



Seen, heard, inspired: How positive teacher interpersonal style fosters university aspirations in Indigenous students

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ABSTRACT

Teachers are widely recognised as pivotal figures in shaping students' personal development and academic trajectories. Empirical evidence demonstrates that positive teacher–student relationship—characterised by high expectations, cultural responsiveness, and genuine care—are associated with improved educational outcomes for Indigenous students, including regular attendance, enhanced retention rates, and increased academic achievement. However, limited research has examined whether, and how, such positive teacher influences extend to long-term educational pathways, particularly university aspirations. Understanding this relationship is critical, as aspirations are considered precursors to actual educational attainment and are central to the broader Indigenous higher education equity agenda in Australia. Drawing on data from the Longitudinal Study of Indigenous and employing multivariate regression analyses, this study examined the link between teachers' interpersonal style and university aspirations among Indigenous students aged 10–15 years ($n = 1081$). The findings revealed that teachers who create learning environments in which Indigenous students experience enjoyment, respect, validation, and care are more likely to foster university aspirations. This relationship is largely mediated by strong cultural identity affirmation, whereby Indigenous students feel secure and proud of their cultural identity within the classroom context. These findings suggest that teacher professional development initiatives should extend beyond basic cultural awareness training to encompass the development of interpersonal competencies necessary for establishing positive and culturally affirming relationships with Indigenous students.

1. Introduction

Teachers are widely recognised as pivotal figures in shaping students' personal development and academic trajectories (Rosenthal and Jacobson, 1968; Hattie, 2008). More specifically, teacher interpersonal style¹—the relational and behavioural ways in which teachers engage with students—has been widely acknowledged as a key factor influencing both educational and wellbeing outcomes. Research shows that when teachers exhibit supportive, fair, and caring behaviours, students tend to experience a heightened sense of safety, belonging, and connectedness and, consequently, are more likely to demonstrate higher engagement, motivation, and academic achievement (Pianta et al., 2012; Roorda et al., 2011). Attentive listening, fairness, encouragement,

and emotional support contribute to students feeling understood, valued, and respected, which in turn fosters a positive classroom climate and enhances learning outcomes (Hamre and Pianta, 2006; Wang, 2023). Beyond academic performance, teacher interpersonal style has been linked to students' social-emotional wellbeing: supportive teacher behaviours are associated with reduced behavioural problems, lower stress levels, and greater emotional resilience (Wentzel, 2009; Zheng, 2022). Importantly, research across diverse countries and contexts shows that teachers play a pivotal role in shaping students' university aspirations through encouragement, high expectations, and supportive relationships (Fuller, 2014; Gore et al., 2015; Reddick et al., 2011; Van den Broeck et al., 2020).

The Wisconsin status attainment model provides a useful starting

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¹ In this study teacher interpersonal style is defined as a construct of five behavioural and relational dimensions: listening attentively, treating students fairly, making learning enjoyable, demonstrating genuine care, and showing understanding. University aspiration refers to students' intention or desire to pursue higher education at the university level when they grow older. Indigenous students refer to Aboriginal and Torres Strait Islander children participating in the Longitudinal Study of Indigenous Children (LSIC) survey who were enrolled in primary or secondary school at the time of the survey.

point for understanding how teacher interpersonal style might shape the university aspirations of Indigenous students. Sewell et al. (1969) argue that aspirations emerge through socialisation with significant others—such as parents, peers, and importantly, teachers—whose expectations, encouragement, and feedback shape students' self-concepts and perceived opportunities. Through their daily interactions with students, teachers communicate implicit and explicit norms about the desirability and attainability of higher education (McDonough, 1997). They decode and translate complex and often opaque educational systems (Smith, 2011), provide critical emotional and motivational support (Reddick et al., 2011), and their expectations fundamentally shape both the guidance they offer and the quality of relationships they build with students (Brophy, 1983; Kimura-Walsh et al., 2009). For students from disadvantaged backgrounds, including Indigenous students, teachers are often the only highly educated adults in their immediate social networks (Tranter, 2005), making the interpersonal quality of these relationships especially consequential for how students perceive their capabilities and possibilities.

Yet, despite strong theoretical foundations, empirical evidence directly examining the relationship between teacher interpersonal style and university aspiration remains limited—particularly for Indigenous learners. To our knowledge, no study has systematically investigated this association. This absence is notable given that the educational experiences of Indigenous students continue to be shaped by adverse legacies of colonialisation, including low teacher expectations, racism, and limited cultural safety (Howard, 2002; Moodie, Maxwell, and Rudolph, 2019; Nakata, 2007; Rudolph and Thomas, 2023). Teacher behaviours are consistently identified as one of the most influential factors shaping Indigenous students' school experiences and outcomes (Guenther et al., 2024; Munns et al., 2013; Santoro et al., 2011). Positive teacher interpersonal styles characterised by high expectations, cultural responsiveness, and genuine care are strongly associated with improved attendance, retention, and academic achievement (Bodkin-Andrews and Carlson, 2016; Bucksin, 2012; Craven et al., 2005; Yunkaporta and McGinty, 2009; Purdie and Buckley, 2010; Sarra et al., 2020). Conversely, negative interpersonal styles—marked by low expectations, deficit thinking, and discriminatory practices—are frequently cited by students and families as key drivers of disengagement and early school departure (Bishop and Durksen, 2020; Godfrey et al., 2001; Howard, 2002; Lampert et al., 2013).

While one might infer a relationship between teacher interpersonal style and university aspiration from broader school-level evidence, research shows that Indigenous students may engage or perform well academically in response to positive teaching practices without necessarily developing aspirations for university (Gore et al., 2017). This underscores the need for an independent, direct examination of the relationship between teacher interpersonal style and university aspiration. Understanding this link is crucial not only for advancing the academic literature but also for informing educational policy and practice aimed at strengthening Indigenous students' transitions into higher education. Raising aspirations has been identified as a key policy priority for addressing Indigenous under-representation in Australian higher education (Behrendt et al., 2012; Department of Education, 2024). The absence of empirical evidence therefore represents a significant missed opportunity to leverage everyday enablers of Indigenous educational success.

