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To be seen and heard: Enhancing student engagement to support university aspirations and expectations for students from low socioeconomic status backgrounds

An important goal for educators is to foster student engagement in order to support a sense of valuing and aspiring to higher levels of education. To value education, students need to perceive that they are welcome, express their ideas and engage meaningfully in each education space they enter. Therefore, 'pupil voice' has the potential to become an important influencing factor regarding the degree to which students become self-regulated learners, value education and consequently support their aspirations and build their expectations to go on to university. This study examines the role pupil voice plays in building cognitive and emotional engagement, and whether this, in turn, builds desire for further study and expectations for university entry. Pupil voice is operationalised as the extent to which the student feels heard, involved and supported by the school community. Student survey data was collected (N = 542) from a low socioeconomic status region of the southwest corridor of metropolitan Perth, Western Australia. Structural equation modelling substantiated our serial mediation hypothesis. For students, a discernible pupil voice significantly and positively increased cognitive engagement (self-regulated learning), which increased emotional engagement (valuing education) that, in turn, increased university desires, which led to increased university expectations. The results of this study underscore the importance of policies and practical interventions designed to develop strong student–teacher relationships, where students feel they are both seen and heard.

Keywords: aspirations; cognitive engagement; emotional engagement; pupil voice

Introduction

Higher education can be transformative, delivering benefits to individuals, their families and communities. It is this far-reaching impact that compels research into better understanding the factors that contribute to the under-representation of people from low socioeconomic status (SES) backgrounds at university, and how to address this imbalance (St Clair & Benjamin, 2011). As in the UK, Australian higher education policy perceives supporting the higher education aspirations of low SES students as a key educational policy driver for social mobility (Commonwealth of Australia, 2009; Harrison & Waller, 2018). In service to this view, the past decade of education policy

reform in Australia—particularly the introduction of a demand-driven system of undergraduate enrolments (Bradley *et al.*, 2008)—has contributed to a steady increase in the proportion of students from low SES backgrounds participating in university studies in Australia (Harvey *et al.*, 2016).

However, major barriers to higher education access remain for many students from low SES backgrounds. One such barrier is the incongruence between the policy rhetoric of raising aspirations, implying that students from low SES backgrounds have lower desires to go to university, and the research which asserts an interplay between high desire to go to university but lower expectations due to the perception of what is possible (Markus & Nurius, 1986; St Clair & Benjamin, 2011; Harrison & Waller, 2018; Vernon *et al.*, 2018). Policy rhetoric suggesting educational aspirations of young people from low SES backgrounds are low and require lifting can sustain a deficit-centric perspective for students from disadvantaged backgrounds (Sellar & Gale, 2011; Zipin *et al.*, 2015; Harrison & Waller, 2018; Cunninghame & Pitman, 2019). Therefore, in order to avoid the continuance of a deficit-discourse pertaining to the desires and expectations for higher education amongst students from low SES backgrounds, there is a need to determine the factors that play a predictive role in supporting early aspirations to influence the development of high expectations to go to university. In particular, developing expectations to attend university can be driven by a combination of factors—including how supportive the school culture is and how engaged students are in their learning (Kintrea *et al.*, 2011).

Researchers have considered student engagement to be a multidimensional construct with interrelated elements, including the behaviour students exhibit towards their learning (behavioural engagement), the strategies students use for self-regulating their learning (cognitive engagement) and the value students place on their learning (emotional engagement) (Fredricks *et al.*, 2004; Appleton *et al.*, 2006). Consequently, measures of student engagement have been developed, usually around these key dimensions, to aid teachers in identifying aspects of students' learning practices and self-belief they seek to improve upon (Appleton *et al.*, 2006).

Notably, the school engagement construct may include indicators of participation, belonging and learning strategies, which can then be linked within conceptual models to student success (Wang & Holcombe, 2010) and wellbeing (Wang & Peck, 2013). However, few studies have examined the precursors of student engagement, specifically related to investigating the factors that influence student learning strategies (cognitive engagement) and the value students place on learning (emotional engagement). Arguments for greater student engagement are premised upon the notion that institutional agents within school communities should be respectful, inclusive and receptive to the voices of students, in order to build shared ownership and commitment within their school environment (Mockler & Groundwater-Smith, 2015). Ensuring students can safely express their opinion of schools and schooling, build strong relationships with their teachers and peers, and feel a sense of connection to their school environment has been shown to positively influence student engagement (Rudduck, 2007; McLeod, 2011; Mockler & Groundwater-Smith, 2015). The focus of this research is to examine the capacity for

students to be heard by their teachers and the school community, as a precursor of student engagement, to support aspirations and develop expectations for university access.

Determining the extent to which secondary schools can create an environment where pupils have a voice will lead to a better understanding of how to improve student engagement (Fredricks & McColskey, 2012). Examining the degree to which pupils are connected to their peers, are heard by their teachers and feel involved in the process of their education prior to the later years of schooling, as antecedents of student engagement, can assist in examining the school environment in terms of engagement with young people in an ongoing and authentic dialogue. Additionally, we examine the role pupil voice plays in setting both a desire for higher education (i.e. 'I want to go to university') and an expectation of higher education (i.e. 'How likely is it that I will go to university?'). This article outlines the key findings of a longitudinal study into pupil voice, which had two core aims. The first was to establish whether there was evidence connecting pupil voice as an antecedent to cognitive and emotional engagement. If so, the second aim was to assess whether these connections might lead to improved desires for, and expectations of, future university study.

