School climate: Using a person–environment fit perspective to inform school improvement

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Abstract
Strong and consistent findings suggest that a positive school climate is related to improved student outcomes. However, assessment of the school climate rarely considers the environmental fit (or misfit) between individuals’ actual or lived experiences and their preferred environment. This study drew on a person-environment fit perspective to examine whether: students’ experiences of the school climate (actual environment) differed from their views of their ideal school climate (preferred environment); the views of the actual and preferred environment differed between schools; and the actual–preferred discrepancy (as a measure of the environmental fit) was related to student wellbeing, resilience and reports of bullying. The results from the analysis of data collected from 993 upper primary school students suggest that outcomes were enhanced when the perceived environment more closely matched the preferred environment. Our study’s findings support using a person-environment fit perspective alongside a socio-ecological approach to inform strategic decisions for school improvement efforts.

Keywords Data-informed decision-making · Learning environment · Person–environment fit · Perception data · School climate · School improvement

Background
The psychosocial school climate refers to the overall atmosphere of a school, including social, emotional and interpersonal aspects. The school climate quantifies the lived experiences of school members, which are shaped by the unspoken ethos, norms, values and beliefs that pervade a school (Cohen et al., 2009). The school climate is reflected in the relationships and daily interactions between school members, the rituals and traditions of school life, feelings of safety and inclusion and contextual factors that might impact student learning (Cohen, 2013).
The critical role the school climate plays in student wellbeing, academic success and personal development is gaining growing recognition. Research findings suggest that the school climate provides the protective factors needed to guard against adverse student experiences (Doumas et al., 2017; Keane & Evans, 2022) and promote a range of outcomes, including life satisfaction (Aldridge et al., 2020), mental health (e.g., a review of literature by Aldridge & McChesney, 2018) and overall wellbeing (Varela et al., 2019). Further, positive school climates have been found to have an inverse relationship with adverse outcomes, such as school violence (Booren et al., 2011; Espelage & Hong, 2019; Steffgen et al., 2013), bullying (Acosta et al., 2019; Marchante et al., 2022; Varela et al., 2021) and antisocial (Manzano-Sánchez et al., 2021; O’Brien et al., 2014), delinquent (Akmann, 2021; Aldridge et al., 2018; Klein et al., 2012; Kohl et al., 2013) and aggressive behaviours (e.g., Low et al., 2014). School climate factors have also been found to influence the development of social skills, such as prosocial behaviours (González Moreno & Molero Jurado, 2022; Luengo et al., 2017; Patalay & Fitzsimons, 2016; Thapa et al., 2013), personality (Roberts & Robins, 2004) and resilience (Aldridge et al., 2016; Cohen, 2013; Kutsyuruba et al., 2015); all of which are essential precursors to bullying prevention (Acosta et al., 2019; Cohen, 2013; Cohen & Freiberg, 2013; Wang et al., 2013a, 2013b).

Of relevance to this study, is that a school’s climate plays an essential role in school improvement efforts (Thapa et al., 2013). This makes sense given that students in schools with positive school climates are not only more motivated to actively participate in their learning (e.g., Eccles et al., 1991), but are also more likely to attend regularly (Daily et al., 2020) and less likely to be suspended (Lee et al., 2011). Further, positive school climates have the potential to improve learning outcomes and academic achievement (Shindler et al., 2016), reduce achievement gaps and increase career prospects for students from less advantaged backgrounds (Berkowtz, 2022; Hopson & Lee, 2011).

Growing recognition of the importance of a positive school climate has led to increasing interest in its measurement at both the school and education system levels (Cohen et al., 2009). However, traditionally, measures of school climate have relied on assessing students’ experiences of the actual environment, without consideration of their needs. Whilst assessment of the actual environment is meaningful, given the strong and consistent relationship between school climate factors and student outcomes (Aldridge & McCchesney, 2018; Thapa et al., 2013), we contend that consideration of the match (or misfit) between the person and the environment is integral to effective strategic decision-making and school improvement efforts. Therefore, in our study, we drew on a person-environment fit perspective to examine whether a focus on reducing a lack of congruence between students’ perceived and desired experiences could improve their outcomes. To examine this overarching aim, three research objectives were addressed:

1. To examine differences in the perceived (actual) and preferred school climate.
2. To investigate whether students’ views of the perceived and preferred school climate were similar for students in the same school but different from those in other schools.
3. To examine the relationships between students’ reports of resilience, wellbeing and bullying, and:
   a. Their perceived (actual) school climate.
   b. The actual–preferred discrepancy (size of the environmental misfit).
Assessing school climate

