

Article

The Silent Side of Schooling: Linking Students' Learning Experiences to Schools' Profiles

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Abstract

In transformative times, when education and how students learn are being reshaped, listening to students' voices is not only a diagnostic tool but also a compass. Given the importance of creating learning environments in which every student can and wants to learn, this study, grounded in Bronfenbrenner's ecological systems theory, analyses students' learning experiences and links them to schools' ecological profiles. It examines the school's effect and assesses how proximal classroom factors—teachers' support, assessment experience, and emotional discomfort—and distal school-wide factors—school climate and relationships with peers—shape students' self-reported learning experience. The study draws on survey data from 1012 students and uses ANOVA to identify differences among schools, alongside two separate SEM analyses to examine how proximal classroom-related and distal school-wide dimensions are associated with students' learning experience. The quantitative approach was complemented by a content analysis of the schools' evaluation reports to identify organizational attributes that may explain students' feelings. The findings suggest that schools may be structurally similar, but students experience them differently; students' learning experiences are more strongly shaped by assessment experiences and school climate. From an ecological perspective, the study identifies differentiated school profiles and offers guidance on designing interventions to improve well-being and promote students' identification with the school.

Keywords: well-being; ecological systems theory; students' feelings; learning experience; assessment experience; school climate; school effects; students' voice



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1. Introduction

Adolescence is a critical period for self-concept and identity development, characterized by significant shifts in self-attitudes and perceptions (Erikson, 1968; Waterman, 1982), coinciding with changes in the social and school environment (Jaworska & MacQueen, 2015). Adolescents navigate the challenges of self-identification, a stage of instability exacerbated by the fluctuating nature of self-concept during adolescence (DeMarree & Lodi-Smith, 2017) and marked by emotional reactivity (Jaworska & MacQueen, 2015). Previous research has demonstrated that adolescents in the high self-concept clarity group exhibit higher subjective well-being (Xiang et al., 2023) and greater meaning in life (Zhou et al., 2025). Hence, listening to students' voices involves conducting diagnostics to help schools respond to emerging needs, stay aware of fluctuating adolescent emotional states, foster belonging,

and create learning environments where every student can grow—academically, socially, and emotionally.

Bronfenbrenner’s Ecological Systems Theory (Bronfenbrenner, 1979) conceptualizes human development as the result of dynamic interactions among various interconnected nested layers that involve the family, peers, teachers, community resources, local policies, and cultural and societal contexts; moreover, these relations change over time in an individual’s social interactions and experiences that influence one’s development (Bronfenbrenner, 1979; Guy-Evans, 2025; Neal & Neal, 2013). The Ecological Systems Theory emphasizes that understanding how individuals learn depends on “the interplay between the characteristics of learners and the contexts they engage with, highlighting the intricate connections among these environments” (Tong & An, 2024, p. 2). In this view, meaningful experiences, including learning experiences, shape the child’s development and unfold through interactions across the five ecological systems. Learning experiences are associated with emotions that “emerge from conscious and/or unconscious judgments relating to perceived success” (Hopwood et al., 2025, p. 194), which are influenced by students’ feelings at school (Moeller et al., 2020). The relationship between schools’ organizational attributes and students’ feelings remains insufficiently explored. Then, further research should therefore examine how school-level conditions help explain students’ learning experiences and how schools can organize strategically to promote well-being and maximize students’ developmental potential. Addressing this gap is particularly relevant in Portugal, where students’ perspectives remain insufficiently integrated into understanding school organizational processes, contributing to the broader challenge of connecting school conditions with students’ learning experiences and well-being.

This study adopts an ecological perspective to examine the school’s influence on students’ learning experiences, focusing on relational dimensions with peers and teachers, school climate, assessment-related stress, and emotional discomfort. The study addresses the research questions: *How do school environments influence school experience? Which students’ school environmental factors—proximal and relational—influence their learning experience the most? Is the school a crucial element in it?*

To address these questions, the Exploratory Students’ School Experience Scale (ESSES), developed by Serra et al. (2025a) was used to assess the school’s influence and examine factors shaping Portuguese students’ learning experiences. The quantitative analysis was complemented by a qualitative analysis of the school’s environment based on external evaluation reports. Aligned with Tong and An (2024) emphasis on the role of cognitive and socioemotional characteristics in students’ development, this study provides a basis for targeted school actions and further research on learning experience, well-being, and developmental potential.

1.1. Conceptual Framework

“The quality of the school environment is associated with greater school involvement and academic success, and improved levels of well-being” (Guedes et al., 2023, p. 1382). Well-being and quality of life in children and adolescents are linked to their overall school experience. According to Oberle (2018), a more supportive school environment is associated with greater emotional well-being. Learners’ well-being is an emotional state influenced by factors both within and outside the classroom that shape their learning cycle and outcomes (Zheng, 2022). According to control-value theory, positive activating emotions, due to their positive effects on working memory, motivation, flexible thinking, and self-regulation, ultimately enhance students’ performance (Pekrun, 2024). Then, studying students’ learning experiences is challenging, given the multidimensional nature of students’ school lives, interactions, and developmental expectations and needs. Damásio (2020) defines emotions

as biologically regulated response patterns triggered by external or internal stimuli that involve both the body and the brain. In contrast, feelings are contextual interpretations of affective states (L. F. Barrett, 2017; Damásio, 2020). In this study, inspired by Ecological Systems Theory (Bronfenbrenner, 1979), emotions and feelings will be analyzed in two sets of factors: those within students' proximal learning space (the classroom) and those within their relational space (the school as a whole).