In this study, we draw on longitudinal data from the Longitudinal Study of Indigenous Children (LSIC), a leading culturally grounded dataset in Australia, to examine whether teacher interpersonal style—specifically, whether teachers listen, treat students fairly, make class enjoyable, demonstrate care, and show understanding—is associated with students' likelihood of aspiring to attend university. Beyond establishing whether this relationship exists, we explore potential mechanisms through which teacher interpersonal style may operate. Using multivariate logit regression models, we analyse the association between teacher interpersonal style and university aspiration while

accounting for relevant demographic, socioeconomic, and geographic factors. As noted earlier, teacher interpersonal style is conceptualised as a multidimensional construct capturing students' perceptions across five interpersonal dimensions, and university aspiration is measured dichotomously as whether a student intends to pursue university education in the future.

2. Literature review

2.1. The role of teachers in aspiration formation.²

Aspirations—defined as future-oriented goals that individuals are committed to achieving—are believed to be shaped by the interaction between internal psychological evaluations and external socio-environmental contexts (Appadurai, 2004; Huijsmans, Ansell and Froerer, 2020). Within this broad literature, teachers occupy an increasingly central place in explaining how students come to imagine their educational futures. The classic Wisconsin status attainment model provides an early and influential foundation for this connection. Sewell et al. (1969) conceptualise aspirations as products of ongoing socialisation with significant others—parents, peers and teachers—whose expectations, encouragement, and evaluative feedback influence students' self-concepts and perceived opportunities (see also, Haller, 1982; Woelfel and Haller, 1971).

A Bourdieusian perspective further highlights how teacher–student interactions operate within broader cultural and structural contexts. Bourdieu's (1986) concepts of habitus and cultural capital suggest that aspirations are shaped by the social environments in which students are embedded. Teachers serve as institutional intermediaries who can either reproduce existing inequalities or disrupt them. Warm, respectful, and culturally attuned interactions can validate students' identities, confer symbolic capital, and render university both socially legitimate and personally imaginable. In this way, teacher interpersonal style can reconfigure the habitus of students whose pathways to higher education have historically been constrained.

Complementary insights arise from motivational and cognitive theories. Self-Determination Theory (Ryan and Deci, 2000) emphasises that students develop strong, self-endorsed aspirations when their needs for autonomy, competence, and relatedness are supported. Teacher practices that promote agency, nurture confidence, and cultivate trusting relationships play a central role in meeting these needs, enabling students to view university as a personally meaningful goal rather than an externally imposed one. Similarly, Social Cognitive Theory (Bandura, 1991) underscores that aspirations depend on academic self-efficacy and outcome expectations. Supportive teachers strengthen students' beliefs in their capability to succeed and help them form positive expectations about the value of university education.

For Indigenous students—whose aspirations may be shaped by experiences of exclusion or low institutional expectations—the interpersonal style of teachers can be pivotal in either expanding or constraining their imagined educational futures. Drawing on the theoretical perspectives discussed earlier, we expect that teacher interpersonal style may operate through several interconnected channels that could shape Indigenous students' university aspirations. First, as articulated in the Wisconsin model of status attainment, teachers may serve as mentors and socio-emotional supports whose encouragement and guidance can help students envision higher education as attainable (Sewell et al., 1969). Second, teachers' expectations and evaluative feedback may

² While we use the term teacher interpersonal style—as it appears in the Longitudinal Study of Indigenous Children (LSIC), our primary data source—we draw on the broader conceptual and empirical literature on teacher behaviour and teacher–student relationships. This broader body of work examines the same dimensions of interpersonal style outlined in the previous section, either individually or collectively, in predicting a wide range of student outcomes.

shape students' academic self-concepts and future outlooks, potentially enhancing their self-efficacy and positive outcome expectations (Bandura, 1991). Third, through autonomy-supportive relational practices emphasised in Self-Determination Theory, teachers may nurture students' sense of competence, agency, and relatedness, which in turn could allow university aspirations to be internalised as personally meaningful (Ryan and Deci, 2000). Fourth, from a Bourdieusian perspective, teacher–student interactions occur within unequal social and cultural fields (Bourdieu, 1986). Given that teachers are often the only highly educated adults in the immediate social networks of Indigenous students (Tranter, 2005), they may play a pivotal role in expanding or reconfiguring students' habitus by validating strengths, modelling alternative futures, and conferring symbolic capital that can render university imaginable and socially legitimate. Finally, teachers who demonstrate cultural understanding could create identity affirming learning environments in which students feel safe to express their cultural identities without fear of discrimination or marginalisation. Such environments may reduce the psychological burden of identity negotiation, freeing cognitive and emotional resources that might otherwise be diverted from long-term academic pursuits (Cohn-Vargas and Steele, 2016; Ledesma and Calderón, 2015). When Indigenous students feel their identities are valued and affirmed in the learning environment, their sense of belonging, confidence, and commitment to education can increase significantly (Kickett-Tucker and Coffin, 2011; Rahman, 2010).

2.2. The role of teachers in aspiration formation: empirical evidence

Much empirical work on aspirations historically emphasised the influence of parents and peers, often reporting minimal teacher effects (Buchmann and Dalton, 2002; Gil-Flores et al., 2011; Hossler and Stage, 1992; Jencks et al., 1983). These limited findings stem largely from methodological constraints. Early studies relied on crude proxies—such as the frequency of teacher–student conversations about university (Engberg and Wolniak, 2010)—which captured informational exchange rather than relational quality. Such approaches positioned teachers primarily as conveyors of higher education information, overlooking the interpersonal dimensions through which teachers can shape how students envision their futures (Brophy, 1983; Kimura-Walsh et al., 2009; McDonough, 1997).