Pupil voice

The concept of pupil voice has been widely discussed in the education research literature (Mitra, 2003; Cook-Sather, 2006; Rudduck & Fielding, 2006). Many approaches proceed from three assumptions, or what Cook-Sather (2006) calls 'convictions' (p. 359). First, 'young people have unique perspectives on learning, teaching and schooling' (Cook-Sather, 2006, p. 359). Second, these perspectives 'warrant not only the attention but also the response of adults' (Cook-Sather, 2006, p. 359). Third, young people 'should be afforded opportunities to actively shape their education' (Cook-Sather, 2006, p. 359). Thus, pupil voice is often described in terms of consultation and participation (Rudduck & McIntyre, 2007). Further to this, McLeod (2011) notes that pupil voice involves a relational, interactional and power dynamic change in viewpoint. Pupil voice is 'complex, contradictory and fluid' (Cremin *et al.*, 2011, p. 587), both conceptually and in practice.

Many attempts to embed theoretical developments in pupil voice practice tend to fail to capture the complex, contradictory and fluid nature of voice. Fielding (2004) observes that this is due in part to practices that ignore several problematics centred around issues of speaking *about* and *for* others, as well as difficulties around 'getting heard' (p. 495). Furthermore, McLeod (2011) notes that ignoring such issues forms the potential to privilege some voices over the voices of others. Arnot and Reay (2007) highlight that simplistic application of policies to elicit pupil voice may fail to recognise the 'power relations *within* not just *between* social categories' (p. 313). Further to this, centrally developed initiatives intended to involve students directly in the administrative development of schools are not always seen as empowering for all students (Laura, 2007; Freeman, 2016), potentially because they withdraw the mandate from teachers and local administrators to make changes they know are particularly useful for students not directly involved in such consultation (Cremin *et al.*, 2011). Therefore, it is challenging to capture the complex nature

of voice as part of an effort to build a better understanding of the factors that impact on students' trajectories to higher education.

Previous research highlighting the construct of pupil voice has focused on considering voice as 'nested within the broader principle of pupil participation' (Flutter, 2007, p. 344), exploring the relationship between voice and engagement as pertaining to pedagogic strategies and modes of learning (Rudduck, 2007; Rudduck & McIntyre, 2007). In our study, we make a clear distinction between the concepts of pupil voice and student engagement, as we are interested in exploring conceptual notions of pupil voice that consider connection to teachers and others in their school and belonging within their educational environment (Rudduck & Fielding, 2006; Cook-Sather, 2018). This requires the consideration of voice as an antecedent to the established construct of student engagement (Appleton *et al.*, 2006; Ainley, 2012; Griffiths *et al.*, 2012). The pupil voice construct thus examines the student–teacher relationship, as well as the perceived value of students' opinions through students' sense of connection and involvement with their peers and the educational spaces themselves (Ramey *et al.*, 2017).

Consideration of pupil voice as an antecedent to student engagement is guided by research indicating that declines in student engagement tend to occur during early adolescence, as high school students develop feelings of alienation, which may lead to dropout for some students—regardless of positive academic results (Marks, 2000; Archambault *et al.*, 2009; Wang & Eccles, 2012). Conversely, positive teacher–pupil relationships are associated with higher levels of engagement in school (Marsh, 2012). Interactions that convey appreciation, respect and caring from teachers lead to cognitive and emotional engagement in school (Wang & Holcombe, 2010). As positive or negative emotional responses can result from strategising, thinking about and participating in a task, it has been postulated that emotional engagement follows from cognitive engagement (Wang & Eccles, 2012). In order to understand the pathways that lead to the different dimensions of engagement, further investigation is required, alongside the need for schools to authentically incorporate student interests, goals and motivations to avoid disengagement and alienation (Pianta *et al.*, 2012). This research seeks to consider the nuanced elements of student–teacher relationships as indicators of pupil voice, notably as an antecedent to student engagement. In doing so, this research endeavours to contribute to the development of interventions which devote time and capacity for meaningful student involvement (Fletcher, 2003).

Cognitive and emotional engagement

Cognitive engagement can be defined as purposeful engagement in self-regulated learning tasks: from understanding the learning environment to implementing learning goals, carrying out learning tasks and evaluating goals and techniques along the learning journey (Zimmerman, 1990; Fredricks *et al.*, 2004; Darr, 2012). Common indicators of cognitive engagement for students include planning, monitoring and evaluating student learning (Fredricks, 2011; Wang *et al.*, 2011; Darr, 2012). Emotional engagement is characterised by the extent to which a student feels positively or negatively towards their educational environment and teachers, and the extent to which they value education (Fredricks *et al.*, 2004; Wang & Holcombe, 2010; Fredricks, 2011; Darr, 2012). Indicators of emotional engagement for students include feeling they belong in their

school environment, have positive interactions within the school community and value the purpose and process of education (Wang *et al.*, 2011; Darr, 2012; Fredricks & McColskey, 2012). This study uses these indicators for cognitive and emotional engagement to determine the cognitive and emotional engagement constructs.