1.1.1. Statement of the Problem and the Study Model

Bronfenbrenner's ecological theory conceptualizes human development as resulting from the reciprocal relationship between the developing person and the multiple, interconnected contexts in which development occurs (Bronfenbrenner, 1979, 1995). These contexts are organized as nested ecological systems from the immediate microsystem to broader environmental structures. In its later biological formulation, particular importance is given to proximal processes, recurring reciprocal interactions between the developing person and the persons, objects, and symbols in the immediate environment as mechanisms of development (Bronfenbrenner, 1995; Guy-Evans, 2025). For students, school is a central developmental context in which interactions with teachers and peers, assessment experiences, and the broader relational climate shape their everyday experience. Accordingly, this study focuses on students' proximal experiences within the school, distinguishing classroom-related experiences from broader school-wide relational conditions (Figure 1). This distinction provides an ecological framework for examining how different dimensions of the school environment relate to students' learning experience.

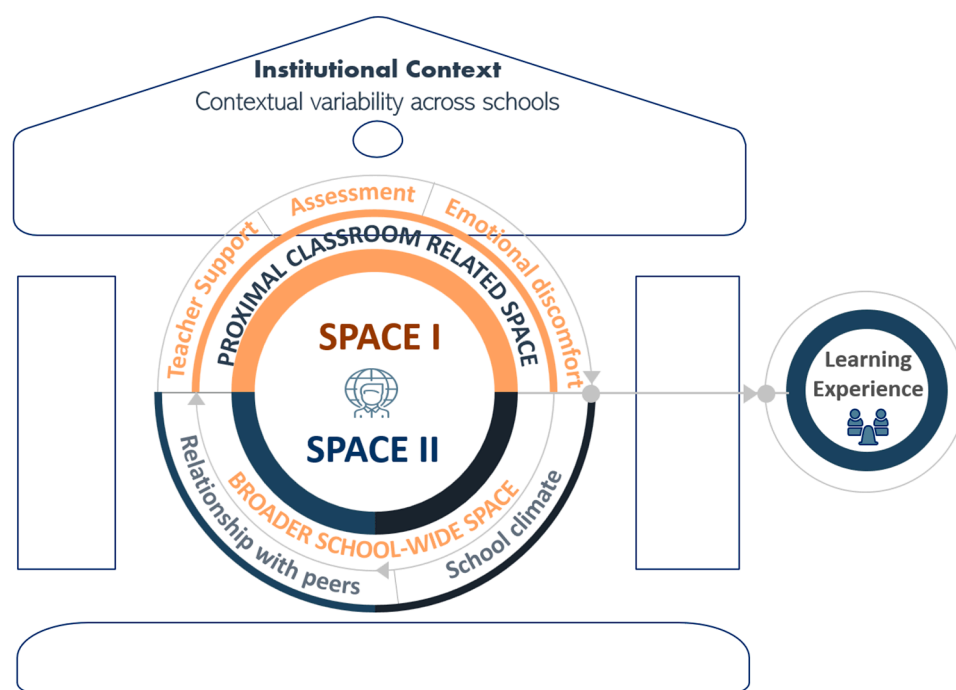


Figure 1. Study model.

Figure 1 illustrates an ecological conceptual model designed to study students' emotional and social experiences at school, grounded in Bronfenbrenner's ecological theory. Within the school microsystem, the model distinguishes two interconnected analytical spaces: a proximal classroom-related space and a broader school-wide space. These distinctions, focused on students' learning experiences, are mainly conceptual.

The proximal classroom-related space aims to capture students' emotional and cognitive experiences during daily learning activities. It includes intrapersonal dimensions such

as assessment experiences (feelings about assessment for learning and grading), emotional discomfort (anxiety and negative affect related to schooling), and teacher support (perceived care and help from teachers). These dimensions reflect how students interact with their closest school environment, including teachers, the teaching and learning process, and assessments. According to Aldridge and McChesney (2018), the school climate is synonymous with the school environment but distinct from the classroom-level climate. Then, the broader school-wide space refers to interpersonal and contextual dynamics that shape how students interact with others in the school. It considers the dimensions of relationships with peers, namely the quality of social bonds, sense of belonging, and cooperation, as well as school climate, perceived fairness, and the overall socio-emotional environment. These elements represent interconnected microsystems (student–peer–teacher–school) that shape students' experience of school as a social context.

The entire model is situated within the broader school institutional context, acknowledging that each school has distinct organizational, cultural, and pedagogical characteristics that may contribute to variability in students' experiences across schools. In this study, school membership is considered a source of naturally occurring contextual variability, as students attend different schools within their local educational contexts. Thus, while proximal classroom and broader school-wide spaces focused on understanding factors that explain differences among students within schools, the school effect accounts for differences between schools. Hence, the model assumes that emotional, relational, and contextual components together shape the quality of the student's learning experience.