More recent work has produced a clearer and more consistent picture. Across diverse national contexts, students identify supportive, caring, and high-expectation teachers as central to their university aspirations (Fuller, 2014; Gore et al., 2015; Reddick et al., 2011; Van den Broeck et al., 2020). A key insight concerns the power of teacher expectations. In Belgium, Van den Broeck et al. (2020) showed that high collective teacher expectations significantly buffer the negative influence of low school socioeconomic composition on students' aspirations to pursue higher education. This “functional substitution” effect suggests that where students lack university-related social capital at home, the expectations communicated by teachers become disproportionately influential. Parallel findings emerge in the United States. Reddick et al. (2011) documented how a small number of “invested” teachers who offered encouragement, guidance, and persistent belief in students' potential—played transformative roles for Black and Latino graduates from high-poverty urban schools. The authors noted that teachers provided more than information: they furnished the relational support and confidence necessary for students to imagine university as attainable.

Ethnographic work in the United Kingdom adds further nuance. Fuller (2014) found that teacher influence often operates indirectly through the cultivation of institutional trust, rather than explicit aspiration-raising. Supportive teacher relationships fostered students' belief in fairness and meritocracy, enabling them to pursue university pathways even with limited parental involvement. In Australia, Gore et al., 2015 similarly highlighted the relational nature of teacher influence. Their mixed-methods study showed that everyday teacher–student interactions—encouragement, fairness, responsiveness—profoundly

shaped senior secondary students' aspirations, often influencing decisions with long-term consequences for university eligibility.

Despite strong theoretical foundations and emerging empirical evidence from general student populations, no study to date has examined whether teacher interpersonal style influences university aspirations among Indigenous students in Australia. Existing research on Indigenous aspirations has largely centred on demographic, academic, socioeconomic, and geographic factors. Sikora and Biddle (2015), for example, found that Indigenous girls express higher university aspirations than boys, even when facing lower expected lifetime incomes. They also identified mathematics performance, school-related self-concept, and paternal occupation as key predictors. These findings underscore how aspirations are shaped not only by structural inequalities but by students' beliefs about their own academic competence—beliefs that teachers commonly influence through feedback, encouragement, and relational support.

Building on this, geographic location has emerged as another critical determinant. Senior and Chenhall's (2012) ethnographic work in a remote community illustrated how limited exposure to diverse life pathways narrows what young people view as possible, with participants rarely perceiving university as relevant to their futures. Craven et al. (2005) similarly found that rural Indigenous students viewed university as geographically—and symbolically—distant. These studies highlight the importance of proximity to opportunity, yet they also implicitly point toward the potential compensatory role teachers could play: acting as key socialisers who broaden students' horizons when communities and institutions are distant.

A further layer of complexity is revealed through research on intersecting factors such as race, class, and cultural identity. Patfield et al. (2022) showed how two Indigenous girls, one in metropolitan Sydney and one in regional NSW, developed university aspirations through very different mechanisms—one through class-based familiarity with higher education, the other through racial consciousness and a desire to address systemic inequities. Such work demonstrates that aspirations are deeply embedded in relational and cultural contexts, suggesting that teachers who acknowledge and validate students' identities may help shape the meaning and relevance of higher education in students' lives.

Research has also explored the effectiveness of intervention programs designed to raise Indigenous students' aspirations. Hossain et al. (2008) emphasised the importance of structural supports such as scholarships, tutoring, and clear information pathways, alongside partnerships between universities and Indigenous communities. These supports are vital, yet they largely overlook the everyday interactions that occur in classrooms—interactions that may shape aspirations long before students access university-related resources. Similarly, mentoring and career-development initiatives such as AIME (Harwood et al., 2015) and UniCamps (Thomas et al., 2014) demonstrate the positive impact of culturally responsive relationships on students' confidence and future planning. These programs improve school engagement, strengthen self-concept, and demystify university environments. Their success reinforces a central insight: supportive, trusting, and identity-affirming relationships are powerful mechanisms for shaping the aspirations of Indigenous young people—precisely the relational processes teachers engage in daily.

Taken together, while the existing literature provides important insights into the demographic, geographic and socioeconomic factors shaping Indigenous students' university aspirations, it reveals remarkably little about how teachers' everyday interpersonal behaviours may encourage or constrain these aspirations. This omission is notable given extensive evidence that teacher interpersonal style profoundly influences Indigenous students' attendance, engagement, retention, and academic performance (Bodkin-Andrews and Carlson, 2016; Buckskin, 2012; Munns et al., 2013; Sarra et al., 2020; Yunkaporta and McGinty, 2009). For students who often encounter schooling environments marked by historical trauma, racism, and cultural disconnection (Anderson, Yip and Diamond, 2023; Howard, 2002; Moodie, Maxwell

and Rudolph, 2019), the quality of their relationships with teachers can provide crucial academic guidance, encouragement, and institutional navigation—and may be fundamental to whether university feels imaginable, desirable, and attainable.

The present study addresses this gap by examining whether positive teacher interpersonal style—characterised by listening, fairness, care, enjoyment, and understanding—is associated with university aspirations among Indigenous secondary school students in Australia. Focusing on teacher interpersonal style responds directly to calls for more analyses of the relational experiences of Indigenous students in school settings (Peacock et al., 2021; Rudolph and Thomas, 2023; Sarra, 2011).

3. Data

We used data from the LSIC, which follows the development of two cohorts of Indigenous children. When the study began in 2008, the Younger Cohort consisted of children aged 6–18 months and the Older Cohort consisted of children 3–3.5 aged years. With a combined sample about 1700 children and families, LSIC drew its sample from across 11 sites in urban, regional, and remote areas of Australia (Department of Social Services (DSS), 2020).

LSIC is the only longitudinal dataset tracking Indigenous children's development with a culturally grounded approach to both design and implementation. It is guided by an Indigenous-led committee with majority Indigenous representation. This committee provides expert guidance across multiple domains including survey content, design, collection methods, community engagement, ethics, cultural protocols, and data analysis and interpretation. LSIC's cultural integrity is further strengthened by having Indigenous Research Administration Officers (RAOs) conduct the interviews directly with participating families (DSS, 2022).