Within the field of learning environments, surveys have been developed to assess classroom-level and school-level environments. The pioneering work of Walberg and Anderson (1968) and Moos and Trickett (1974) saw the development of the first learning environment surveys. These instruments were designed to assess students’ perceptions of classroom-level factors, such as the relationships between students and their peers and their teachers (Fraser, 2013). Initially, measurement of the school-level environment was associated with the field of educational administration (Anderson, 1982; Stewart 1979) and focused on aspects related to an organisational climate. However, during the 1960s, a shift in education in the United States that sought to address equity and inclusion issues, saw the emergence of the first school climate surveys. Since this time, numerous instruments have been developed to assess the school climate from the perspectives of different school members (González et al., 2022), including teachers (e.g., Aldridge & Fraser, 2016; Bear et al., 2014), parents (e.g., Aldridge & McChesney 2018) and students (e.g., Aldridge and Ala’i, 2013; Bear et al., 2011).

It is widely agreed that school climate is a multidimensional construct (Thapa et al., 2013; Wang & Degol, 2016). Despite a lack of consensus regarding which aspects of the school climate should be included in a measure (Cohen et al., 2009; Wang & Degol, 2016), there is a growing recognition that coverage of four broad categories is important (e.g., Thapa et al., 2013; Wang & Degol, 2016), these being: safety (assessing the physical and emotional safety provided by the school), community (assessing the quality of the relationships within the school), academic atmosphere (assessing the quality of the instruction and learning support) and institutional environment (assessing how the shared beliefs contribute to overall sense of belonging or inclusion). Although the institutional environment can also assess the quality of the physical environment, our survey did not include this aspect.

As well as being multidimensional, factors that contribute to school climate are considered to be malleable, unlike those outside schools (such as family). That is, measures of school climate should provide information about school-related factors that educators can, to some extent, change or control (García-Carrión et al., 2019; Long et al., 2020). The malleable nature of the school climate is an important consideration in school improvement efforts as it allows school leaders and education systems to target the improvement of environmental factors that are highly correlated with desired student outcomes (Wang & Degol, 2016).

Person–environment fit

The notion of person-environment fit originates from the work of French et al. (1974), which was heavily influenced by Lewin’s (1935) field theory. Lewin’s (1936) equation $B = f(P, E)$ proposes that a person’s behaviour ($B$) is a function of (rather than distinct from) their personal characteristics ($P$) and the environment ($E$), highlighting the importance of the environment in understanding behaviour.

A person-environment fit perspective focuses on the interactions between individuals and their environment, with the knowledge that one constantly influences the other (Edwards et al., 1998). Underpinning a person-environment fit perspective is the innate desire for individuals to fit in their environment, which includes a need to belong (Deci & Ryan, 2000; van Vianen, 2018), have autonomy over their life (Hutchings & Chaplin,
reduce uncertainty and increase consistency (Yu, 2013). The fit (or misfit) between the person and the environment causes satisfaction or dissatisfaction and affects an individual’s behaviours, and mental and physical health (Caplan & Harrison, 1993; Greguras et al., 2014). Further, a misfit between what a person desires and the actual environment has been highly correlated to psychological (e.g., anxiety or stress) and physiological (e.g., physical wellbeing (Dahm et al., 2015) and elevated blood pressure (Edwards & Cooper, 1998; Edwards et al., 1998; Nagai & Dasari, 2023)) outcomes.

The two components of person–environment fit, the individual and the environment, can be described objectively or subjectively (Bohndick et al., 2018; Caplan, 1987). In our study, we used a subjective perspective in which self-ratings (subjectively perceived) of personal qualities (as opposed to the consensual judgement of peers or educators) and (subjective) perceptions of the environment (as opposed to consensual judgments or the concrete environment) were used. The latter (perceptions of the environment) involved students’ views of their actual school climate (the subjective resources provided by the school) and their preferred school climate (subjective needs).

The work of Moos (1987), which examined the social environments in a range of milieu, examined how the degree of fit between the perceived and desired environment might influence outcomes. Moos (1979) pioneered the use of both actual and preferred versions of social climate surveys, in which the actual version assessed a person’s perceptions of the environment and the preferred version assessed the environment a person would like (ideal environment). Using both an actual and preferred version allowed the examination of the congruence between what a person needs and what the environment provides. The magnitude of the actual–preferred difference provides information about the environmental fit or misfit. Historically, the two versions (actual and preferred) were administered separately about one week apart. The different versions had corresponding items and although the content was similar for each, the preferred version used a conditional tense (e.g., would). For example, a statement in the actual version would read “Students in this class like me”; in the preferred version, the same item would read “Students in this class would like me”. More recent research has used a more economical side-by-side format to capture the two responses simultaneously (Aldridge et al., 1999). Students are instructed to respond to each item twice to report how often the statement takes place and how often they would like it to occur (a wish list if you will). Our study used a side-by-side format.