From the model, we formulated the following hypotheses:

- H1.** *There is significant variance in students' learning experience attributable to differences between schools.*
- H2.** *Students' emotional and affective dimensions (assessment experiences, emotional discomfort, and teacher support) influence their overall learning experience.*
- H3.** *The quality of relationships with peers and the perceived school climate predict students' learning experience.*

1.1.2. Students' Proximal Learning Space

Personal and contextual assets are considered the foundation of emotional well-being in schools (Oberle, 2018). Reciprocally, the effects of schooling are partly shaped by the feelings students experience at school (Moeller et al., 2020). Acknowledging students' emotions and feelings and providing regulation and support are the basis for fostering more empathetic schools and teaching and learning dynamics. These dynamics characterize the students' proximal learning space, the classroom or the immediate learning environment, which is the primary factor impacting the students' learning experience.

Teachers, as part of the proximal space, influence students' learning experience. Teaching and learning are reciprocal processes in which students' perceptions of teachers' support and the assessment experience are crucial and influence their learning and fondness for the school (Serra et al., 2025b). The student–teacher relationship, including factors related to teaching, learning, and assessment, significantly influences academic success, including school attendance and dropout rates (Klein & Sosu, 2024). Supportive classrooms have been associated with higher well-being and academic achievement, as well as fewer behavioral problems among students (Wang et al., 2020). Teachers should acknowledge the importance of students' perspectives on the relationship and its impact on their work (Sointu et al., 2017) to inform and improve their pedagogical practices, strengthen relational connections,

and enhance students' learning experiences. Teachers also play a key role in creating a positive classroom environment where students can engage, learn, and make decisions safely (Oberle, 2018). Learning support emphasizes pedagogical practices that challenge traditional approaches, expand learning opportunities, foster connections between prior and current knowledge, offer quality feedback, enhance critical thinking, and communicate high academic expectations to students (Wang et al., 2020). Perceiving teachers' behavior as stimulating, supportive, and effective in classroom management is associated with a greater likelihood that pupils will experience positive emotions (Hascher et al., 2024).

For a positive teacher–student relationship to develop, there must be mutual understanding and appreciation for each other's efforts, commitment, respect, and care, along with a balanced power relationship (Ibrahim & El Zataari, 2020). In this regard, empathetic messages that convey a deeper understanding and appreciation of students' experiences, thoughts, and emotions are particularly important, as they help foster an atmosphere of trust, optimism, and support, thereby reducing students' fear of failure (Santana-Monagas et al., 2025). Additionally, positive teacher–student relationships can prevent student alienation, thereby increasing the likelihood of student engagement in school activities (Looker et al., 2023). This, in turn, encourages students to open up, listen to their teacher, and take intellectual risks, thereby motivating them to learn (Koca, 2016) and enriching their learning experience.

1.1.3. Students' Distal Contextual Space

Measuring an individual's emotions and feelings is not easy (Huang & Lajoie, 2023). But without assessing them, there is a risk of capturing only the external manifestations of well-being and missing the inner experience that drives engagement, motivation, and a sense of belonging (Jaworska & MacQueen, 2015). Studying students' relational space involves focusing on school-wide climate and peer relationships, which this study identified as the school-wide space. School climate and peer relationships are central to adolescent mental well-being (Hansen & Barene, 2025) because they influence students' emotional responses, which affect their learning and engagement (Dimitropoulou et al., 2025).

School climate is a shared experience of students, teachers, office staff, and parents concerning social, emotional, and academic factors (Podiya et al., 2025). From students' perspective, school climate encompasses social connectedness, relationships, school safety, and the academic environment, all of which are related to adolescents' mental health and well-being (Aldridge & McChesney, 2018). Podiya et al. (2025) consider a favorable school climate a protective factor that supports strong emotional health and high academic achievement. Conversely, the same authors define a hostile school environment as one that can precipitate emotional distress and academic failure among adolescents. Then, in this study, the school climate will be analyzed by capturing students' perceptions of the school-wide environment in terms of enjoyment, safety, respect, fairness, and pleasantness.

Studies have shown that high-quality peer attachments are strongly associated with better emotional well-being and fewer internalizing symptoms among adolescents (Therriault et al., 2024). Conversely, Liem and Martin (2011) stated that peer rejection or exclusion is one of the strongest predictors of emotional distress in adolescence. The same authors found that adolescents' perceptions of their relationships with same-sex and opposite-sex peers are positively related to both academic performance and self-esteem, with school engagement acting as a mediator. Then, positive relationships not only with peers, but also with teachers, including respect, connectedness, support, positive attitudes toward diversity, and an absence of bullying or victimization, are associated with increases in adolescents' psychosocial wellbeing (Aldridge & McChesney, 2018) and contribute to experiencing meaningful learning, self-efficacy, and engagement in school (Hansen & Barene,

2025). In the Portuguese context, peer relationships were identified as a significant aspect of adolescents' quality of life (Guedes et al., 2023) and as a predictor of the learning experience (Serra et al., 2025b). According to Castro et al. (2025), peer relationships have a stronger impact on students' social and emotional development than teacher–student relationships do. This line highlights the need for school-based interventions that, according to Hansen and Barene (2025), enhance peer integration and improve teacher–student relationships, thereby fostering inclusive learning environments. Therefore, school management must value pivotal contextual conditions arising from school-wide climate and peer relationships because promoting holistic student development is the school's core responsibility.