When students work collaboratively in the school environment with a well-developed sense of their pupil voice, they are able to expand their knowledge base through positive cognitive and emotional interactions (Jarvela *et al.*, 2016). Positive interactions with teachers and peers at school may increase the subjective valuing of their learning (Wang & Eccles, 2012), which is likely to encourage students to be more involved in planning and evaluating their own educational practice. Equally, a student's willingness to plan their approach to solving problems, learn from their mistakes and recover from negative experiences can have a positive impact on how they value education (Darr, 2012). If the structural foundations to build strong student–teacher relationships and collective purpose and connections amongst peers are present for students earlier in their educational pathways, then a greater sense of valuing education and feeling they belong is likely to be reflected at a later stage of education (Wang & Eccles, 2012). In particular, identifying profiles of engagement from a person-centred perspective has led to research showing that students with high levels of emotional and cognitive engagement report having high levels of educational aspirations (Wang & Peck, 2013). Therefore, identifying factors that can enhance levels of engagement in school, can lead to the development of pathways for students to successfully transition from high school to higher education.

Aspirations: Desires and expectations

Gottfredson describes students' early occupational aspirations by noting that their 'preferences are the "wish" rather than the "reality" component of aspirations' (Gottfredson, 1981, p. 548). Initially, students consider a range of possible career goals until they adjust to a perceived reality as they consider what they are capable of, as a result of academic and social constraints (Gottfredson, 1981; Reay *et al.*, 2009; Gale & Tranter, 2011; Gale & Parker, 2015; Harrison & Waller, 2018). However, as students consider their circumstances—encompassing financial realities, academic preparation and social and parental expectations (Gemici *et al.*, 2014)—many find, over time, their desire to study at university is tempered, leading to a decline in expectations of university study (Zipin *et al.*, 2015; Harrison & Waller, 2018; Vernon *et al.*, 2018).

Students' higher education aspirations may be informed by innate disposition but can be significantly transformed via external social pressure (Kintrea *et al.*, 2011). Social expectations based on students' backgrounds can result in aspirations as desires functioning as 'the out-workings of dominant beliefs and assumptions that circulate as natural and common sense' (Gale & Parker, 2015, p. 85). Educational advisers—including teachers—are often dominant sources of guidance on post-secondary educational pursuits (Dalley-Trim & Alloway, 2010; Archer *et al.*, 2014), and expectations of students' likelihood of success sometimes lead them to temper students' desires by advising against university for 'underperforming' students

(McManus, 2006; Harrison & Waller, 2018). Family backgrounds and perceptions for whom higher education is designed can also play a significant role in students' articulation of aspirations (Burke *et al.*, 2016; Harrison & Waller, 2018).

The terminology of aspirations is somewhat problematic, as it may conflate expectations regarding desires and possibilities when this is not necessarily the case for marginalised groups (Harrison & Waller, 2018). The basis for problematising aspirations in this way draws from Bourdieu's articulated concept of habitus as the construction of possible futures resulting from the interplay between one's self and the environment in which they previously or currently reside (Bourdieu, 1977, 1984), or as Archer *et al.* (2014) articulate: 'an individual's sense of their own future as being not merely a personal cognition, but as formed through their relationship with the wider social context, including fields of home and schooling' (p. 59). This notion is further supported by Markus and Nurius (1986):

An individual is free to create any variety of possible selves, yet the pool of possible selves derives from the categories made salient by the individual's particular sociocultural and historical context, and symbols provided by the media and by the individual's immediate social experiences. (p. 954)

As such, operationalising aspirations as two distinct components—desires and expectations—ensures there is the potential to identify where social forces influence students' aspirations for higher education (Harrison & Waller, 2018; Vernon *et al.*, 2018).

Previous research has identified coexistent associations between adolescents' desire for higher education and the likelihood or expectation of achieving those desires (Johnston *et al.*, 2014; Gale & Parker, 2015; Vernon *et al.*, 2018). Similarly, our study explores the complex understanding of students' aspirations as they develop over time through high school, by starting with pupil voice and using their indicators of engagement to inform their later desire for further education, and subsequent expectations of continuing from high school to university. Furthermore, our study's measures of desires and expectations seek to avoid deficit-based assumptions about the attitudes of students towards the possibility of university participation.

Research design and approach

This study aimed to identify contexts that promoted pathways for students to support their successful transition from high school to university, with a focus on school-based contexts. Although research has established a link between high student engagement and educational aspirations (Wang & Peck, 2013), longitudinal research that investigates how pupil voice and student engagement relate to future desires and expectations to study at university is lacking. We explore whether student engagement plays a serial mediating or explanatory role in the association between early levels of pupil voice and later desires and expectations to transition to university study.

Building on previous research on student engagement (Appleton *et al.*, 2006; Wang *et al.*, 2011; Wang & Peck, 2013) the study posed two research questions:

- a Does pupil voice, measured using indicators of the student–teacher relationship

and indicators of the value of the student's opinion, associate with cognitive engagement and subsequent emotional engagement?

b Do these student engagement antecedents lead to greater desires and expectations for a university education after high school?