In keeping with a person–environment perspective, this research drew on the premise that outcomes would improve when a person’s perceptions of the environment were more aligned with their preferences. Past research at the classroom level has suggested that more positive outcomes result when the learning environment is better matched to the student’s needs (see Fraser & Fisher, 1983a, 1983b). Of the limited number of studies examining whether person–environment fit influenced student outcomes, the majority of these were carried out at the college or university levels. These studies found that a greater person–environment fit improved relationship building with instructors (Deng & Yaím, 2020) and students’ performance (Pawlowska et al., 2014), satisfaction (Rocconi et al., 2020) and wellbeing (Gilbreath et al., 2011). Past research examining person–environment fit in schools is limited. Only a handful of studies have been reported, all of which were carried out at the classroom level (see Fraser & Fisher, 1983a, 1983b). These early classroom-level studies provide evidence to suggest that the actual–preferred differences reported by students could influence their outcomes at the school level.
Despite the limited research available to support the efficacy of using actual–preferred differences at the school level, we hypothesised that improvement efforts to reduce these differences could promote improved outcomes. To our knowledge, past research has not examined relationships between the actual–preferred differences and student resilience, wellbeing and bullying; therefore, our research helps to fill this gap.

Methods

Sample

The sample was drawn from 12 primary schools across three Australian states. To increase generalisation, the schools were co-educational and located in metropolitan (n=9) and regional (n=3) areas.

In each school, the surveys were administered to all students who volunteered to participate and were present on the day of administration. This provided a total of 1002 cases. During data cleaning, nine cases (approximately 1.01%) were removed as the responses indicated these students were disengaged (standard deviation of 0) or provided the incorrect year level.

Of the remaining 993 cases, 493 (49.6%) respondents identified as male and 500 (50.4%) respondents identified as female. The students, aged between 11 to 12 years of age, were enrolled in years five (n=478, 48.1%) and six (n=515, 51.9%). The distribution of students across metropolitan (n=742) and regional (n=251) schools generally reflected the differences in school sizes in these areas.

Instruments

The collection of data for the study involved the administration of two surveys, one to assess students’ perception of the school climate and the other to assess students’ self-reports of wellbeing, resilience and bullying.

Perceptions of the school climate

The What’s Happening In This School—Primary (WHITS-P; Aldridge & Blackstock, 2024) was used to assess students’ perceptions of the school climate. The WHITS-P was based largely on the secondary school version of the What’s Happening In This School (WHITS; Aldridge & Ala’i, 2013; Riekie & Aldridge, 2017). Development of the WHITS-P involved extrapolating and modifying items (which included simplifying the language and reducing the number of items) to make them suitable for use with younger students. To improve reliability and comprehensibility, items belonging to a scale were grouped together and a child-friendly header was provided at the beginning of each group as a contextual cue. To reduce confusion, all items were worded positively.

To reflect the multidimensional nature of the school climate, the WHITS-P included seven scales to provide coverage of the four broad categories identified by Wang and Degol (2016). Two scales, teacher support and peer connectedness, assessed the quality of the interpersonal relationships in the school (community). Two scales, rule clarity and reporting and seeking help, assessed the quality of the processes, procedures and other mechanisms used to support school safety (safety). Two scales, support for learning and high
expectations, assessed the quality of the learning support (academic atmosphere). Finally, one scale, school connectedness, assessed the extent to which the norms, values and policies gave students a sense of belonging and being valued (institutional environment).

Apart from high expectations, which was assessed using three items, the six remaining scales were assessed using four items. Each item was responded to using a simplified five-point frequency-response format that was developed over multiple trials. The response format included three major anchor points labelled ‘almost never’, ‘sometimes’, and ‘almost always’. An emoji face accompanied these major anchor points to provide a visual cue. In addition to the three major anchor points, two additional anchor points were included, one between the response alternatives of ‘almost never’ and ‘sometimes’ and another between ‘sometimes’ and ‘almost always’. A side-by-side format was used to collect the actual and preferred responses simultaneously. Using this format, students responded twice for each statement: once for how often the statement actually happened and again for how often they would like it to happen. Table 1 provides the broad category, a brief description and a sample item for each WHITS-P scale.