2. Materials and Methods

The study followed a quantitative, non-experimental, exploratory design with a comparative approach, complemented by content analysis of schools' evaluation reports.

2.1. Sampling Procedures and Data Collection

In accordance with ethical procedures, six school principals agreed to collaborate on a study of students' feelings, exercising their decision-making autonomy granted to school leadership under Portuguese legislation (Portugal, 2012, Decree-Law No. 137/2012). The study then used a convenience sample of six Portuguese schools, still following the principle of diversity. To protect anonymity and confidentiality, the schools were designated A to F. School C is a private vocational education and training (VET) school in central Portugal. The other five are public middle and high schools. School D is in a big city in the north of the country. Schools A and F are peripheral schools, the first in Oporto and the second in the Lisbon metropolitan area, characterized mainly by urban influence but still mixed with rural elements. Schools B and E are in two small northern villages with areas of 8 km² and 12 km², respectively. Schools A, D, E, and F are middle and high schools, and B is a middle school. Each school administered the online questionnaire in May 2025, yielding 1012 valid responses. The respondents were students in grades 5 to 12, aged 9 to 20 years ($\mu = 14.18$; $SD = 2.249$), and their free and voluntary participation, as well as that of their tutors, was obtained.

The survey used a closed six-factor questionnaire, the ESSES, developed by Serra et al. (2025a). This scale assesses the students' feelings through a five-point scale (1, meaning the highest level of disagreement, to 5, representing the highest level of agreement) with the following factors: learning experience (four-item factor; $\alpha = 0.817$); feelings about the assessment experience (five-item factor; $\alpha = 0.857$); feelings about teacher support (four-item factor; $\alpha = 0.885$); feelings about school climate (six-item factor; $\alpha = 0.889$); feelings about the relationship with peers (four-item factor; $\alpha = 0.882$); feelings about emotional discomfort (three-item factor; $\alpha = 0.627$). Then, the five factors showed good internal reliability, and the last factor's reliability was conditioned by its low number of items, but still without harming the model fit [$\chi^2(278) = 596.278$, $p < 0.001$; CFI = 0.925; TLI = 0.913; RMSEA = 0.062; SRMR = 0.092] (Serra et al., 2025a).

2.2. Hypothesis Test

The study was conducted using IBM SPSS Statistics 27.0.1.0 and IBM SPSS AMOS 26.0. The statistical analysis examined variability in students' experiences across schools and associations between their learning experience and dimensions of proximal classroom-related and broader school-wide spaces, in accordance with the conceptual model (Figure 1). For validity purposes, the survey data were assessed for construct's internal reliability and inter-item correlations to determine whether they consistently contribute to the construct under study.

2.2.1. Analysis of Differences Across Schools

To assess differences in students' feelings across schools, the study used ANOVA. Given the robust sample size of 1012 respondents and the Central Limit Theorem, parametric methods such as ANOVA provide reliable results even when the data are not perfectly normal (Lumley et al., 2002). Homogeneity of variances was assessed using Levene's test. Variables meeting this assumption were analyzed using one-way ANOVA, whereas variables violating the assumption were analyzed using Welch's ANOVA. Partial eta-squared was used to assess the effect sizes of the variables in the ANOVA. After a significant ANOVA, we used a post hoc multiple-comparison procedure to evaluate pairwise comparisons and contrasts among school means. When equal variances were assumed, we used Scheffé's procedure; otherwise, we used the Games–Howell test. Additionally, we generated plots of estimated marginal means for students' feelings to facilitate comparisons between schools. Marginal means are unbalanced due to differences in group size.

We examined differences in the schools' contextual characteristics using data on the school environment documented in external evaluation reports prepared by IGEC (General Inspection of Education and Science) and EQAVET (European Quality Assurance Reference Framework for Vocational Education and Training). The content analysis considered the following a priori categories: school climate, student assessment, peer interaction, teacher support, student involvement, and learning experience. Those six categories align with the ESSES used to assess students' feelings.

The reports were initially coded by one researcher, and the resulting coding and categorization were reviewed by one additional researcher. The researchers resolved disagreements through discussion and consensus. The content analysis was used for contextual characterization and triangulation, and not to infer the prevailing categories. We defined the schools' profiles by integrating qualitative coding with quantitative school patterns self-reported by students.

2.2.2. Analysis of Associations Regarding Students' Proximal and Distal Space

To analyze the associations between students' proximal and distal space and their learning experience, we first conducted a confirmatory factor analysis (CFA) to assess construct validity and model-data fit. Model adequacy was evaluated using Chi-Square, Incremental Fit Index (IFI), Tucker–Lewis Index (TLI), Comparative Fit Index (CFI), and Root Mean Square Error of Approximation (RMSEA) (Hooper et al., 2008). We ensured that the model retained its conceptual integrity by making theoretically guided adjustments to improve fit. Convergent validity was established by significant standardized factor loadings (>0.50), average variance extracted (AVE) values > 0.05 , and composite reliability values > 0.70 . Then, to test hypotheses H2 and H3, we used SEM with maximum likelihood estimation. With respect to the study model (Figure 1), two separate SEMs were developed. The first examined associations between students' learning experience and dimensions of the proximal classroom-related space, emphasizing cognitive, pedagogical, and emotional experiences. The model included teacher support, assessment experience, and emotional discomfort. Second, focusing on the broader school-wide space, the SEM examined how students' learning experience relates to two socioemotional dimensions: relationship with peers and school climate. This approach provided insight into the role of broader school conditions in students' learning experience.