LSIC is conducted annually, covering a wide range of topics including education, health and wellbeing, aspirations and values, language and culture, income and employment, housing, family relationships, community safety, and school resources.

While LSIC data are available for approved researchers from 14 survey waves, we rely on data from Wave 11 for our analysis study. This because Wave 11 is the only wave that contains information on both variables of interest: teacher interpersonal style and university aspiration. In wave 11, LSIC children were between 10 and 15 years of age, with an average age of 12 years and standard deviation of 1.5 years. Our analytical sample includes 1081 students who were attending primary or secondary schools at the time of the LSIC survey for whom information was collected on our main variables of interest.

3.1. University aspiration

It is measured through a response to the question, “When you are older, will you....”. The possible responses included a broad range of options, such as Go to university; Do Year 12; Do further study/or training such as TAFE course; get a job etc. For our analysis, we derived a dichotomous variable for university aspiration, which equals 1 if the child chose ‘Go to university’; and equals 0 otherwise.

3.2. Teacher interpersonal style³

In wave 11, LSIC children who were attending school were asked if the following were true about their teacher:

- o My teachers listen to me.
- o My teachers are fair to me.
- o My teachers make sure my class is a fun place to be.

- o My teachers care about me and want me to do well at school.
- o My teachers understand how I talk.

The possible responses to the statements were ‘Always’; ‘Most of the time’; ‘Fair bit’; ‘Little bit’; ‘Not much’ and ‘Never’. The categories were reverse-coded and assigned numeric values ranging between one and six, with one corresponding to ‘Never’ and six corresponding to ‘Always’. Summed across the five items, raw scores of the survey responses ranged between 1 and 30, averaging 26.3. Results from a factor analysis showed that the items load highly onto a single factor with Eigenvalue= 2.32 and Cronbach's reliability coefficient = 0.87. As such, we derived a composite index of standardised scores, where higher scores indicated more positive teacher style, and lower scores indicate less positive teacher style.

4. Methods

We conducted both descriptive and regression analyses. Multivariate logistic regressions were employed (using Stata 17.0) to examine the relationship between teacher style and university aspiration. Although we are primarily interested in the relationship between teacher interpersonal style and university aspiration, we know from theory (e.g., Appadurai, 2004) and the empirical literature (e.g. Patfield et al., 2022; Senior and Chenhall, 2012; Sikora and Biddle, 2015) the university aspiration of Indigenous students is influenced by a complex interaction of personal, demographic, socioeconomic, geographic and structural factors can be aspiration is influenced personal attributes and the social environment they live in. We suppose that some of these factors may also influence students' perception of their teacher interpersonal style (Huan et al., 2012). Therefore, we controlled for a range of individual, household and local level characteristics to discern an independent association between the variables of interest. See Table A1 in the appendix for a summary of the control variables.

Recognising that culture and identity plays a vital role in shaping educational outcomes of Indigenous children (Lowe et al., 2021), we controlled for two cultural variables. The first is whether the child speaks an Indigenous language in the home, and the second is a multi-dimensional measure of cultural identity affirmation. In wave 11, LSIC children who were attending school were asked how much they agree with the following statements:

- o I feel good about being Aboriginal and/or a Torres Strait Islander in class.
- o I want to share (tell others) things about being Aboriginal and/or Torres Strait Islander in class.
- o I feel safe being Aboriginal and/or Torres Strait Islander in class.
- o I like people to know I am Aboriginal and/or Torres Strait Islander in class.

The possible responses to the statements were ‘Always’; ‘Most of the time’; ‘Fair bit’; ‘Little bit’; ‘Not much and Never’. The categories were reverse-coded and assigned numeric values ranging between one and six, with one corresponding to ‘Never’ and six to ‘Always’. Preliminary analyses showed that raw scores of the survey responses across the four items ranged between 4 and 24, averaging 20.8. We noted that items loaded highly onto a single factor with Eigenvalue= 2.55 and Cronbach's reliability coefficient = 0.79. Therefore, we combined the item responses to drive a composite index of standardised scores, where higher scores indicate stronger identity affirmation within class and lower scores indicate weaker identity affirmation.

Since LSIC data is nested across 11 sites, we checked whether there is intra-cluster correlation (ICC), using a randomly generated culture variables available in the LSIC dataset (DSS, 2018). We calculated the ICC based on estimates of a null mixed-effects logit model and found ICC = 0.055 (CI: 0.0200, 0.147), indicating small (but nontrivial) clustering by site (approximately 6 % of variance is attributable to site differences).

³ Hereafter, we use the term ‘teacher style’ for the sake of brevity.

After controlling for all the relevant octaviates, however, only 2 % of the variance became attributable to site differences ($ICC=0.019$) and a Likelihood Ratio (LR) test shows no significant difference between a mixed-effects logit model and a standard logit model, $\chi^2(01) = 1.28$ and $p = 0.1290$. Nonetheless, we note that with only 11 sites in our sample, we have limited statistical power to test the significance of the random effect variance component, while reliable testing of random effects requires at least 30–40 clusters (McNeish and Stapleton, 2016). To address this clustering, we have estimated the model using robust cluster standard errors. This approach adjusts standard errors for within-cluster correlation without requiring estimation of random effect variance, making it more appropriate for our small number of clusters (Cameron and Miller, 2015; Huang, Zhang and Li, 2023).

It is worth noting that while we have controlled for a comprehensive set of demographics, socioeconomic, and geographic factors—both theoretically grounded and empirically validated as predictors of Indigenous students' university aspirations—and accounted for intra-cluster correlations, our analysis does not necessarily establish causal relationships between teacher interpersonal style and university aspirations.