Student outcomes

Three scales were used to assess student self-reports of resilience, wellbeing and bullying. All were comprised of four items and used the same five-point response format to measure the school climate. The scales were modified (by reducing the number of items and simplifying the language where appropriate) from existing instruments developed for use in secondary schools. The resilience scale was adapted from a scale initially developed by Wagnild and Young (1993) and later adapted for use with secondary students (Riekie & Aldridge, 2017). The scale demonstrated sound psychometric properties in previous studies (e.g., Aldridge et al., 2016) and sought to examine concepts of perseverance and self-reliance. The wellbeing scale was modified from the WHO-Five (WHO, 1998) to assess students’ positive wellbeing. When used with secondary students, a modified version reported good psychometric properties (e.g., Riekie et al., 2017). Finally, the bullying scale was modified from a survey developed initially by Bandyopadhyay et al. (2009) to assess the extent to which students felt they were victims of bullying. When responding to outcomes scales, students were asked to consider how often each item occurred over the previous two weeks.

Analyses

Analysis of the data, described below, was carried out using SPSS (version 29).

For the first research objective, descriptive statistics, including means and standard deviations, were used to compare student responses to the actual and preferred version of the WHITS-P. To examine whether the actual-preferred differences were statistically significant, paired samples t-tests were used. Finally, to examine the magnitude of the differences, the effect sizes were calculated for each scale using the following formula:

\[
\text{Cohen's } d = (M_2 - M_1)/SD_{pooled}
\]

For the second research objective, a one-way analysis of variance (ANOVA) with school membership as the main effect was used to examine whether students’ responses to actual and preferred versions of the WHITS-P differed across the 12 schools. Two indices related to the ANOVA results were examined, the significance level and \( \eta^2 \) statistic (the
<table>
<thead>
<tr>
<th>Area</th>
<th>Construct</th>
<th>Scale description</th>
<th>Sample item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community</td>
<td>Teacher Support</td>
<td>The extent to which students perceive that teachers at the school are supportive and helpful.</td>
<td>The teachers at this school listen to me.</td>
</tr>
<tr>
<td>Safety structures</td>
<td>Peer Connectedness</td>
<td>The extent to which students feel that there is contact and friendship between students.</td>
<td>The children at school like me.</td>
</tr>
<tr>
<td></td>
<td>Rule Clarity</td>
<td>The extent to which students perceive the school rules to be clear and promote a safe and orderly environment.</td>
<td>I know the school rules.</td>
</tr>
<tr>
<td></td>
<td>Reporting and Seeking Help</td>
<td>The extent to which students are aware of procedures and feel safe reporting incidents.</td>
<td>I can tell a teacher when bad things happen.</td>
</tr>
<tr>
<td>Academic support</td>
<td>Support for Learning</td>
<td>The extent to which students perceive that their teachers support their learning.</td>
<td>My teachers know when I don’t understand something.</td>
</tr>
<tr>
<td></td>
<td>High Expectations</td>
<td>The extent to which students perceive that teachers expect them to succeed and challenge them to learn.</td>
<td>My teachers expect me to do well.</td>
</tr>
<tr>
<td>Institutional Environment</td>
<td>School Connectedness</td>
<td>The extent to which students perceive they are a valued part of the school community.</td>
<td>I feel welcome at this school.</td>
</tr>
</tbody>
</table>
proportion of ‘between’ to ‘total’ sums of squares), to provide a measure of the degree of association between student responses and the dependent variable to examine the variance explained by school membership (Field, 2009).

For the third research objective, simple correlation and multiple regression analysis were used to examine the relationships between the outcome variables (resilience, well-being and bullying) and a) students’ perceptions of the school climate and b) the size of the actual–preferred discrepancy. Simple correlations (Pearson’s correlation coefficient) were used to summarise the strength and degree of the relationships. Multiple regression analysis was used to help to understand whether a school climate scale contributed to the student outcomes over and above the contributions made by other school climate variables. Beta coefficients were used to examine the predictive ability of each variable.

Although the analysis was the same for both parts of research objective three, the data used differed. To examine the relationships between the three outcomes and students’ perceptions of the school climate (part 1 of research objective 3), the aggregated responses to items in the actual version of each WHITS-P scale were used. To investigate the relationships between the three outcomes and the degree of fit or misfit (part 2 of research objective 3), the absolute value for the difference between a student’s actual and preferred responses was calculated and then used to aggregate the scores of the items in each scale.