3. Results

Although the ESSES had previously been validated by its developers, we reassessed its internal consistency in the present sample of Portuguese students and examined inter-item correlations to assess its consistency with the construct. Feelings about the learning

experience registered a Cronbach's α of 0.823 and inter-item correlations ranging from 0.442 to 0.636. Feelings about the learning experience showed a Cronbach's α of 0.859 and inter-item correlations ranging from 0.448 to 0.644. The third construct, feelings about teacher support, had an α of 0.879 and inter-item correlations ranging from 0.580 to 0.715. Feelings about the school climate had an α value of 0.897, and inter-item correlations ranged from 0.502 to 0.697. Feelings about peer relationships had a Cronbach's α of 0.823, with inter-item correlations ranging from 0.350 to 0.709. These five constructs showed good reliability, and inter-item correlations ranging from 0.30 to 0.80 suggest the items are appropriately related. The construct feelings about emotional discomfort showed a questionable Cronbach's α of 0.632 and inter-item correlations ranging from 0.239 to 0.487, which are slightly low and may be explained by the small number of items (Watkins, 2018). This item requires cautious interpretation; however, given its theoretical importance, it was included in the study.

3.1. Differences Across Schools

To examine H1, which hypothesized that students' learning experiences differ between schools, we conducted an ANOVA. Table 1 presents, per school, descriptive statistics for the respondents and the latent variables associated with students' feelings.

Table 1. Survey respondents' characterization per school and respective feelings.

	School A	School B	School C	School D	School E	School F
N	245	275	56	73	219	144
Female * (%)	40.8	40.0	17.9	69.9%	55.7	65.3
Male * (%)	55.5	56.0	73.2	26.1%	43.8	33.3
Age: $\mu \pm SD$ (minimum–maximum)	14.8 $\pm$ 2.03 (10–20)	12.6 $\pm$ 1.60 (9–18)	16.6 $\pm$ 1.27 (13–20)	15.6 $\pm$ 0.67 (15–18)	12.8 $\pm$ 1.41 (10–17)	16.2 $\pm$ 1.97 (10–19)
μ						
Feelings about the learning experience	3.18	3.48	3.31	3.13	3.62	3.23
Feelings about the assessment experience	3.43	3.50	3.46	3.20	3.84	3.21
Feelings about the teacher's support	3.41	3.58	3.29	3.61	3.85	3.59
Feelings about the school climate	3.09	3.14	3.12	3.56	3.81	3.38
Feelings about peers' relationships	3.85	3.78	3.61	4.06	4.15	3.81
Feelings about emotional discomfort	2.97	2.81	2.58	3.36	3.11	3.22

* Regarding gender, some respondents preferred not to declare their gender.

The number of participants per school ranged from 56 to 275, justifying that group comparisons were based on estimated marginal means. Students' mean ages per school ranged from 12.61 $\pm$ 1.60 to 16.6 $\pm$ 1.27, and the gender distribution was more asymmetric in schools C, D, and F.

Students from school E showed a more favorable perception of the overall school experience, ranging from 3.62 for feelings about their learning experience to 4.15 for feelings about relationships with peers. This good perception contrasts with the other dimensions studied, which tend to be more neutral. Feelings about the learning experience and the school climate had the lowest scores, while feelings about relationships with peers showed the strongest perception across all schools.

Regarding emotional discomfort, the values range from 2.58 to 3.36, indicating some impact in all school contexts. The lowest value of emotional discomfort is observed in a VET school, perhaps because the nature of the teaching and learning process—practical and oriented toward learning a profession, less competitive concerning grades, access to the university, and the absence of national exams—might produce a more favorable perception. Another explanation considers gender distribution, even though it is situationally influenced, as females tend to be more affected by distress, anxiety, and depression

(Moeller et al., 2020), as well as emotional discomfort in this specific context (Serra et al., 2025b). In fact, school C ($\mu = 2.58$) had 17.9% female students, compared with schools D ($\mu = 3.36$) and F ($\mu = 3.22$), which had higher levels of emotional discomfort and i were more representative of girls: 69.9% and 65.3%, respectively.

All schools reported moderately positive feelings about their assessment experience (μ ranging from 3.20 to 3.84) and about the support they received from teachers (μ ranging from 3.29 to 3.85). The results suggest variation across schools and room for improvement in more consistent, perceived-impactful formative assessment and support practices. For both variables, school C had the most positive responses, with students reporting greater support ($\mu = 3.85$) and better assessment experiences ($\mu = 3.84$). For assessment experience, schools D ($\mu = 3.20$) and F ($\mu = 3.21$) had the lowest values, which parallels higher emotional discomfort ($\mu = 3.66$ and 3.22 , respectively). Students at the VET school reported the lowest level of teacher support ($\mu = 3.29$). Although the differences across schools were not large, some variation was present, and ANOVA can help explain it.