To address these questions, using longitudinal survey data, we explore three hypotheses. Firstly, we hypothesise that early high levels of pupil voice will associate with later expectations to go to university. However, we suggest that there may be an indirect pathway that links pupil voice to university expectations via student engagement. Therefore, our second hypothesis examines the serial mediation pathway, and we posit that early high levels of pupil voice associate with high levels of cognitive engagement, which, in turn, associate with later high levels of emotional engagement. For our third hypothesis, we postulate that these early high levels of emotional engagement will associate with high levels of university desires, which, in turn, associate with later, high levels of expectations to go to university.

Method

Design

Data was drawn from three out of five waves of a 3-year longitudinal study on aspirations and school experiences (see Watson *et al.*, 2016; Vernon *et al.*, 2018 for study descriptions). The study spanned 2 years. The first two waves of data collection did not include the survey questions used in this study, so were not included for analysis. The students were surveyed at 6-monthly intervals. The nine participating schools (eight government/public schools) were from the region where Murdoch University's Aspirations and Pathways for University (MAP4U) project was located. This project was initiated from a Federal government-funded grant, which engaged schools across the region with programmes designed to support university aspirational capacities in the low SES area in the southwest corridor of metropolitan Perth, Western Australia.

Participants

The participants were 542 adolescents (52% female), predominantly Australian, Caucasian students from schools who drew their students from mostly low SES status backgrounds. More specifically: Australia uses an Index of Community Socio-Educational Advantage (ICSEA) score to determine the relative socio-educational advantage of a school. This index uses Australian Bureau of Statistics data drawing on education, occupation, income, ethnicity and location of student's household (Australian Curriculum Assessment and Reporting Authority, 2015). Nationally, the average ICSEA score is set at 1,000, and one standard deviation from the mean is equal to 100. For our study, the mean score for the schools was 982, representing a standard deviation of 36,

meaning the schools supported students who came from significantly disadvantaged backgrounds.

Participants were aged 12–18 years, with a mean age of 14.56 years for the first time (see Table 2 later; T1 = Time 1) of data collection for the relevant survey items. The age breakdown was as follows: 9% were 17–18 years; 47% were 15–16 years; 34% were 13–14 years; 10% were 12 years. To be included in the analysis, the participants needed to have completed at least two of the three surveys (57%).

The survey (see Watson *et al.*, 2016; Vernon *et al.*, 2018 for study descriptions) was administered in 2015 and 2016 and comprised sets of Likert-type scales to measure pupil voice, cognitive engagement, emotional engagement and university aspirational capacities. Research teams visited schools and administered the online 20-min survey using tablet computers. Ethical approval was obtained from the Education Department and the University Human Research Ethics Committee. Participants required active, informed student and parent consent. Students were informed that the survey was voluntary and confidential and that no information would be released to their parents, teachers or school. The survey was completed in class during a 20-min session using iPads via SurveyMonkey or if requested, administered using a paper survey.

Measures

Pupil voice. Pupil voice was a latent construct that measured the student–teacher relationship and the extent to which the student felt heard and understood within the school. The construct consisted of seven observed indicators (see Table 1) adapted from an existing scale (Appleton *et al.*, 2006). Items were measured using a five-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The scale had good reliability, with a Cronbach’s alpha of 0.86, and this construct had low correlations (<0.4) with the latent factors for cognitive engagement and emotional engagement (see Figure 1).

Cognitive engagement—self-regulated learning. Cognitive engagement was a latent construct measured with four observed indicators that examined how cognitively engaged students were within their ability to self-regulate their learning (see Table 1; Wang *et al.*, 2011). All items were assessed using a five-point scale ranging from 1 = *Never*, 3 = *Half of the Time* to 5 = *Almost Always*. The scale had good reliability, with a Cronbach’s alpha of 0.79 and low correlation (<0.3) with the latent factors of pupil voice and emotional engagement (see Figure 1).

Emotional engagement—value of education. Emotional engagement was a latent construct with five observed indicators that examined how students valued their school education (see Table 1; Wang *et al.*, 2011). All items were assessed using a five-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The scale had moderate reliability, with a Cronbach’s alpha of 0.63 because of the poor loading of the negatively worded item ‘Schooling is not so important for kids like me’ (see Figure 1). It was decided to keep this item, as previous research had endorsed it on the latent construct of valuing education (Wang *et al.*, 2011).

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' (see Figure 1). The item was measured using a six-point scale, from 1 = *Not at all true for me* to 6 = *Very true for me*. This item has been used in previous research (Watson *et al.*, 2016; Vernon *et al.*, 2018).

University expectation. Students' expectation to study at university was measured using the item 'How likely is it that you will go on to university after high school?' (see Figure 1). The item was measured using a seven-point scale, from 1 = *Not at all likely* to 7 = *Very likely*. This item has been used in previous research (Watson *et al.*, 2016; Vernon *et al.*, 2018).

Covariates

Relevant covariates were controlled for gender (0 = *male*, 1 = *female*), SES (0 = *below median*, 1 = *above median*) and school year level (1 = *Year 7*, 2 = *Year 8*, 3 = *Year 9*, ... 6 = *Year 12*).

