway to university study.

To change the educational outcomes for students, this enabling program was established to foster aspirations and provide information and access for tertiary education in the Rockingham, Kwinana and Peel region. TLC110 was classed as a pre-access, university enabling intervention program. Unlike other access programs, TLC110 was taken by students when they were still in their final year of high school, not pre-university, which is usually the case for students whose education falls short of a successful application through the admissions centre (for program description see Goggin et al. 2016). Classes were held on a university campus after school for two hours and consisted of lectures, tutorials and student presentations. Upon successful program completion, students were provided with opportunities to study at university. The program was offered away from the high school on the university campus to ameliorate the local school culture of lower academic engagement and less value attached to education, with the goal of supporting aspirations, desires, expectations and belief in studying at university.

Current study

Schools and classes with high-quality pedagogy and experienced teachers influence the engagement of all students (Fredricks et al. 2004). Fostering positive relationships between students and their teachers through encouragement to engage in an

academically challenging curriculum suitable to the interests of the students leads to increased school satisfaction (Lewis et al. 2011). That is, students who look forward to going to school, enjoy school activities and find school interesting report high school satisfaction (Goggin et al. 2016; Hargreaves 2004; Huebner and Gilman 2006). However, a lower retention rate of experienced teachers in low-SES schools and higher levels of inexperienced teachers can negatively impact student engagement leading to students reporting lower satisfaction with schooling (Ferfolja 2008; Mooney et al. 2015). Therefore, we hypothesise that students that experience high-quality teacher and school encouragement and have an academic pathway will have high levels of school satisfaction which will associate with high support for desires, expectations and belief in the possibility of university study. However, if students have become disengaged from learning and have experienced low teacher encouragement to study academic subjects thus reducing their access to a pathway to higher education, then we hypothesise that these students will become less satisfied with school. If students participate in an intervention (i.e. TLC110 university enabling program) while in Year 12, then we hypothesise that over the course of the program, their desires, expectations and belief of university study will be supported, and students will expect and believe that they can go to university. Study one includes survey data from students before and after the intervention. Study two examines how past TLC110 students speak about their experiences in traditional classrooms concerning their relationships with their school teachers and how this differed from their relationship with the university enabling tutor. Examination of the qualitative data was expected to reveal that the university enabling program fostered positive relationships to build student engagement for students to complete high school and have access to a university pathway. Both studies were expected to show that students who can be supported and encouraged in their learning environment will have the necessary educational experiences and access to opportunities to support their desires, beliefs and expectations to go onto university and persevere with education, breaking the cyclical nature of disadvantage (Perry 2018).

Method

Participants

Study One: The sample for study one ($n=257$; 58% female) was drawn from 18 secondary schools in the southwest corridor of outer metropolitan Perth, comprising Peel, Rockingham and Kwinana regions. Participants responded to the Murdoch Tertiary Aspirations Survey (Watson et al. 2016) over two data collections, one early in the school year and one at the end of the school year (for TLC110 students this coincided with the start and finish of the intervention, respectively). Participants were all senior high school students (Years 11 and 12) with students studying one of two pathways to university, either studying an ATAR pathway for entry to university study ($n=176$) or studying an

enabling program for alternative entry, TLC110 ($n=81$). The region was considered low SES with a sample average of 995 for the Index of Community Socio-Educational Advantage (ICSEA; ACARA 2015) and 44% indicating they were first-in-family to go to university and included predominantly Australian, Caucasian students

Study Two: Students who had completed TLC110 in the previous two years were invited ($n=217$) via email to participate in focus groups. Of the students invited, 16 students expressed an interest in participating in the focus groups, with seven students able to participate and nine unable to participate because of sickness or other commitments. These nine students were further contacted for phone interviews, and two participated in a phone discussion. Overall data were collected from nine students (female=8)

Measures and procedure

Ethical approval to conduct research was obtained from Murdoch University's Human Research Ethics Committee and the Western Australian Department of Education. Data were collected by letter of invitation to the schools in the Rockingham, Kwinana and Peel regions. The distribution of parent and student information and consent packs to students was at the discretion of principals. Due to these school procedures, the rate of participation in the survey cannot be determined. Students provided both their own written consent and their parent/guardian's written consent.