3.1.1. ANOVA's Assumptions

ANOVA requires that the data residuals be normally distributed. Normality was assessed by inspection of residuals' Q-Q plots for every construct. The plots revealed slight deviations from normality, which are expected with large sample sizes ($N = 1012$) and are unlikely to affect the robustness of the analysis (Blanca et al., 2017). Given that the ANOVA assumptions were sufficiently met, the test was used to assess differences across schools. The assumption of homogeneity of variances in ANOVA was assessed for all constructs through Levene's Test. Emotional discomfort did not violate homogeneity, but the remaining five constructs showed a significant ANOVA F -test (all $p < 0.05$), indicating unequal variances and a violation of the homogeneity assumption. Because unequal variance combined with unequal group sizes can affect the standard ANOVA F -test, the approach used Welch's ANOVA.

3.1.2. ANOVA's Interpretation

Table 2 reveals significant statistical differences across schools for all dimensions examined ($p < 0.001$). According to the adopted benchmarks for partial eta squared ($\eta^2p = 0.01$, 0.06 , and 0.14 for small, medium, and large effects, respectively), small effects were observed for the learning experience [Welch's $F(5, 287.60) = 9.19$, $\eta^2p = 0.044$], assessment experience [Welch's $F(5, 285.58) = 12.93$, $\eta^2p = 0.057$], teacher support [Welch's $F(5, 288.28) = 6.27$, $\eta^2p = 0.031$], relationship with peers [Welch's $F(5, 286.62) = 7.75.80$, $\eta^2p = 0.033$], and emotional discomfort [$F(5, 1006) = 7.39$, $\eta^2p = 0.035$]. For school climate [Welch's $F(5, 290.72) = 20.44$, $\eta^2p = 0.085$], we observed a moderate-sized effect. Thus, school membership accounted for approximately 3.1% to 8.5% of the variance across the dimensions examined, with the largest between-school differentiation observed for school climate.

The cross-analyses of ANOVA post-hoc comparisons (Table 2) and the graphs of the constructs' estimated marginal means (Figure 2) show that, overall, school E is distinguished by its positivity regarding students' feelings. Regarding the learning experience, school E differs significantly from A, D, and F, which had lower perceived levels among their students. Concerning the assessment experience, the same happened with schools A, B, D, and F; teacher support with schools A, B, and C; school climate with A, B, C, and F; and relationship with peers with schools A, C, and F. Schools A and C showed lower perceptions of students' feelings across all constructs, except for emotional discomfort in school C, which showed the highest appreciation. In sum, schools A, B, and C showed limited differentiation, with generally moderate perceptions and no dominant strengths. School D's students reported low appreciation for learning and assessment experiences

and the highest levels of emotional discomfort, suggesting a more performance-oriented culture. The pattern observed in school F suggests that high emotional discomfort is not associated with weak relational conditions, as peer relationships and school climate remained relatively positive. Instead, it points to a misalignment between these relational dimensions and core pedagogical processes. Although school E showed highly positive evaluations of the learning experience, assessment, and school climate, it exhibited the second-highest level of emotional discomfort, suggesting a highly demanding learning environment in which strong pedagogical conditions are accompanied by increased academic pressure.

Table 2. ANOVA results of the differences between schools regarding students' feelings.

	R^2 (Adjusted R^2)	F	Square Partial Eta	Significant Post-Hoc Test	
				Mean Differences	Test
Feelings about the learning experience	0.044 (0.039)	9.188 *** (a) $W = 9.212$ ($df = 287.60$)	0.044	$A - B = -0.2960$	0.079 **
				$A - E = -0.4447$	0.079 ***
				$B - D = 0.3410$	0.114 *
				$B - F = 0.2489$	0.08 *
				$D - E = -0.4897$	0.114 ***
				$E - F = 0.3976$	0.080 ***
Feelings about the assessment experience	0.057 (0.052)	12,157 *** (a) $W = 12.929$ ($df = 285.58$)	0.057	$A - E = -0.4109$	0.079 ***
				$B - E = -0.3451$	0.071 ***
				$B - F = 0.2835$	0.084 *
				$D - E = -0.6384$	0.125 ***
				$E - F = 0.6286$	0.086 ***
Feelings about teacher support	0.031 (0.026)	6.491 *** (a) $W = 6.269$ ($df = 288.28$)	0.031	$A - E = -0.4421$	0.088 ***
				$B - E = -0.2718$	0.079 **
				$C - E = -0.5803$	0.834 *
Feelings about the school climate	0.085 (0.080)	18.666 *** (a) $W = 20.440$ ($df = 290.72$)	0.085	$A - D = -0.4616$	0.118 **
				$A - E = -0.7150$	0.089 ***
				$A - F = -0.2853$	0.096 *
				$B - D = -0.4196$	0.112 **
				$B - E = -0.6731$	0.080 ***
				$C - E = -0.6862$	0.164 ***
				$E - F = 0.4297$	0.090 ***
Feelings about the relationship with peers	0.033 (0.028)	6.799 *** (a) $W = 7.753$ ($df = 286.62$)	0.033	$A - E = -0.2989$	0.080 **
				$B - C = -0.3693$	0.071 ***
				$C - E = -0.5458$	0.168 *
				$E - F = 0.3439$	0.085 ***
Feelings about emotional discomfort	0.035 (0.031)	7.389 ***	0.035	$B - D = -0.5440$	0.134 **
				$B - F = -0.4032$	0.105 *
				$C - D = -0.7788$	0.181 **
				$C - E = -0.5322$	0.153 *
				$C - F = -0.6379$	0.161 **

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; W —Welch; (a) homogeneity violated.