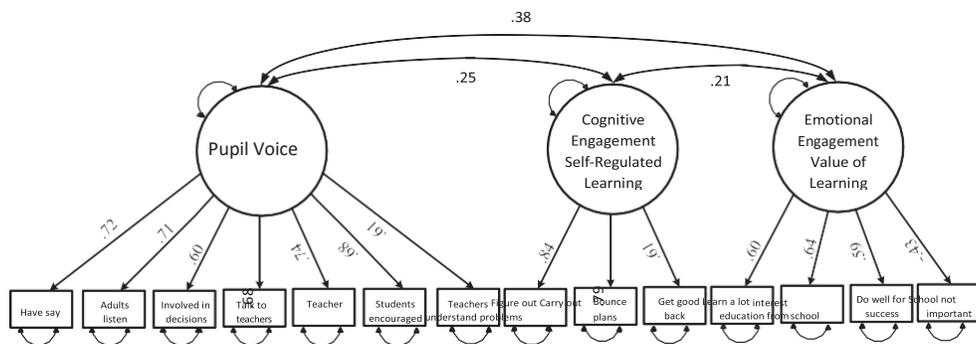
Analysis

Covariance structure analysis, using the statistical software package *Mplus 8.0*, analysed the measurement model and then the structural equation models (SEM) using full information maximum likelihood estimation with robust standard errors (MLR) (Muth en & Muth en, 2012). This approach uses available data to obtain estimates with missing data and adjusts for non-normality of data (Yuan & Bentler, 2000). The analysis reported missing data for the latent variables at 14% and modelling the

Table 1. Items for latent constructs with model fit indices

Pupil Voice (Appleton <i>et al.</i> , 2006; What Kids Can Do Inc. & MetLife Foundation, 2004)	
Please rate your agreement with the following statement about your school:	
1	Adults at the school listen to the students.
2	Students are involved in decisions about things that affect them in school.
3	I enjoy talking to the teachers here.
4	Most teachers are interested in me as a person, not just as a student.
5	I feel like I have a say about what happens at school.
6	Students here are encouraged to say what they think.
7	My teachers understand what my life is like outside school.
$\chi^2(14, N = 349) = 37.246, p = 0.001, CFI = 0.964, RMSEA (90\% CI) = 0.069 (0.043-0.096)$	
Cognitive Engagement (Self-Regulated Learning) (Wang <i>et al.</i> , 2011)	
Consider your experiences at school over the last 6 months:	
1	How often do you try to figure out problems and plan how to solve them?
2	How often do you try to carry out the plans you make for solving problems?
3	How often do you try to bounce back quickly from bad experiences?
χ^2 is not reported as the model is not identified.	
Emotional Engagement (Valuing of School Education) (Wang <i>et al.</i> , 2011)	
Please indicate how strongly you agree or disagree with each of the following statements:	

- 1 I have to do well in school if I want to be a success in life.
 - 2 Schooling is not so important for kids like me.
 - 3 Getting a good education is the best way to get ahead in life for the kids in my neighbourhood.
 - 4 I often learn a lot from my school.
- $\chi^2(2, N = 364) = 6.670, p = 0.036, CFI = 0.957, RMSEA (90\% CI) = 0.080 (0.018-0.151)$
-



$\chi^2 (74, n=466) = 136.70, p = .000, CFI = .95, RMSEA (90\%CI) = .04 (0.03-0.05)$

Figure 1. Standardised estimates for the latent constructs of the measurement model

data set using only participants with all three data points showed estimates of similar magnitude and significance level to using the whole data set. Bias-corrected (BC) bootstrap confidence intervals generated an estimate for the indirect effects along with a 95% confidence interval to examine the significance and strength of a particular mediator in the serial mediated model (Preacher & Hayes, 2008; Lau & Cheung, 2012).

Firstly, a confirmatory factor analysis tested the model fit for each factor and the measurement model (Pupil Voice = Time 1; Cognitive Engagement = Time 1; Emotional Engagement = Time 2; see Figure 1 for factor loadings). Goodness-of-fit was estimated (see Table 1) with a non-significant chi-square (χ^2) test; the comparative fit index (CFI) with values >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 mean square residual (SRMR) < 0.08 indicating reasonable fit for the data (Hu & Bentler, 1999). This model had 78 cases of missing-at-random data.

Then, a serial mediation model (Jose, 2013) was developed based on the combined progression of hypotheses two and three. The product of coefficients approach was used (Preacher & Hayes, 2008; Lau & Cheung, 2012), using *Mplus* to calculate the indirect effects and 95% confidence intervals (95% CI) for the paths to and from the mediators (Mediator 1 = Cognitive Engagement – Time 1; Mediator 2 = Emotional Engagement – Time 2; Mediator 3 = University Desires – Time 2), as shown in Figure 2.