Study One: The self-report survey design included sets of Likert-type scales to measure school satisfaction, teacher and school encouragement, student desire, expectation and belief of studying at university (see Watson et al. 2016). The survey was administered for approximately 15-20 min at school, using iPads, and was hosted by SurveyMonkey^R

University desires: Students' desire to study at university after high school was measured using one item, "I want to go on to university after high school". The item was measured using a 6-point scale, where 1 = *Not at all true for me*, and 6 = *Very true for me*

University expectation: Students' expectation to study at 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 scale, where 1 = *Not at all likely* and 7 = *Very likely*

University belief:	Students' belief that they would have a university degree in the future was measured using the item "What do you think you WILL have in the future? A university degree" The item was measured using a 5-point scale, where 1 = <i>Strongly disagree</i> and 5 = <i>Strongly Agree</i>
Encouragement-school and teacher:	School encouragement was measured using the item "Does your school encourage you to be the best that you can be?" The item was measured using a 5-point scale, where 1 = <i>Never</i> and 5 = <i>Always</i> . Teacher encouragement was measured using the item "My teachers encourage me to challenge and push myself to do the hard subjects". The item was measured using a 7-point scale, where 1 = <i>Not at all true for me</i> and 7 = <i>Very true for me</i>
School satisfaction:	This was a latent variable and measured students' perceptions of how satisfied they were with their school experience. Three items such as "I look forward to going to school" were measured using a 7-point scale, where 1 = <i>Not at all true for me</i> and 7 = <i>Very true for me</i> . Previous research confirms a well-fitting measurement model with unidimensionality (Vernon et al. 2015)
Study Two:	<i>Focus groups:</i> The focus groups were conducted by a trained moderator. The participants gave informed consent for participation, and the discussions were audiorecorded. The focus groups were guided by semi-structured questions, which covered topics such as their experience of the after-school university enabling program TLC110 compared to traditional school and the impact of these experiences on motivation, learning and relationships with TLC110 tutors
Telephone interviews:	A trained researcher conducted telephone interviews from Murdoch University campus. The information on the study, consent form and permission request for audiorecording were read aloud to the participants, and they responded with verbal consent allowing the researcher to sign the consent form on their behalf. The telephone interviews were structured with the same content as the focus groups

Analysis

Study One: For descriptive data analysis, we used SPSS 24. For analysis of the structural equation models (SEM) using full information maximum likelihood estimation with robust standard errors (MLR), we used the statistical software package *Mplus 8.0* (Muthen and Muthen 1998–2016). This approach uses available data to obtain estimates with missing data and adjusts for non-normality of data (Yuan and Bentler 2000).

First, a pathway analysis design (see Fig. 1) tested the model fit as well as the strength of the path coefficients. Goodness-of-fit was estimated with a non-significant Chi-square (χ^2) test; the Comparative Fit Index [CFI] with values of >0.95 indicating good fit to the data; Root Mean Square Error of Approximation [RMSEA] with values <0.08 indicating reasonable fit to the data and Standardised Root