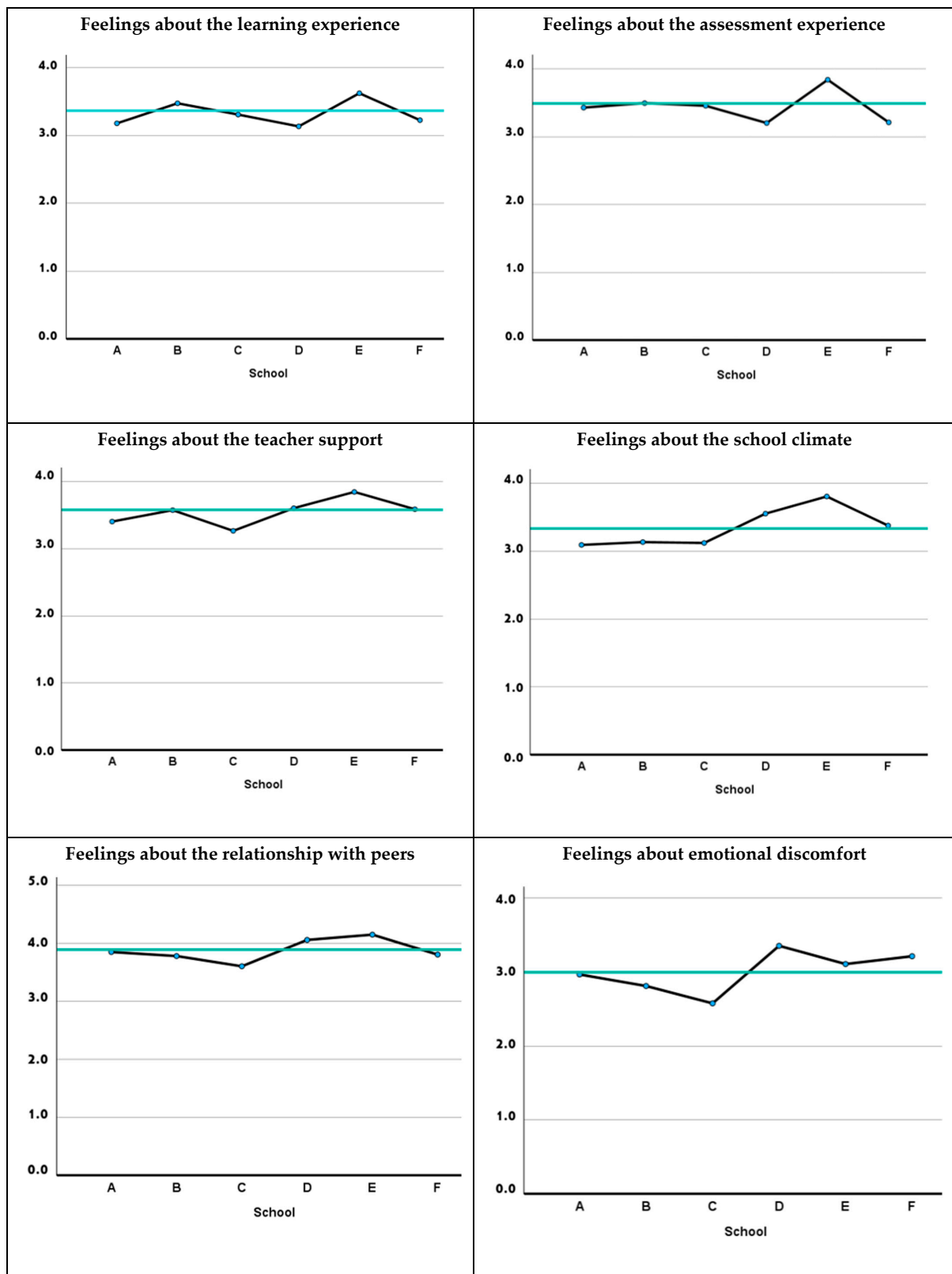


Figure 2. Graphs of the estimated marginal means for students' feelings.

3.2. Content Analysis of External Evaluation Reports

The school institutional context and the variability across schools must be considered to assess how internal characteristics may explain variance in students' feelings. We then

conducted a content analysis of the schools' external evaluation reports using six categories aligned with the survey's purpose. Table 3 characterizes the schools.

Table 3. Content analysis of the external evaluation of the schools.