Results

Research objective 1: actual–preferred comparisons

The first research objective compared students’ responses to the actual and preferred versions of the WHITS-P. The average item means, portrayed graphically in Fig. 1 and reported in Table 2, indicate that students’ responses to the preferred version were higher than the actual version for all but one WHITS-P scale, high expectations. Except for the high expectations scale, the range of responses to the preferred version was narrower (with standard deviations ranging from 0.505 to 0.743) than for responses to the actual version (with standard deviations ranging from 0.705 to 0.908). The high expectations scale was the only one for which the preferred responses were lower than the actual responses. Whilst the difference was small and statistically non-significant, this result suggests that students would like less than they receive.

The t-test results, reported to the right of Table 2, suggest that the differences were statistically significant ($p < 0.01$) for all scales except high expectations. The effect sizes, calculated to estimate the magnitude of the differences, ranged from approximately one-third (effect size = 0.395) to over three-quarters (effect size = 0.834) of a standard deviation for scales with a statistically significant difference.

Research objective 2: differences across schools

One-way ANOVA was used to examine whether students’ mean responses to the actual and preferred version of the WHITS-P differed based on school membership. The results, reported in Table 3, indicate that, for responses to both the actual and preferred versions, there was a statistically significant ($p < 0.05$) difference for all WHITS-P scales. The $\eta^2$ statistic for different WHITS-P scales ranged from 0.023 to 0.050 for the actual version and from 0.051 to 0.113 for the preferred version. The $F$-values were all greater than 1,
ranging from 2.108 to 4.673 for the actual version and from 4.771 to 11.338 for the preferred version. These results (the \( F \)-value and \( p \)-value) suggest that students in the same school viewed the school climate similarly but differed from those in other schools.

**Fig. 1** Average item means for students’ responses to actual and preferred versions of WHITS-P scales

**Table 2** Mean, standard deviation, and difference (\( t \)-test results and effect sizes) for responses to the actual and preferred versions of each WHITS-P scale

<table>
<thead>
<tr>
<th>WHITS-P sScale</th>
<th>Actual</th>
<th>Preferred</th>
<th>Difference</th>
<th>Paired Samples Test (( t ))</th>
<th>Effect Size (Cohen’s ( d ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Support</td>
<td>4.138 0.753</td>
<td>4.586 0.550</td>
<td>21.483*</td>
<td>0.679</td>
<td></td>
</tr>
<tr>
<td>Peer Connectedness</td>
<td>4.109 0.701</td>
<td>4.619 0.505</td>
<td>25.774*</td>
<td>0.834</td>
<td></td>
</tr>
<tr>
<td>Reporting and Seeking Help</td>
<td>4.197 0.829</td>
<td>4.503 0.714</td>
<td>15.511*</td>
<td>0.395</td>
<td></td>
</tr>
<tr>
<td>Rule Clarity</td>
<td>4.313 0.705</td>
<td>4.602 0.606</td>
<td>18.914*</td>
<td>0.397</td>
<td></td>
</tr>
<tr>
<td>Support for Learning</td>
<td>4.040 0.840</td>
<td>4.502 0.657</td>
<td>20.769*</td>
<td>0.613</td>
<td></td>
</tr>
<tr>
<td>High Expectations</td>
<td>4.357 0.558</td>
<td>4.356 0.664</td>
<td>(-0.122)</td>
<td>(-0.003)</td>
<td></td>
</tr>
<tr>
<td>School Connectedness</td>
<td>3.901 0.908</td>
<td>4.409 0.743</td>
<td>23.018*</td>
<td>0.612</td>
<td></td>
</tr>
</tbody>
</table>

\( N\)=993 students in 12 schools

\( ^* p < .01 \)
Research objective 3: relationships

Simple correlation and multiple regression analysis were used to investigate relationships between the three student outcomes and (a) the school climate and (b) the actual–preferred discrepancy.

School climate–outcome relationships

First, the results of simple correlation analysis involving students’ responses to the actual version, reported in Table 4, suggest that the relationships between all seven WHITS-P scales and student reports of resilience and wellbeing were positive and statistically significant ($p < 0.01$). These results imply that when school climate factors (as assessed using the WHITS-P) are experienced more positively, students report increased resilience and better wellbeing. Conversely, the correlations between the WHITS-P scales and reports of bullying were all negative and statistically significant ($p < 0.05$), suggesting that, when students experienced the school climate more positively, they reported fewer experiences of bullying.