5. Results

5.1. Descriptive statistics and sample characteristics

Results presented in Table A1 provide important contextual insights into the students' backgrounds, learning environments, and aspirations. Approximately 45 % of students reported that they intended to pursue university education in the future. Over 80 % expressed a strong sense of cultural identity within the classroom-reporting that they feel safe being Indigenous and while about 64 % were willing to share their cultural heritage with peers. Notably, over 75 % of students reported positive perceptions of their teacher's interpersonal style, stating that their teachers listen to them, care about them, treat them fairly, understand their way of speaking, and foster an enjoyable classroom environment most of the time or always.

Girls accounted for a slight majority of the sample. Only one in five students reported speaking an Indigenous language at home, around 5 %

of the students in the sample were identified as having a disability. The primary carers of the students in this study had varying levels of educational attainment. Nearly half possessed a non-school qualification, with about 35 % completing a certificate, 8 % a diploma/advanced diploma and 10 % bachelor's degree or higher. Conversely, around a quarter of primary carers (26 %) had only attained Year 10 or below, while around 21 % completing Year 11 or 12. More than half of primary carers (52 %) were engaged in paid employment, 34 % experienced financial hardship and a further 30 % had housing problems, such overcrowding and frequent moving. In terms of geography, most students lived in socioeconomically disadvantaged areas, with nearly three-quarters residing in regional, remote, or very remote areas rather than in major cities.

5.2. Regression analysis and key associations

Table 1 presents the results from three logistic regression specifications. Reported estimates are odds ratio (ORs) along with their corresponding clustered standard errors (SEs). Model 1 displays the results of a bivariate logistic regression in which teacher style is the sole predictor of university aspiration. Model 2 provides results from a multivariate regression that includes teacher style alongside all background variables listed in Table A1. Model 3 reports result of a multivariate regression like Model 2 but with 'identity affirmation' excluded as a predictor variable.

The results from Model 1 show that positive teacher style, as perceived by students, is positively associated with university aspiration. A one standard deviation increase in the interpersonal style score is associated with a 24 % increase in the odds of aspiring to attend university—a statistically significant relationship at the 1 % level. However, when demographic, socioeconomic, cultural, and geographic controls are included in the model, the magnitude of this association decreases, and the coefficient becomes statistically insignificant. This attenuation suggests that part of the initial association is explained by other factors known to shape Indigenous students' educational trajectories. Several of these control variables emerged as significant predictors of university aspiration. While older students were less likely to aspire to university than their younger counterparts, female students were more likely than male students to express university aspirations.

Table 1
Statistical association between teacher style and university aspiration.

Variable	Model 1		Model 2		Model 3	
	OR	SE	OR	SE	OR	SE
Teacher style	1.246	***	0.076	1.056	0.086	1.155
Identity affirmation				0.112	*	0.075
Age			0.893	*	0.042	0.044
Sex			1.761	***	0.208	0.217
Has disability			0.985		0.335	0.294
Speaks Indigenous language			0.569	**	0.116	0.120
Primary carer education						
Year 11 or 12			1.430		0.331	0.335
Certificate			1.367		0.282	0.298
Diploma or Adv. diploma			1.280		0.471	0.459
Bachelor's degree or above			2.207	*	0.746	0.780
Primary carer employment			0.966		0.140	0.143
Financial hardship			0.927		0.158	0.142
Housing problem			1.047		0.141	0.139
Local area SES			1.061		0.038	0.037
Remoteness						
Regional area			0.545	**	0.099	0.096
Remote/very remote area			0.645		0.151	0.122
_cons	0.800	***	1.392		0.943	0.834
Pseudo R2	0.008		0.067			
					0.063	
Number of observations	1081		961		913	

Note: * Denotes $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Hosmer–Lemeshow goodness-of-fit tests indicate that the bivariate model (Model 1) performs poorly, as expected ($\chi^2(5) = 16.87$, $p = 0.004$). In contrast, Models 2 and 3 demonstrate very good fit, with $\chi^2(8) = 4.81$ ($p = 0.777$) and $\chi^2(8) = 6.69$ ($p = 0.570$), respectively.

Students living in regional or remote locations had significantly lower odds of aspiring to university as did those speaking an Indigenous language at home. Two factors exhibited a strong positive association with university aspiration. First, students with higher levels of cultural identity affirmation—those who felt proud, safe, and comfortable expressing their identity at school—were significantly more likely to aspire to university. Second, primary carer education emerged as an important predictor: students whose carers held a bachelor's degree or higher were more than twice as likely to aspire to university as those whose carers had lower levels of education.

Returning to the focus of our analysis, we conducted additional analyses to further understand why the relationship between teacher style and aspiration weakened in Model 2. Theoretically, the attenuation could happen for two possible reasons. First, the relationship might be spurious, driven by confounding variables that influence both teacher style and university aspiration. Second, the relationship might be indirect, mediated through other variables that are themselves affected by teacher style, but influence students' university aspiration. To identify the key contributing variables to this attenuation, we employed a step-wise exclusion approach, removing control variables from the full model one at a time. This analysis revealed that the inclusion of age, sex, and identity affirmation accounts for almost all the reduction in both the magnitude and statistical significance of the teacher style odds ratio in Model 2. As shown in Model A1 of Table A2 in the appendix, when these three variables are excluded from the logit model, the estimated odds ratio for teacher style closely approximates that obtained in the bivariate model (Model 1). Among the three variables, age and sex are inherently exogenous characteristics and are expected to predict university aspiration independently of teacher style. Nevertheless, the reduction in the teacher style odds ratio following the inclusion of these variables suggests that age and sex may also influence students' perceptions of their teachers' interpersonal style. This is supported by Model A2 of Table A2, in the appendix, where both age and sex emerge as significant predictors of perceived teacher style, thus justifying their inclusion in the aspiration model.