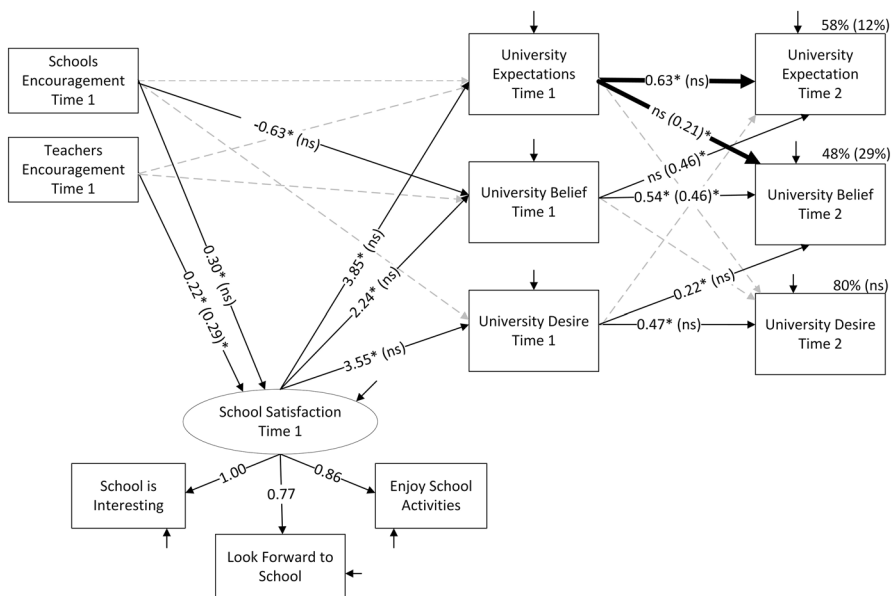


Fig. 1 Path Model: Solid lines indicate significant pathways (dashed lines indicate non-significant pathways for ATAR and TLC groups) with unstandardised estimates for ATAR group (TLC110 group, in parenthesis); Time 1 is early in the year at the start of TLC110 and Time 2 is at the end of the TLC110 program; Bolded pathway indicates significant difference between groups; % = variance explained by the model. *ns* = non-significant pathways; $*p < 0.05$

Mean Square Residual [SRMR] < 0.08 indicating reasonable fit for the data (Hu and Bentler 1999).

Then a number of nested models were analysed using a multiple-group (ATAR vs. TLC110) structural equation modelling framework (Kline 2011) to test the effects of university pathway as a moderator of model paths. A sequence of tests started with a fully constrained model across the two groups of students (TLC110 vs. ATAR) with all paths constrained to be equal. We then allowed each pathway, one-by-one, to be freed and estimated individually for both groups and used the Chi-square difference test (Satorra 2000) to determine if the two groups were significantly different for that particular parameter. If the Chi-square difference is significant, then that particular pathway is significantly different between the two groups (TLC110 vs. ATAR), which supports the hypothesis that the intervention is a moderator.

Study Two: The average length of the focus groups and telephone interviews were 30 min. The recordings were transcribed verbatim and deidentified. A thematic analysis of the field notes and transcripts were conducted (Braun and Clarke 2006). Quotes and field notes were transferred to a spreadsheet matrix for data management and analysis. Codes were then generated by two researchers so data could be grouped to form categories for initial theme development and consensus. In light of the quantitative data, further review of themes by a third researcher resulted in categories being collapsed to form overarching themes. Confirmed themes were finalised for reporting. The themes were triangulated, peer-reviewed and ‘member checked’ by the whole research group (including six additional members) to support credibility and authenticity of the final results (Liamputtong 2013).

Results

Study one-descriptive statistics

Table 1 provides the correlations, means, standard deviations and ranges for the two groups of participants, the ATAR group and the TLC110 group. The means for university desires, expectations and belief were relatively high for both groups. There was a high degree of association between desires and expectations for university study for ATAR participants ($r_{T1} = 0.81$, $p < 0.05$; $r_{T2} = 0.82$, $p < 0.05$), whereas for the TLC110 group, the associations between desires and expectations were weaker ($r_{T1} = 0.30$, $p < 0.05$; $r_{T2} = 0.55$, $p < 0.05$). Interestingly, the magnitude of the association strengthened as the students participated in the university enabling program. As well, for both groups, there were significant associations between earlier and later beliefs of having a university degree ($r_{T1,2,ATAR} = 0.60$, $p < 0.05$; $r_{T1,2,TLC110} = 0.50$). In addition, teacher encouragement was significantly

Table 1 Encouragement Variables, School Satisfaction, University Desire, Expectation and Belief Variables: Correlations and Descriptive Statistics