Results

Descriptive analysis

The means and standard deviations for pupil voice, cognitive engagement (both at Time 1), emotional engagement, desire to go to university (both at Time 2) and expectation for university (Time 3) are presented in Table 2. Higher scores indicate a higher level of each construct. Overall, students reported a 'neutral' to 'agree' position

that adults listen to them at school and that they are involved in decisions at their

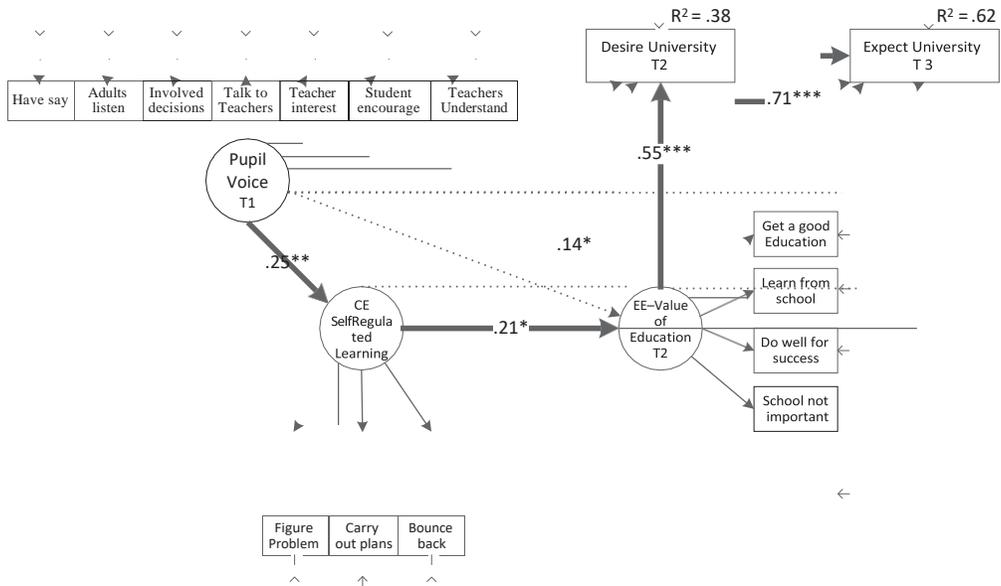


Figure 2. Structural model with standardised estimates for pupil voice, cognitive and emotional engagement and university desires and expectations. $\chi^2(130, N = 542) = 257.07, p = 0.000, CFI = 0.93, RMSEA (90\% CI) = 0.042 (0.035-0.050)$.

Note: Covariates gender, SES and year level are not included for clarity. Solid lines indicate significant relations among factors; bold solid lines indicate significant indirect pathway; dashed lines indicate insignificant relations between factors. CE = Cognitive Engagement;

EE = Emotional Engagement; T1 = Time 1; T2 = Time 2; T3 = Time 3

school, which is similar to previous research on high school students (Reschly *et al.*, 2008). The levels of cognitive engagement were lower than the levels reported by students in previous research. However, scale adaptation may explain the difference (Lewis *et al.*, 2011). Emotional engagement was high and similar to previous research (Lewis *et al.*, 2011).

Covariates were added to the model to control for the confounds of gender, SES and year level. Significant associations were found between gender and desires ($b = 0.11, p < 0.05$) and expectations ($b = 0.09, p < 0.05$) for university, that is females had higher levels of desire and expectation to go to university than males. Students from higher SES backgrounds tended to have higher levels of pupil voice ($b = 0.16, p < 0.05$), as well as higher desires to go to university ($b = 0.11, p < 0.05$). Younger students reported higher levels of pupil voice than older students ($b = -0.22, p < 0.05$).

Correlation analysis

Interfactor correlations for latent constructs and university desires at Time 2 and university expectations at Time 3 are found in Table 2. Significant, modest, positive correlations were found among pupil voice and cognitive engagement, university

desires (Time 2) and university expectations (Time 3). Significant modest to moderate, positive correlations were found between cognitive engagement (Time 1) and emotional engagement (Time 2), as well as with early university desires and later expectation to go to university. Value of education (Time 2) was strongly positively correlated with

Table 2. Student reports of pupil voice, cognitive engagement, emotional engagement and desire and expectation for university study: correlations and descriptive statistics ($N = 542$)

Variables		1	2	3	4	5
1. PupilVoice	T1	–				
2. Cognitive Engagement—SRL	T1	0.25***	–			
3. Emotional Engagement—SV	T2	0.07*	0.21*	–		
4. Desire to Go to University	T2	0.14*	0.20**	0.59***	–	
5. Expectation for University	T3	0.22***	0.30***	0.43***	0.76***	–
<i>M</i>		3.28	3.62	4.25	4.77	4.98
<i>SD</i>		0.76	0.88	0.64	1.61	1.89
Range		1–5	1–5	1–5	1–6	1–7
<i>α</i>		0.86	0.79	0.63		

Note: SRL = Self-Regulated Learning; SV = School Value; T1 = First survey time; T2 = Second survey time; T3 = Third survey time; * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

desire to go to university (Time 2) and with later expectations to go to university (Time 3). Both early desires and later expectations to go to university were strongly positively correlated. There were no significant correlations between the latent constructs of pupil voice (Time 1) and value of education (Time 1).