Multiple regression analysis was used to determine which school climate factors predicted student outcomes. The overall regression, reported in Table 4, was statistically significant for all three outcomes: resilience (multiple $R = 0.595$, $R^2 = 0.353$, $p < 0.01$), wellbeing (multiple $R = 0.769$, $R^2 = 0.591$, $p < 0.01$), and bullying (multiple $R = 0.460$, $R^2 = 0.212$, $p < 0.01$). The results of multiple regression analyses revealed that all WHITS-P scales except teacher support positively and statistically significantly ($p < 0.01$) predicted student resilience; five scales (peer connectedness, reporting and seeking help, rule clarity, support for learning and school connectedness) statistically significantly ($p < 0.01$) and positively predicted student wellbeing; four scales (peer connectedness, reporting and seeking help, support for learning and school connectedness) statistically significantly ($p < 0.05$) and negatively predicted reports of bullying and one scale, high expectations, statistically significantly ($p < 0.01$) and positively predicted reports of bullying.
Table 4  Simple correlations (Pearson’s correlation) and standardised regression coefficients: Relationships between students’ responses to the actual version of the WHITS-P of the WHITS-P, the actual–preferred difference and their reports of resilience, wellbeing and bullying

<table>
<thead>
<tr>
<th>Scale</th>
<th>Resilience Actual</th>
<th>Resilience Actual–Preferred Gap</th>
<th>Wellbeing Actual</th>
<th>Wellbeing Actual–Preferred Gap</th>
<th>Bullying Actual</th>
<th>Bullying Actual–Preferred Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
<td>β</td>
<td>r</td>
<td>β</td>
<td>r</td>
<td>β</td>
</tr>
<tr>
<td>Teacher Support</td>
<td>0.406**</td>
<td>−0.294**</td>
<td>−0.073*</td>
<td>0.555**</td>
<td>−0.418**</td>
<td>−0.143**</td>
</tr>
<tr>
<td>Peer Connectedness</td>
<td>0.433**</td>
<td>0.194**</td>
<td>−0.258**</td>
<td>−0.132**</td>
<td>0.533**</td>
<td>0.141**</td>
</tr>
<tr>
<td>Reporting and Seeking Help</td>
<td>0.381**</td>
<td>0.121**</td>
<td>−0.236**</td>
<td>−0.064**</td>
<td>0.517**</td>
<td>0.087**</td>
</tr>
<tr>
<td>Rule Clarity</td>
<td>0.385**</td>
<td>0.088*</td>
<td>−0.248**</td>
<td>−0.068**</td>
<td>0.525**</td>
<td>0.091**</td>
</tr>
<tr>
<td>Support for Learning</td>
<td>0.389**</td>
<td>0.131**</td>
<td>−0.263**</td>
<td>0.503**</td>
<td>0.093**</td>
<td>−0.348**</td>
</tr>
<tr>
<td>High Expectations</td>
<td>0.322**</td>
<td>0.056**</td>
<td>−0.319**</td>
<td>−0.186**</td>
<td>0.297**</td>
<td>−0.314**</td>
</tr>
<tr>
<td>School Connectedness</td>
<td>0.535**</td>
<td>0.354**</td>
<td>−0.332**</td>
<td>−0.168**</td>
<td>0.719**</td>
<td>0.475**</td>
</tr>
<tr>
<td>Multiple Correlation (R)</td>
<td>0.595**</td>
<td>0.438**</td>
<td>0.769**</td>
<td>0.575**</td>
<td>0.463**</td>
<td>0.406**</td>
</tr>
<tr>
<td>Multiple Correlation (R Square)</td>
<td>0.354**</td>
<td>0.192**</td>
<td>0.592**</td>
<td>0.330**</td>
<td>0.213**</td>
<td>0.166**</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01

Note that correlations that were not statistically significant have been omitted
Relationships between preferred–actual congruence and outcomes

Whereas the previous analyses examined relationships between students’ lived experiences of school climate and their outcomes, this section reports relationships between the actual–preferred discrepancy for each WHITS-P scale and the student outcomes.

The results of simple correlation analyses, used to examine the bivariate relationship between the actual–preferred discrepancy and each outcome, reported in Table 4, indicate that, without exception, the correlations were statistically significant ($p < 0.01$). All relationships were negative for resilience and wellbeing and positive for bullying, suggesting that, when the actual–preferred gap is smaller, students report greater resilience and wellbeing and less bullying.