		2	3	4	5	6	7	8	9	TLC			
										M	SD	Range	
1	School encouragement	–	0.24*	0.38**	0.08	0.09	0.05	0.23*	–0.27	0.31**	4.06	0.91	1–7
2	Teacher encouragement	0.41**	–	0.23*	0.18	0.35**	–0.07	0.21	0.04	0.46**	5.09	1.68	1–7
3	University desire T1	0.20**	0.17**	–	0.30*	0.41**	0.16	0.32**	0.25	0.30**	5.50	0.91	1–6
4	University desire T2	0.24	0.26	0.69**	–	0.31*	0.55**	0.36*	0.54**	0.39**	5.55	0.94	1–6
5	University expectation T1	0.24**	0.39**	0.81**	0.63**	–	0.29	0.35**	0.49**	0.22*	5.70	1.27	1–7
6	University expectation T2	0.33*	0.31*	0.58**	0.82**	0.71**	–	0.35*	0.42**	0.37*	5.88	1.22	1–7
7	University belief T1	0.11	0.27**	0.73**	0.48**	0.76**	0.53**	–	0.50**	0.25*	4.19	0.71	1–5
8	University belief T2	0.34*	0.09	0.53**	0.53**	0.41**	0.65**	0.60**	–	0.27	4.08	0.86	1–5
9	School satisfaction	0.34**	0.27**	0.38**	0.29*	0.41**	0.35**	0.31**	0.29*	–	4.33	1.22	1–5
ATAR	M	3.88	4.99	4.70	4.24	4.97	4.36	3.62	3.52	4.37			
	SD	0.92	1.46	1.73	1.87	1.89	2.00	1.16	1.09	1.21			

Note ATAR group below the diagonal; TLC group above the diagonal

* $p < 0.05$. ** $p < 0.01$

associated with school satisfaction for both groups; however, the magnitude of the association was greater for the TLC110 group ($r=0.46$, $p<0.05$) compared to the ATAR group ($r=0.27$, $p<0.05$).

Path model

The baseline model, where all pathways for each group were constrained to equality, fit the data well, χ^2 (78, $n=257$)=85.63, $p=0.085$, SRMR=0.10, CFI=0.98, RMSEA=0.04 (90% C.I.: 0.000 - 0.068). The free model also fit the data well, χ^2 (54, $n=257$)=66.77, $p=0.114$, SRMR=0.07, CFI=0.98, RMSEA=0.04 (90% C.I.: 0.000 - 0.074). The contribution of the χ^2 value from each group indicated that although there was model fit in each group, the model provided a better fit ($\chi^2=27.18$) for the ATAR group than for the TLC110 group ($\chi^2=39.59$). Figure 1 outlines the significant unstandardised parameter estimates for each university pathway group (TLC110 estimates parenthesised). To examine where there were significant differences between the two groups, each path from the constrained model was freed individually across the two groups. The bolded pathways (Fig. 1) indicate significant differences between the groups. For ATAR students, high school and teacher encouragement increased school satisfaction, which led to higher university desire, belief and expectation. In addition, during the course of ATAR studies, early desires associated positively with both later desires and later belief, early belief associated positively with later belief and early expectations increased later expectations for university. School encouragement for ATAR students negatively associated with early university belief. For TLC110, students' teacher (not school) encouragement associated positively with school satisfaction; however, school satisfaction was not significantly associated with any university belief, desire or expectation. This non-significant finding indicates that, although students completing the TLC110 pathway have university desires, expectations and beliefs, their school experience does not inform their beliefs, desires and expectations because for them school does not facilitate a university pathway. Interestingly, over the course of the enabling program from Time 1 to Time 2, university desires and expectations were stable; however, earlier expectations and beliefs associated positively with later belief of university study, and earlier belief associated positively with later expectations (see Fig. 1, cross-lagged component). Group differences were found for two parameters (see Fig. 1 bolded arrows). ATAR students were significantly different to enabling students as their university expectations increased with 58% of the variance explained; however, they were stable for enabling students (12% explained variance). For enabling students, their early expectations enhanced their later beliefs (29% explained variance) which was not evident for ATAR students, with 48% variance explained through their early beliefs.

Study two: encouragement from TLC110 facilitator

Across the focus groups and interviews, participants spoke about their appreciation of feeling welcome to contribute to discussions and critically engage in activities in TLC110 classrooms, and how this compared to their experiences in school. TLC110 tutors fostered an open and respectful space that allowed students to express their opinions and engage with the concepts being taught. Participants recalled being able to challenge opinions they did not agree with and discuss these in the TLC110 university campus setting. The environment in the TLC110 classroom allowed for a positive and collaborative relationship to develop between the students and the tutor, who allowed the students to feel less stressed, and more engaged and valued in the classroom. This was described by students stating:

There were no forced opinions in the TLC110 course. My lecturer ***, she always asked us for our opinions, she wouldn't force an idea onto us, she always asked us for ideas, and I like that, because when it usually comes to high school, it's like you're being told what's right, and you don't really get a say whether, or you don't get to question why it's right. So there was a lot of that, being able to question things. (Participant 1)

...at high school you were looked down on. They're the master, and you have to listen to them, you don't really get a say. They're right, you're wrong...you were an equal [at TLC110], not being taught, you were both learning (Participant 2).