On the other hand, identity affirmation emerges as a plausible mediating factor, as it is likely to be influenced by teacher style. It is likely that teachers who adopt inclusive and supportive interpersonal approaches may create classroom environments where Indigenous students feel safe and encouraged to express and take pride in their cultural identities (Bishop and Durksen, 2020; Harslett et al., 2000). To test this, we estimated a multivariate linear regression model, where identity affirmation is an outcome variable (see Model A3 of Table A2 of the Appendix). We found that teacher style is a strong and statistically significant predictor of identity affirmation, even after adjusting for the relevant background characteristics listed in Table A1. Although it is conceivable that students with stronger cultural identity may develop more positive perceptions of their teachers, given the classroom-specific framing of the identity affirmation measurements in LSIC, it is more plausible that teacher style exerts an influence on identity affirmation in this specific context.

To further investigate the mediating role of identity affirmation, we estimated Model 3 (Table 1), in which identity affirmation was excluded from the list of covariates while age and sex were retained. In this specification, the estimated odds ratio for teacher style remained statistically significant at the 5 % level, although it was smaller in size than in the bivariate model. This finding reinforces the hypothesis that identity affirmation mediates the relationship between teacher style and university aspiration.

We also conducted formal mediation analyses to test whether identity affirmation mediates the association between teacher interpersonal style and university aspirations. As can be seen in Table A3, we found consistent evidence of a statistically significant mediation effect of identity affirmation ($\beta = 0.017$, 95 % CI: 0.010, 0.029, $p = 0.004$) across three alternative estimation approaches—the Delta method, Sobel test, and Monte Carlo simulation. In Table A4, estimates from a generalised

structural equation model (GSEM) ($\beta = 0.083$, 95 % CI: 0.023, 0.142, $p = 0.006$) corroborated the results in Table A3.⁴ In both approaches, the indirect effect via identity affirmation accounts for roughly 60 % of the total effect. On the other hand, based on Zhao, Lynch, and Chen's mediation analysis framework (Zhao et al., 2010), the direct effect is statistically non-significant ($\beta = 0.012$, $p = 0.520$; GSEM: $\beta = 0.054$, $p = 0.519$), despite accounting for about 40 % of the total effect.

5.3. Interpretation of findings

Our findings provide evidence that teacher interpersonal style is meaningfully linked to Indigenous students' university aspirations. Teachers who demonstrate attentive listening, care, understanding, fairness, and who create enjoyable learning experiences appear to foster culturally safe and affirming environments in which students feel proud, valued, and confident in their identity. These identity-affirming conditions, in turn, strengthen students' capacity to envision future educational possibilities, including attending university. Although the lack of statistical significance in the direct effect ($\beta = 0.012$, $p = 0.520$; GSEM: $\beta = 0.054$, $p = 0.519$) may suggest “complete mediation” in the Baron and Kenny (1986) framework, the indirect effect via identity affirmation accounts for only about 60 % of the total association. This indicates that the mediation is substantial but clearly partial. It is also conceptually implausible to assume that teacher interpersonal style influences Indigenous students' aspirations solely through identity affirmation. As outlined in the literature review, theory and empirical evidence point to multiple pathways—such as autonomy and competence support, academic encouragement, outcome expectations, mentorship, and the transmission of cultural capital—through which teachers shape students' aspirations.

More broadly, the regression results indicate that the formation of university aspirations among Indigenous students occurs within a complex interplay of demographic and contextual factors. The negative association with age may reflect developmental changes or shifting attitudes toward university pathways as students grow older, while the effects of geographic remoteness highlight the persistent impact of isolation on students' perceived access to higher education. The negative relationship between speaking an Indigenous language at home and university aspiration should not be interpreted as an inherent effect of language use but rather as a marker of broader structural disadvantage. Students who speak an Indigenous language are more likely to live in remote, lower-SES areas and to have primary carers with lower levels of formal education—conditions that constrain access to educational resources and opportunities. Conversely, the positive association between university aspiration and the educational background of the primary carer suggests the presence of an enabling home environment, potentially facilitated through exposure to positive role models and the transmission of cultural capital.

6. Discussion

This study provides new insights into how university aspirations of Indigenous students are formed. Positive teacher interpersonal style manifesting in the form of attentive listening, caring, fairness, understanding is positively associated a heightened aspiration to attend university. These findings reinforce the view that aspirations are not purely cognitive predictions about the future but are deeply relational and embedded in daily classroom experiences (Appadurai, 2004; Huijsmans, Ansell and Froerer, 2020; Sewell et al., 1969).

The results show that although the direct association between teacher interpersonal style and university aspirations diminishes once

⁴ It should be noted however that the parameters are scaled differently; those in Table A3 are derived from a linear model whereas those in Table A4 from a logit model.

demographic, socioeconomic, and geographic factors are controlled for, the relationship remains meaningful when viewed through the mechanism of cultural identity affirmation. The mediation analyses indicate that teacher interpersonal style contributes to aspirations indirectly by fostering culturally safe and affirming environments in which students feel proud and confident in expressing their Indigenous identities. This mechanism aligns closely with established research demonstrating that positive cultural identity is a central driver of educational motivation for Indigenous students (Bodkin-Andrews et al., 2017; Munns et al., 2008; Peacock and Guerzoni, 2022; Mooney et al., 2016). Together, this evidence points to a 'transformative feedback loop' in which supportive teacher relationships strengthen cultural identity affirmation, which then enhances self-efficacy and engagement (Martin and Collie, 2016, 2019), ultimately bolstering aspirations for higher education. In this sense, identity becomes a source of motivation and empowerment rather than a perceived barrier. The concept of 'racial consciousness' (Patfield et al., 2022) further illuminates this process by showing how a positive and empowered relationship with Indigenous identity can fuel long-term educational goal-setting. Patfield and colleagues illustrate this through the case of an Indigenous student who channelled her awareness of systemic inequalities into a commitment to pursue university as a means of contributing to community empowerment and social justice. Rather than viewing higher education as requiring cultural compromise, she reframed it as a strategic pathway to advocate for change.