Multiple regression analysis was used to evaluate the relationships between the actual–preferred discrepancy for a school climate scale and a student outcome while controlling for the effect of the other scales. The results, reported in Table 4, suggest that the overall regression was statistically significant for all three outcomes: resilience (multiple $R = 0.431$, $R^2 = 0.186$, $p < 0.01$), wellbeing (multiple $R = 0.572$, $R^2 = 0.327$, $p < 0.01$) and reports of bullying (multiple $R = 0.406$, $R^2 = 0.165$, $p < 0.01$). Examination of the $p$-values and beta values suggest that, for resilience, the actual–preferred discrepancy for all WHITS-P scales, except the support for learning scale, were negative and statistically significantly ($p < 0.05$). For wellbeing, the actual–preferred discrepancy for five WHITS-P scales were negative and statistically significant ($p < 0.01$), the exceptions being reporting and seeking help and support for learning (which were nonsignificant). Finally, for reports of bullying, the actual–preferred discrepancy for five WHITS-P scales was statistically significant ($p < 0.01$) and positive; the exceptions, support for learning and high expectations, were nonsignificant.

Discussion

A person-environment fit perspective is focused on the interactions between an individual and the environment and assumes that a good match between the two promotes positive outcomes. Using this premise, the study reported in this article examined whether smaller actual–preferred discrepancies promoted student resilience and wellbeing and reduced bullying.

First, we examined whether students’ views of the actual and preferred environment differed. The statistically significant $t$-test results and effect sizes for all but one WHITS-P scale (high expectations) suggest that students would prefer the school climate features to occur more often. These findings are consistent with research at the classroom level, which suggests that students desire a more positive environment than the one they experience (e.g., Fraser, 1982; Magen-Nagar & Steinberger, 2017).

For the exception, high expectations, there was only a slight (statistically non-significant) actual–preferred discrepancy. It is noteworthy, however, that students’ responses indicates their actual experiences exceeded their preferences. To our knowledge, few, if any, studies in the field of learning environment report discrepancies in this direction. Moos (1987) warns, however, that when the environment exceeds a person’s preference, dysfunction can occur because personal characteristics (such as self-esteem) influence the interplay between personal and environmental factors. It is recommended,
therefore, that future studies examine the extent to which dysfunction occurs when the environment exceeds a person’s preference and that educators seek causal explanations.

Second, the ANOVA results were interpreted to determine whether the mean responses for students in the same school were similar but different from those of students in other schools. The statistically significant results for responses to the actual version for all WHITS-P scales, suggesting the perceptions of students can be differentiated between schools, corroborate those of past studies (e.g., Johnson et al., 2007; Riekie & Aldridge, 2017). This finding makes sense given that a school’s climate is influenced by a range of factors, such as interpersonal relationships, making each one unique (Tomaszewski et al., 2023).

The statistically significant ANOVA results for students’ responses to the preferred version for all WHITS-P scales were also notable. These findings suggest that not only is a school’s climate unique, but the needs of students within a school (as reported in the preferred version) also differs between schools. From a cultural capital perspective (Davies & Rizk, 2018), this finding reflects the intrinsic relationship between the community in which it is situated (e.g., socio-economic demographics), the school’s organisational practices and the school culture (Tarabini et al., 2017). These findings support the need for school improvement efforts that are culturally responsive and consider the sociocultural context (e.g., Antrop-Gozales & De Jesus, 2006; McLure & Aldridge, 2022).

We then examined the relationships the relationships between students' reports of resilience, wellbeing and bullying and responses to, first, the actual version of the WHITS-P and, second, the actual–preferred discrepancy. The relationships between the actual version of the WHITS-P and the three outcomes, suggest that positive school climates could promote students’ resilience and wellbeing and reduce bullying. These findings corroborate those of past research that examined the influence of school climate factors on emotional wellbeing (e.g., Aldridge & McChesney, 2018; Aldridge et al., 2016; Kutsyuruba et al., 2015; Lester & Cross, 2015; Riekie & Aldridge, 2017), resilience (e.g., Aldridge et al., 2016; Cohen, 2013; Ebbart & Luthar, 2021) and reports of bullying (Aldridge et al., 2018, 2020). Our findings suggest that developing a positive school climate could provide the protective factors needed to promote wellbeing and equip students to handle stressors and setbacks. Further, the negative relationships between the WHITS-P scales and students' reports of bullying, highlight the critical role that a positive school climate plays in preventing bullying (e.g., Cohen & Frieberg, 2013; Low & Van Ryzin, 2014; Wang et al., 2013a, 2013b).