Triggering belief

As a result of the engaging experience in the TLC110 environment, participants described how they felt this catalysed their motivation to get their work completed and pursue their tertiary education goals. By allowing the students to engage critically, they were able to develop the confidence they needed to succeed and continue to aspire to attend university. The participants spoke about schools' lack of support and encouragement for their goals which negatively impacted on their ability to engage with their work and put in the sustained effort needed to succeed. Poor academic results and relational engagement in school had affected the students' confidence and belief in their abilities, and the school failed to provide a clear pathway of how to improve and learn new skills within the school structure. Fortunately, participants were able to attend TLC110 to address their learning needs. As one student commented, "TLC110 really helped motivate me and inspired me to keep going with what I'm doing, like go to university" (Participant 1). Another explained:

I think I was more motivated to do TLC110 work because I liked the way it was being taught, and I liked that it was a tutor, like a lecturer, and discussion based...In high school I was doing so poorly, I couldn't even understand. I was like, why am I so bad at studying? I thought I was really stupid, but it was just the way I was going about it in my study tactics and everything...I went through a lot of schools throughout my years. I never got sat down and was

taught how to write an essay. So it really helped like motivate me, make me feeling good about myself again (Participant 2).

Growing expectations to succeed at university

Participants spoke about how the skills and confidence that they developed in TLC110 helped them both during their final year of school and when they commenced their university degree. During TLC110, participants had learnt critical thinking, essay writing and note-taking skills. The course had provided them with a process to follow when attempting difficult academic tasks. In addition to completing the TLC110 course, participants recalled they were able to transfer and apply these skills to achieve the necessary marks to pave their way to university. Their confidence was reinforced by being able to contact and seek advice from their TLC110 tutor. Tutors being approachable and accessible helped to build students' confidence in these newly obtained skills. In the words of Participant 1, "TLC110 also helped me with my high school stuff. I took the things that I learned in TLC110 and when I had an essay in school I referred back to that and saw how it's structured". Meanwhile, Participant 2 felt that:

The process seems a lot easier now. So now if I have an essay, or anything I need to do in university, I know there's a process. I feel more resilient because I can be like, I've got an essay, and this is what I need to do.

Participant 3 commented similarly:

I actually learned how to do the essays. Essay writing, note-taking, I think like critical thinking and how to go about looking at something and the questions you ask yourself when you're reading things...they walk you through how to do everything, and you were able to stop at any moment and ask for help.

Discussion

These studies provide important insight into the complex nature of schools as social institutions that provide diverse experiences for their students, both within-school and between-schools, especially if they are from low-SES backgrounds (Perry 2018). Offering a university enabling program like TLC110, as an early intervention for those Year 12 students from low-SES backgrounds who desired to go to university but were not offered the educational opportunities or experiences to be on a direct pathway, goes some way towards ameliorating the within-school and between-school differences. The program aimed to widen participation in higher education by reducing the gaps between desires to go to university, expectations of studying at university and belief of obtaining a university degree (Boxer et al. 2011). As well, from a student perspective, the lecturer/tutor and pedagogic approach of the enabling program were definitive in terms of informing the realisation of their university aspirations. Study one compared the experiences of a

group of students who were accessing a direct entry pathway to university to a group of students studying a university enabling program. Using structural equation modelling and a two-wave panel design, we tested the associations between encouragement, school satisfaction and associations via either the cross-lagged or the autoregressive paths of student desires, beliefs and expectations for university study. Data came from students attending low-SES high schools and participating in the university enabling program in Western Australia. Although research had previously established that, for students from low-SES backgrounds, academic aspirations are high (Gale et al. 2013; Gore et al. 2015; Prodonovich et al. 2014) and exceed academic expectations (Boxer et al. 2011), no study had assessed the efficacy of a university enabling program to support aspirations when still in high school.