Structural equation modelling

Confirmatory factor analysis indicated a good fit of the measurement model: $\chi^2(74, N = 466) = 136.70, p = 0.00, CFI = 0.95, TLI = 0.93, RMSEA (90\% CI) = 0.043 (0.031–0.054), SRMR = 0.063$ (see Figure 1). All items loaded at or above 0.60 to the factors, except for two items on the emotional engagement latent variable (see Figure 1). The item with the lowest loading was a negatively worded item, and previous research has shown that negatively worded items may reduce scale reliability for self-report measures (Barnette, 2000). As suggested, these items were retained in the model because of previous scale validation (Wang *et al.*, 2011; Wang & Peck, 2013).

The recursive structural equation model indicated a good fit: $\chi^2(130, N = 542) = 257.07, p = 0.00, CFI = 0.93, TLI = 0.91, RMSEA (90\% CI) = 0.042 (0.035–0.050), SRMR = 0.067$ (see Figure 2 for standardised path coefficients). Controlling for gender, SES and year level, there was a significant total effect for pupil voice at Time 1 associated with expectations to go to university at Time 3 (Total Effects = 0.42 [95% CI 0.14–0.71]), providing support for the first hypothesis that

there is a significant relation between the independent variable, pupil voice at Time 1 and the dependent variable, expectations to go to university at Time 3. This total effect is the sum of the direct and indirect or mediated effects. Within the hypothesised full model, the direct effect between pupil voice and expectations to go to university is not significant (see dashed line in Figure 1). However, the mediated effects through cognitive and emotional engagement and desire for university can explain the significant total effect. Therefore, the second hypothesis is supported whereby early high levels of pupil voice associated with early high levels of cognitive engagement ($B = 0.26$ [95% CI 0.08–0.42]), which in turn associated with high levels of emotional engagement at Time 2 ($B = 0.16$ [95% CI 0.00–0.32]), controlling for gender, SES and year level. Further explanation for the significant total effects within the hypothesised model is found within the support for the third hypothesis, whereby the pathways from high emotional engagement at Time 2 associated with high levels of university desires at Time 2 ($B = 1.36$ [95% CI 0.84–2.02]), which in turn associated with high levels of expectations to go to university at Time 3 ($B = 0.83$ [95% CI 0.67–0.94]). In addition to these pathways and controlling for the covariates, it was found that high levels of cognitive engagement directly associated with high levels of expectations to go to university ($B = 0.31$ [95% CI 0.04–0.59]).

Serial mediation

One of the main goals in this research was to demonstrate whether early levels of pupil voice influenced students' later expectation to go to university through positively affecting student engagement (cognitive and emotional engagement), and students' desire to go on to university study. Our final hypothesis was modelled and tested by setting direct paths from pupil voice to cognitive engagement, emotional engagement and university desires and expectations, as well as a serial mediation pathway through student engagement and university desires (see bold arrows in Figure 2). Bidirectional pathways were not modelled because of the longitudinal nature of the constructs.

Results are presented in Figure 2 and Table 3, and indicate a significant indirect path, such that students with high levels of pupil voice experienced high levels of student engagement, and in turn high levels of university desires and expectations after controlling for gender, SES and year level. Although there were a number of indirect pathways (see Table 3), the indirect effect (IE) through all mediators (see bold arrow pathway, Figure 2) was significant (0.25 [95% CI 0.05–0.49]). The proportion of the mediated effect (IE/total effect) (MacKinnon, 2008) indicates that student engagement (cognitive and emotional) and university desire explained a moderate proportion (61%) of the relation between levels of pupil voice and levels of expectation to go to university (see Table 3). The mediated effect was approximately one and a half times as large as the direct effect (see Table 3; ratio of indirect effects to direct effects).

Discussion

The objective of this study was to investigate indicators of pupil voice as precursors

for student engagement and their associated pathways for students' academic aspirations and expectations as they transition through and from high school. In particular, the relations between the constructs of pupil voice, cognitive engagement, emotional engagement and later desires and expectations to attend university were examined. As hypothesised, emotional engagement (in the form of valuing education), cognitive engagement (in the form of self-regulated learning) and university desires did explain the relation between pupil voice and expectations to go to university. These findings underscore the importance of considering pupil voice and student engagement as two different constructs, both critical factors for supporting desires and expectations for students to transition from high school to university study—where they can gain the necessary skills and abilities to obtain quality employment in the future.

Our results indicate that students from low SES backgrounds with high levels of pupil voice and a stronger sense of legitimacy of their own voice were more likely to regulate their learning, which then led to valuing education and desiring to further their education. Ultimately, these students from low SES backgrounds with high levels of pupil voice expected to continue their education in formalised pathways in their future. However, a compelling finding of our study was that students from higher SES backgrounds had higher levels of pupil voice than students from low SES backgrounds. This lends support to previous studies, which have demonstrated that socioeconomic advantage means some students enter formal education better

Table 3. Non-symmetric bootstrap confidence intervals for sequential mediator model for pupil voice, engagement and university aspirations

From Pupil Voice T1 to University Expectation T3	Estimate	95% CI		<i>b</i>	Indirect/ Total Effects (<i>b</i>)
		LL	UL		
Total Effects	0.42	0.14	0.71	0.18	
Total Indirect	0.25	0.05	0.49	0.11	0.61
Specific Effects					
Pupil Voice T1 ?					
University Desire T2 ?					
University Expectation T3 Pupil Voice T1 ?	0.11 ^{ns}	-0.09	0.30	0.05	
CE—Self-Regulated Learning T1 ?					
University Expectation T3 Pupil Voice T1 ?	0.08	0.02	0.12	0.04	0.22
CE—Self-Regulated Learning T1 ?					
University Desire T2 ?					