Finally, we drew on a person-environment perspective to examine whether the degree of misfit reported by students was inversely related to their outcomes. Our findings indicate that when the actual–preferred discrepancies were smaller, student resilience and wellbeing were improved and reports of bullying reduced. These findings support Caplan's (1987) theory of person-environment fit and earlier studies that found outcomes were improved when environmental misfits were reduced (Fraser & Fisher, 1983a, 1983b; Moos, 1987). Further, it is worth noting that the correlation between students’ actual perceptions of teacher support and their outcomes was statistically non-significant, while the relationship between the actual–preferred discrepancy in student responses to teacher support and student outcomes (resilience, wellbeing and reductions in bullying) was statistically significant. This finding suggests that including information about actual and preferred experiences could provide a more nuanced understanding of students’ needs, which can be used to promote student outcomes more effectively when compared with relying on actual data alone.
Implications for schools

Given that traditional models used to guide interventions aimed at improving student outcomes often target change efforts at individual students, our findings provide important implications for schools seeking to improve outcomes across the entire school. Our findings draw attention to the interaction between students and their environment and to the interconnectedness between the context and the environment. Given the malleable nature of the school climate factors, these findings provide important implications to schools as outlined below.

Our finding, that students in different schools have different perceptions and preferences, support the premise that students are embedded within larger social systems and acknowledges that multiple levels of influence exist (Bronfenbrenner, 1979). These findings suggest that schools would benefit from examining the interconnections between students and larger social systems to determine how changes at different system levels can support their needs. This information could help educators to select and shape the school climate for person–environment matching (Moos, 1996).

Our results suggest that examining ways to reduce actual–preferred discrepancy could improve student outcomes. For example, one of our findings suggest that, when students perceived their teachers as friendly and caring as they would like them to be (e.g., the actual–preferred discrepancy was reduced), they were more resilient, had better wellbeing and experienced less bullying. Given that high-quality relationships are typically associated with positive student outcomes, it would make sense, in this case, for schools to consider ways to foster interpersonal rapport and relational trust between teachers and their students.

Our findings also support the usefulness of a socio-ecological approach to promoting student outcomes. Using a social-ecological approach recognises the social variables (e.g., teacher or peer support) and the multiple levels of influence on student development and behaviour. Although it may not be practical to influence all aspects of the environment, considering students as part of an ecosystem may help focus school improvement efforts. For example, students are influenced by the level of teacher support (beliefs about whether teachers value them) at both the microsystem and macrosystem levels. Teachers contribute to the school climate at the microsystem level (in the way they interact with individuals e.g., by being caring, friendly and dependable), at the mesosystem levels (e.g., through the way they interact, involve or engage parents in the educational process) and at the macrosystem level (e.g., through the norms and rules that guide student social behaviour and explicit messages and rules regarding interactions between peers (see, for example, Patrick et al., 2001). Although the benefits of using a social-ecological perspective to promote outcomes and address inequities have been widely reported in healthcare settings (see for example, Cramer & Kapusta, 2017; Baron et al., 2014; Golden et al., 2015; Goodwin et al., 2022), similar efforts appear to be limited in school improvement literature. However, our findings suggest that, given the importance of the school context, using a social-ecological approach to guide school improvement interventions could be beneficial.

Finally, for schools using actual–preferred discrepancies to guide improvement efforts it could be worth considering the results in light of Eccles and Midgley’s (1989) stage-environment fit perspective which suggests that, when the environment fit caters to students’ developmental needs, individual functioning is maximised (Midgley et al., 2014). Drawing on a stage-environment fit perspective could encourage educators to examine whether misfits could be addressed by making changes to ensure that the environment is suited to the students’s developmental needs. Such changes could support a range of adaptive changes,
such as personality development (Roberts & Robins, 2004) and increased motivation and academic performance (Eccles et al., 1991).

**Conclusion**

Recognition that the individual and the environment are not isolated entities but, rather, each shape and are shaped by the other supports possibilities of a schoolwide focus on improving the school climate and reducing actual–preferred differences to improve student outcomes.

However, despite the mounting research evidence supporting the critical role of school climate, as well as an increased demand for its measurement, schools are more likely to rely on achievement data or attendance rates to inform strategic decisions (Cohen et al., 2009). Our findings not only corroborate past research that suggests a focus on improving school climate will lead to improved outcomes, they also support the possibility of examining whether misfits occur, to guide decisions about school improvement efforts. We posit that future school improvement efforts would benefit from approaches that move away from a focus on individual-level solutions to ones that draw on a social-ecological perspective, ensuring a multi-level perspective that considers the school’s context, to improve school climate and reduce actual–preferred discrepancies.

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