The strong role of identity affirmation resonates with the scholarship on relational pedagogy within Indigenous educational contexts. Relational pedagogy emphasises that meaningful teacher-student relationships are central to educational success, particularly for Indigenous students (Armstrong et al., 2012; Nakata, 2007). When Indigenous students experience genuine care and support, and witness their cultural identity being respected and valued, their sense of school belonging and educational engagement are significantly strengthened (Kanu, 2007; Purdie et al., 2000; Rahman, 2010; Shay et al., 2021). Harslett et al. (2000) noted that Indigenous students often prioritise positive interpersonal relationships with teachers over specific instructional methodologies in their educational experiences. This preference underscores the fundamental importance of relational approaches in Indigenous education and validates the focus of this study on teacher characteristics rather than purely pedagogical techniques.

The present study supports the growing literature that has shown that teacher encouragement and positive relationships are associated with higher aspirations among students from disadvantaged, minority, and rural backgrounds (e.g., Reddick et al., 2011; Fuller, 2014; Van den Broeck et al., 2020; Gore et al., 2015). Yet it also extends this body of research by demonstrating that, for Indigenous young people, teachers' influence operates not only through academic encouragement but also through identity processes that are culturally specific. Unlike most previous studies, this analysis identifies cultural identity affirmation as a critical mechanism. Teacher interpersonal style matters not simply because it promotes general wellbeing or academic engagement, but because it creates relational conditions that enable Indigenous students to imagine educational futures that feel culturally congruent, personally meaningful, and socially attainable. The results therefore offer an important extension to existing aspiration theory, demonstrating that teacher influence is not uniform across contexts or cultures but can operate through culturally specific pathways. They highlight the need for aspiration research to take culture seriously—not just as a background variable but as a central component of the processes through which aspirations are formed.

The findings also highlight the limiting influence of structural and contextual factors such as geographic isolation and socioeconomic disadvantage. These factors remained strongly associated with aspirations even when accounting for teacher style and identity affirmation. This suggests that while relational and identity-based processes matter, they operate within broader structural constraints that continue to restrict the educational horizons of Indigenous students. This interplay

between relational and structural influences is well recognised in the Indigenous education literature, which emphasises that culturally responsive teaching can buffer—but not erase—the effects of historical exclusion, under-resourcing, remoteness, and intergenerational disadvantage (Guenther et al., 2019). Thus, rather than positioning teachers as the sole driver of aspirations, these results underscore the need for systemic, community-engaged strategies that complement teacher-level relational work.

7. Conclusion

Drawing on the Longitudinal Study of Indigenous Children (LSIC), a survey designed specifically for Indigenous communities by Indigenous experts, and employing multivariate regression analyses, this study examined the relationship between teacher interpersonal style and university aspirations among Indigenous students and identified the pathways through which this relationship operates. The results show that while teacher interpersonal style is positively associated with aspirations in the bivariate model, its direct association diminishes when demographic, socioeconomic, cultural, and geographic factors are considered. Mediation analyses indicate, however, that teacher interpersonal style continues to shape aspirations indirectly by fostering cultural identity affirmation. Students whose teacher are caring, understanding, fair and supportive tend to demonstrate a strong sense of pride and safety in their Indigenous identity, and in turn are more likely to aspire to attend university when they grow older.

These results build on the Wisconsin status attainment model and extend it by integrating culturally grounded mechanisms that are particularly salient for Indigenous learners. They also reinforce key propositions from culturally responsive pedagogy, which argues that identity-affirming teaching is essential for sustaining Indigenous students' motivation and engagement. By demonstrating the relevance of these frameworks to aspiration formation, the study contributes a more culturally attuned understanding of how relational processes within classrooms shape Indigenous young people's perceptions of university as an attainable and meaningful pathway.

The findings have meaningful implications for policy and practice. Interventions aimed at strengthening Indigenous students' university aspirations should not focus solely on academic remediation or information provision but should place equal emphasis on relational and cultural dimensions of teaching. This is particularly pertinent given research demonstrating that high academic achievement does not elevate university aspirations among Indigenous students to the same degree observed among high-achieving non-Indigenous students (Gore et al., 2017). Professional learning that builds teachers' capacity for culturally responsive pedagogy—particularly skills in listening, fairness, relational warmth, and cultural respect—may help foster the identity-affirming environments shown to support aspirations. At a system level, policies that enable sustained, trust-based relationships between teachers, students, and communities are likely to be especially beneficial, given the centrality of identity and belonging in shaping future-oriented motivation.

8. Limitations

While our analysis offers new insights into how teacher interpersonal style relates to university aspirations among Indigenous students, several data and methodological limitations warrant acknowledgment. First, the present study relies on cross-sectional data to examine the association between teacher interpersonal style and university aspiration, primarily because longitudinal measures of teacher style are unavailable. This limits our ability to understand how teacher-student interactions shape aspirations over time. Future research would benefit from longitudinal designs that track students across developmental stages, should teacher style data become available in future LSIC waves. Such an approach would enable a more nuanced understanding of how

sustained exposure to positive teacher styles influences the formation and evolution of university aspirations among Indigenous students.

Second, the study identifies associations rather than causal effects. Despite drawing on strong theory and accounting for extensive control variables endogeneity may persist due to omitted variables—such as prior academic self-concept, family expectations, peer influences, or personality traits—that could influence both perceptions of teacher style and aspirations. Reverse causality is also possible if students with stronger aspirations perceive teachers more positively, although the proposed mechanism—teacher behaviours shaping identity affirmation—has stronger theoretical grounding. Without exogenous variation in teacher interpersonal style, causal direction cannot be definitively established. Future research could strengthen causal inference through longitudinal designs or quasi-experimental approaches.

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CRediT authorship contribution statement

Yonatan Dinku: Writing – review & editing, Writing – original draft,

Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Deirdre Howard-Wagner:** Writing – review & editing, Data curation, Conceptualization.

Ethics

The Longitudinal Study of Indigenous Children (LSIC), from which the findings in our paper are drawn, has received ethics clearance from the Human Research Ethics Committee of the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS). The study is conducted by the Department of Social Services (DSS), which holds the ethical approval. As researchers, we have been commissioned by DSS to produce a summary report based on LSIC data, and our paper is derived from this work. More information about the study can be found here: <https://www.dss.gov.au/long-term-research/footprints-time-longitudinal-study-indigenous-children/footprints-time-information-participants>.