The results of study one provide initial evidence that, for students who are on a direct pathway to university (ATAR students), their experiences of teacher and school encouragement act as a primary influencer on school satisfaction and in turn, school satisfaction supports student desires, beliefs and expectations of studying at university which build over the course of their Year 12 studies. As well, their early desire to go to university influences their later belief of having a university degree. However, for ATAR students, school encouragement directly and negatively impacted upon their initial belief of the possibility of obtaining a university degree. One explanation for this negative association may be that at the beginning of Year 12, students receive high levels of school encouragement but it is couched in terms of *'if you don't work hard and do well in exams then you won't get to university'* so the ATAR students may initially waiver in their belief of the possibility of obtaining a university degree. This requires further investigation to explore the nature of the teacher encouragement and the perceptions of the encouragement for the ATAR students.

For the students on the enabling pathway, teacher but not school encouragement enhanced school satisfaction. However, their school satisfaction did not appear to operate in support of their early desires, beliefs or expectations of university study. Nevertheless, as these students were able to demonstrate academic potential and a readiness to transition through an alternative university pathway, they were counselled by their Year 11 teachers to undertake the university enabling program in Year 12 (Goggin et al. 2016). Therefore, when they entered the TLC110 program, they came with a belief in the possibility of gaining a university degree, and this belief provided a feedback loop throughout Year 12 to maintain their high expectations of being able to study at university. Essentially, there was not a drop-off in their expectations to go to university throughout Year 12 even though they were not studying on an ATAR pathway. Each week the enabling pathway students were visiting a university campus, attending lectures and interacting with university tutors and these interactions supported their belief and expectations of studying at university. As well, schools promoted this university enabling pathway to their communities by using past student success stories, so students (and their parents) were confident in the possibility of this course leading to a university degree when they commenced the program. Notably, over the course of Year 12, the enabling intervention enhanced student belief of gaining a university degree and students' high

expectations of going to university continued to influence their beliefs through the year.

Study two used interviews and focus group discussions from post-high school students who entered university via the enabling program. Their past experiences in both a traditional school environment and the university enabling program were compared. Focus group discussions explored the relationships students experienced within both learning environments: student–teacher relationships at school, compared to student–lecturer/tutor during TLC110, in order to contextualise the encouragement they received to support their aspirations.

The findings from study two provide a more nuanced understanding of how Year 12 students, who were not on a direct entry university pathway, can prepare for a successful transition to university through the provision of a university enabling program. The students who completed the TLC110 university enabling program spoke about the importance of their lecturer/tutor's encouragement and the relational space provided on the campus environment in increasing their positive academic experiences. This qualitative finding supports the results of study one where, for enabling students, teacher encouragement positively influenced school satisfaction, but there were no pathway links from school satisfaction to desires, expectations or belief of university study. The university campus environment and interactions with lecturers are thought to have facilitated student engagement where students felt respect from the coordinator, the freedom to explore topics they were interested in and developed the skills they needed to shape their belief that they could go to university. Within this framework students found that they engaged with tasks that enriched their educational experience, as opposed to their fractured school satisfaction in traditional schooling. Furthermore, they appeared to develop a stronger motivation to complete the enabling program and began to see university as a tenable option.

Combined, these findings, therefore, support the hypothesis that students that experience high-quality teacher and school encouragement and have an academic pathway will have high school satisfaction which, in turn, will support high desires, expectations and belief of university study. This also supports the hypothesis that students who have become disengaged from learning and have been marginalised through testing, experience low teacher encouragement to study academic subjects and, in turn, become less satisfied with school. When these students experienced the enabling program, they were able to support their belief and expectation of going to university, with stable desires in doing so.

ATAR students easily navigate a well-trodden pathway with clear signposts to university study (Prodonovich et al. 2014). Experienced teachers, academic peers and classes where students engage in their learning, foster substantial and significant relationships between students and their teachers (Goggin et al. 2016; Hargreaves 2004). Students are satisfied with their school, and over Year 12 their university desires, expectations and beliefs are supported. However, within-school and between-school differences exist in low-SES schools, and these complexities may reduce the opportunities and experiences necessary to support university desires, expectations and beliefs. Offering an intervention with additional experiences resulted in signposts for an alternative pathway to university. This intervention re-engaged students and supported their aspirations. The findings from these studies

reaffirm the importance for earlier interventions that target marginalised but capable students who have reached their senior year of schooling but do not have the academic curricula for direct university entry (Goggin et al. 2016). Indeed, the university enabling programs can improve students' educational success, support their university desires, build expectations and belief that they can obtain a university degree and ultimately reduce the socio-cultural incongruity experienced by many students from low-SES backgrounds (Devlin 2013).