University Expectation T3	0.03 ^{ns}	-0.03	0.10	0.01	
Pupil Voice T1					
CE—Self-Regulated Learning T1 ?					
EE—Value of Education T2 ?					
University Expectation T3	-0.01 ^{ns}	-0.04	0.01	0.00	
Pupil Voice T1 ?					
CE—Self-Regulated Learning T1 ?					
EE—Value of Education T2 ?					
University Desire T2 ?					
University Expectation T3	0.05	0.01	0.13	0.02	0.11
Direct Effects Pathway					Indirect/Direct
					Effects (<i>b</i>)
<hr/>					
Pupil Voice T1 ?					
University Expectation T3	0.17 ^{ns}	-0.09	0.45	0.07	1.57

Notes: 95% CI = if the 95% CI interval contains 0 then estimate is non-significant at 0.05 level. LL = lower limit of CI; UL = upper limit of CI; ns = not significant. T = Time; CE = Cognitive Engagement; EE = Emotional Engagement.

positioned than others to take advantage of the opportunities to provide feedback and influence their particular school experiences (St Clair & Benjamin, 2011). The extent to which students are socially adept and have a strong voice in the school environment is in part due to their ability to draw on their life experiences (*habitus*) (Bourdieu, 1977, 1984) and to imagining their possible future selves (Markus & Nurius, 1986). Therefore, it is important to ensure there is greater consideration of incorporating the wide range of interests and concerns present amongst students within each educational space, so students of all backgrounds may have their perspectives reflected in educational spaces.

Understanding pupil voice as an antecedent for student engagement (Wang & Peck, 2013) enables educators to focus on educational practices to enhance educational success for all students. Notably, this research lends support to previous findings in the literature whereby school culture needs to value the beliefs and opinions of students from low SES backgrounds to improve student engagement and support desires and develop expectations to transition to university education (Harrison & Waller, 2018). It further reinforces that fostering pupil voices through meaningful involvement is the foundation for building lasting student engagement to support further education (Wang & Peck, 2013).

For pupil voice to perform a transformative role for all students, particularly students from low SES backgrounds at risk of disengaging in middle school years (Marks, 2000), consideration needs to be given to emphasising the process of embedding relational connections between students and teachers within educational spaces to ensure equality of voice for all students. Unfortunately, mandates for teachers and administrators can treat the development of these critical aspects of pupil voice as secondary to meeting consistent achievement-related targets as set out by various upper levels within the educational system (Cremin *et al.*, 2011). Notably, our research highlights that incorporating pupil voice into the planning processes within school culture can lead to improvements in student engagement, which has previously been found to lead to improved student achievement (Wang & Peck, 2013), and for this research to supporting aspirations and improving expectations for going on to higher education.

Although this study is longitudinal in nature, two of the constructs were measured at the same time. Therefore, this data is inherently correlational and as such, causal conclusions regarding the associations between pupil voice and cognitive engagement require further investigation to demonstrate an underlying relation. Although data was collected from a sizable sample of students, a similar analysis of students in other locations may also be necessary to determine the transferability of effect and to account for locality influences, especially across international educational systems. Furthermore, the self-report nature of the survey can be subject to a number of biases; however, self-report surveys are a well-established instrument for the basis of educational research and scales had been tested for their reliability and validity (Appleton *et al.*, 2006; Wang *et al.*, 2011).

Despite these limitations, our findings affirm the need to create opportunities for all students, especially those from disadvantaged backgrounds, to be given an equal opportunity to have their voice heard. Inclusive school communities with adults who interact with their pupils, and who are interested in their pupils' lives as well as their academic achievement, can engage students and achieve above their expected targets (Marsh, 2012). As such, our findings support the need for educational structures to emphasise relational connections between educators and students, to ensure curricula and educational activities are reflective of the interests and desires of their students to narrow the gap between desires and expectations of further university study (Harrison & Waller, 2018; Vernon *et al.*, 2018).

Establishing a classroom environment where the students feel heard and valued can contribute to addressing the disparity between students' desires for university education and the realisation of whether continuing education past high school is possible, especially for students from low SES backgrounds. Our approach to developing the pathway of analysis from pupil voice through student engagement to supporting desires and developing expectations to go on to university underscores the importance of targeted early interventions to develop a strong student–teacher partnership where students feel heard and valued (Ramey *et al.*, 2017), which, as demonstrated, can have flow-on effects for lifelong learning. This is especially salient for disengaged students from disadvantaged backgrounds.

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Ethical guidelines

The project underwent rigorous review and obtained ethical approval from Murdoch University's Human Research Ethics Committee (HREC 2013/109) prior to approval from the Department of Education, Western Australia.

Conflict of interest

No potential conflict of interest was reported by the authors.

Data availability statement

Due to the sensitivity of the nature of the data collected from children under 18 years of age, the data is not publicly available.

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