Declaration of Competing Interest

The authors declare no competing interests relevant to this paper.

Appendix

Table A1
Variable description and summary statistics

Variable	Definition	Obs.	Mean	Std. Dev.	Min	Max
University aspiration	Whether SC aspires to go to university: Yes= 1; No= 0.	1123	0.444	0.497	0	1
Teacher -student relationship	Composite index, in standardised scores	1143	0.000	1.000	-4.661	0.799
Age	In years.	1253	12.258	1.518	10	15
Sex	Male= 0; Female= 1.	1256	0.515	0.499	0	1
Disability: [Yes= 1; No= 0].	Whether SC has a disability issue: Yes= 1; No= 0.	1237	0.05	0.218	0	1
Indigenous language	Whether SC speaks an Indigenous language at home: Yes= 1; No= 0.	1192	0.201	0.401	0	1
Identity affirmation	Composite index, in standardised scores.	1093	0.000	1.111	-4.541	0.775
Primary carer education	The highest level of education the primary carer has attained: Year 10 or below= 1; Year 11 or 12 = 2; Certificate levels= 3; Diploma= 4; Bachelor or above = 5.					
	Year 10 or below.	298	0.26	0.439	0	1
	Year 11 or 12.	237	0.207	0.207	0	1
	Certificate.	404	0.353	0.353	0	1
	Diploma or advanced diploma.	98	0.086	0.279	0	1
Primary carer employment	Bachelor's degree or above.	108	0.094	0.292	0	1
	Whether primary carer is in paid employment: Yes= 1; No= 0.	1241	0.52	0.499	0	1
Financial hardship:	In the past 12 months, whether the primary carer could not meet basic financial expenses (such as utility, rent/mortgage, food, etc.) or sought assistance or sold something because of shortage of money: Yes= 1; No= 0.	1235	0.344	0.475	0	1
Housing problem:	In the last 12 months, whether the primary carer felt too crowded where they live, moved house, or had housing problems: Yes= 1; No= 0.	1243	0.297	0.457	0	1
Local area socioeconomic status (SES)	Measured by the 2016 of Index of Education and Occupation (in deciles). ^a	1242	3.162	2.271	1	10
Remoteness	The geographic remoteness of the area of usual residence: Major city= 1; Regional area= 2; Remote area= 3.					
	Major city	357	0.285	0.285	0	1
	Regional area	555	0.443	0.443	0	1
	Remote area	341	0.272	0.445	0	1

Note: ^a The Index is developed by the Australian Bureau of Statistics to measure the educational and occupational level of communities. Areas with low deciles have few people with a high level of qualifications or in highly skilled occupations, and areas with high deciles have many people any people with higher education qualifications or many people in highly skilled occupations.⁵

Table A2 presents results of the sensitivity analyses conducted to examine the pathways relating teacher style to university aspiration. The outcome variable is different across the three models: university aspiration in Model A1, teacher style in Model A2, and identity affirmation in Model 3.

⁵ <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/2033.0.55.001-2016~Main%20Features~IEO~22>

Table A2

Regression results: Sensitivity analysis

	Model A1			Model A2			Model A3		
	OR		SE	COEF.		SE	COEF.		SE
Teacher style	1.233	**	0.082				0.334	***	0.060
Age				-0.187	***	0.020	-0.008		0.019
Sex				0.151	*	0.059	0.113		0.059
Disability	0.822		0.274	-0.317		0.189	-0.276		0.182
Speaks Indigenous language	0.620	*	0.121	-0.159	*	0.068	0.258	**	0.077
Primary carer education									
Year 11 or 12	1.586	*	0.338	-0.060		0.084	0.001		0.100
Certificate	1.571	*	0.312	-0.004		0.088	-0.017		0.088
Diploma or Adv. Diploma	1.362		0.483	0.063		0.122	-0.023		0.117
Bachelor or higher	2.438	**	0.821	-0.024		0.158	-0.126		0.128
Primary carer employment	0.892		0.130	-0.044		0.073	0.025		0.074
Financial hardship	0.876		0.136	-0.136	*	0.066	-0.044		0.060
Housing problem	1.082		0.134	-0.033		0.068	-0.040		0.061
Local area SES	1.053		0.036	-0.004		0.014	-0.016		0.015
Remoteness									
Regional area	0.544	**	0.099	-0.075		0.086	-0.096		0.057
Remote area	0.562	*	0.126	0.087		0.103	-0.187		0.098
_cons	0.843		0.201	2.227	***	0.263	0.052		0.248
Pseudo R2	0.047								
R2				0.105				0.134	
Number of observations	913			1014			963		

Note: * Denotes $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Pseudo R2 is presented for a logit regression in Model A1 while R2 is presented for Ordinary Least Squares (OLS) regressions in Models A2 and A3.

Table A3

Significance testing of indirect effect (unstandardised)

Estimates	Indirect effect	SE	z-value	p-value	95 % CI	
Delta	0.017	0.006	2.842	0.004	0.005	0.029
Sobel	0.017	0.006	2.842	0.004	0.005	0.029
Monte Carlo	0.017	0.006	2.842	0.004	0.006	0.030

Table A4

Mediation analysis using a generalised structural equation model(gsem)

	Coefficient	SE	z-value	p-value	95 % CI	
Indirect	0.083	0.030	2.730	0.006	0.023	0.142
Direct	0.054	0.084	0.650	0.519	-0.110	0.219
Total	0.137	0.080	1.700	0.088	-0.020	0.294
RIT	0.604	0.405	1.490	0.136	-0.190	1.400

RIT= Ratio of Indirect and Total effect

Data availability

The data used in this analysis are owned by the Department of Social Services and are accessible only to approved users; therefore, the authors do not have permission to share them.

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