Several limitations need to be acknowledged. The sample of TLC110 students was relatively small compared to the ATAR group, therefore, increasing the sample size would strengthen the findings. However, the participants in study two were drawn from the same region as study one, increasing the ecological validity of the study. Purposive sampling was used to gather participants, targeting only students who had completed the TLC program. This allowed the researchers to identify the subgroup from the population they were interested in and gather data that reflected the topic being explored. As well, the intervention was localised to this region in Western Australia where there is already a low uptake of ATAR subjects, therefore, the capacity to successfully complete the TLC110 program may be different in other areas around Australia. Trialling the intervention in other states would further determine the efficacy of the enabling program. Although self-report data were collected in study one, which have been shown in the literature to be subject to numerous biases, the focus group discussions were used to support findings from study one. As well, a limitation for study two was a low response rate, but individual interviews were conducted to address this limitation and data saturation was achieved.

Despite these limitations, this study was able to highlight that university enabling programs successfully completed while students are still in high school encourage students to see themselves as more than their backgrounds and challenge their epistemic cognitions. High-quality education programs that enable student's opportunities to achieve to the best of their ability are one of the most effective means to break the cycle of poverty. Ideally, early intervention programs like these would efficiently prepare students for university study and become a transparent viable entry pathway for students who have been marginalised from a direct entry academic pathway (Harvey et al. 2016). However, the education system is subject to government policy and funding, so these pedagogical shifts will take time.

Acknowledgements We would like to thank the high school principals, their staff and the students who participated in Murdoch's Aspirations and Pathways for University (MAP4U) study. We are grateful to everyone in the MAP4U team, with special thanks to Yolanda Andrews, Antoinette Geagea, Helen Stone, Jonathan Sae-Koew and Tiffany Foster for their contributions to data collection. We also acknowledge the TLC110 facilitators and tutors in particular Tommy Goggin and Peter Geerlings. Special thanks to Professor Andrew Taggart for his foresight to champion the TLC110 program. Also to Murdoch University's School of Psychology and Exercise Science, with special thanks to Dr Suzanne Dziurawiec for supporting the research students. We also acknowledge the support of the Australian Government Australian Postgraduate Award (APA) Scholarship.

Funding We acknowledge the funding of this research by the Australian Government through a Department of Industry, Innovation, Science, Research and Tertiary

Education (DIIS RTE) Project Grant (2012–2016), administered by Murdoch University and entitled Murdoch's Aspirations and Pathways for University (MAP4U) Project.

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Lynette Vernon currently holds a position as a postdoctoral research fellow in widening participation with the National Centre for Student Equity in Higher Education at Curtin University, Perth, Western Australia. She has taught science and mathematics in schools across Western Australia and Queensland. During her teaching period, she completed an Honours degree in Psychology and completed her PhD at Murdoch University. She was the Director of MAP4U.

Stuart J. Watson currently holds a position as a postdoctoral research fellow in perinatal psychiatry, joint with Murdoch University, 90 South Street, Murdoch, WA 6150 and the School of Medicine, University of Notre Dame, Fremantle. He completed a PhD in the School of Applied Psychology, Griffith University. He held a Project Manager position on the Murdoch Aspirations and Pathways for University Project [<http://www.map4u.com.au>] at Murdoch University in Perth, Western Australia.

William Moore completed a Bachelor of Psychology in 2017 and intends to continue his studies in Psychology at Murdoch University, 90 South Street, Murdoch, WA 6150. His main research interests are supporting adolescents from low-SES backgrounds into higher education.

Sarah Seddon completed a Bachelor of Psychology and a Bachelor of Criminology in 2016 at Murdoch University, 90 South Street, Murdoch, WA 6150. She worked as a senior research assistant for the MAP4U and is currently completing her clinical masters in psychology.