	School	Descriptor
School Climate	A	"peaceful and well-being climate, conducive to learning and respect for the rules of coexistence"; "students like school"; "situations of indiscipline are reduced."
	B	"good school environment"; "social mediators promote students' discipline, responsibility, and citizenship"
	C	"quality-oriented organizational environment"; "good relationship in the school community"
	D	"quality educational environment, welcoming, safe, healthy, and ecological"
	E	"collaborative, empathetic, supportive, pleasant, safe, socially welcoming and inclusive educational environment"; "general feeling of well-being promotes the absence of conflicts"; "ombudsman teacher manages the residual disciplinary incidents, maintaining a climate of trust and security"
	F	"favorable educational environment"; "good integration of students"; "safe climate with clear rules of coexistence"; "no serious disciplinary problems"
Students' Assessment	A	"effective regulatory measures at the level of evaluation for learning have not yet been identified."
	B	"use of diversified techniques, instruments and procedures for collecting information"; "formative assessment is not yet integrated into the management of the curriculum, as an eminently pedagogical process, incorporated into the daily routine of the classroom"
	C	Intention to "make the student responsible throughout the evaluation process, creating regular processes of self/hetero-assessment"; "adequate feedback"
	D	Need for: "assessment practices, articulated with curricula", "deepen the articulation between teaching, learning, and assessment", and "students to take an active role in regulating their learning"
	E	"diversification of assessment practices and instruments"; "information to students, about the need to regulate their learning"; "self/hetero-assessment practices are aligned with the formative purpose"
	F	"existence of diversified assessment practices"
Interaction With Peers	A	"students reveal appropriate behaviors, guided by mutual respect"; "educational environment favors positive interpersonal relationships"
	B	"climate of respect among students"; "interpersonal relationships cordially take place"; "students show cooperative behaviors in a school context"
	C	"good relationship between students"; "group spirit"
	D	"students demonstrate behaviors of respect and adequate coexistence"; "school environment is conducive to positive relationships"; "integration of students in the dynamics of the school"
	E	"students maintain adequate relationships with each other"; "school environment is marked by harmonious coexistence"; "no relevant problems in terms of the relationship between students"
	F	"good relationship between students"; "environment of interpersonal respect"
Teachers' Support	A	"commitment and dedication of teachers"; "students highlight the understanding and openness of teachers to their interests and problems"; "teachers are committed to the systematic search for the adequacy of their educational practices to the students' needs and expectations"
	B	"teaching, learning, and assessment strategies aim for students' success and equity"
	C	"teachers available to support students"; intention to: "create a tutoring system as a response to the students' specific needs", "create support mechanisms for students who wish to continue their studies", and "to speed up the early signaling of students with cognitive and/or behavioral difficulties"
	D	"inclusion and equal opportunities in access to the curriculum are intentionally worked on"; "multilevel approach, measures to support learning and inclusion"
	E	"remodeling of the learning support center, becoming dynamic and strategic in the pedagogical work"
	F	"teachers involved in monitoring students"; "existence of educational support and pedagogical differentiation"; "concern for students' success"

Table 3. *Cont.*

	School	Descriptor
Students' Involvement	A	"students participate in the discussion of the educational project and in the programming of activities, being regularly consulted on the issues that concern them"
	B	"participation in cultural, ecological, and sports projects and activities"; "participation in decision-making processes is limited regarding the learning options and the definition of the code of conduct"
	C	"encouragement of the participation of the Students' Association in the mediation between students and the schools' management bodies"; "active participation"; "involvement in projects"
	D	"students are involved in the life of the school, in curricular activities and in projects with repercussions on reduction of disciplinary measures"; "students actively participate in internal bodies and structures and in various activities, on their own initiative or proposed by the school and partners"
	E	"students are actively involved in the life of the school, through the assemblies, representation on councils, involvement in the participatory budget, clubs, solidarity activities, etc."
	F	"valuing participation of students in school projects and activities"; "involvement in school initiatives"
Learning Experience	A	"priority given to pedagogical innovation, a process that is at the beginning"; "promotion of a large number of projects and activities of curricular complement, in partnership with local institutions"
	B	"need to define an integrated strategy that favors pedagogical innovation practices, active methodologies that stimulate greater student motivation"; "flexibility and personalization of the curriculum is residual"; "pedagogical practices show some heterogeneity, ranging from predominantly transmissive, teacher-centered models to more active approaches that promote greater student participation"; "use of digital tools occurs sporadically"
	C	"education aligned with the labor market"; "skills relevant to the labor market"; "practical and motivating teaching"; "relevant training"; "investment in project-based learning and more active methodologies is at the beginning"
	D	"flexible curriculum management and integration of different disciplines' knowledge, facilitate the use of active and personalized learning methodologies"; "classroom environment conducive to active learning"; "participation of students in projects, stimulating collaboration, belonging, critical spirit"; "no mechanisms for teaching monitoring and experimentation supported by joint reflection"
	E	"curricular integration of cultural, scientific, artistic and sports activities promoted by national and international projects"; "active involvement of students in the peer mentoring program"; "effective pedagogical differentiation and active involvement of students in the pedagogical process and teamwork"; "climate of respect and collaboration in the classroom, which reinforces cooperative learning, research skills, reflection, and critical mobilization of information"; "inclusion is embodied in the implementation of measures to support learning, mostly in the classroom context"
	F	"practices that promote meaningful learning"; "diversity of pedagogical activities"; "diversification of teaching methodologies"; "curricular articulation between teachers"; "differentiation practices"

In general, the schools presented a favorable climate: pleasant, safe, and free of significant disciplinary issues. Similarly, peer relationships are positive and support collaboration. Schools involve students in diverse activities and nurture their participation, even though there is margin for improvement, especially in school B. Regarding teachers' support, the data reveal two school profiles: one more organizational (schools C, D, and E), which defined structured support actions, and another relational one (schools A and F), focused on teachers' pedagogical proximity. School B follows an intermediate pattern, combining supportive conditions with less consolidated structures and practices.

The schools showed formative assessment practices that are still being consolidated (schools A, B, C, and D), with weaknesses in integrating formative assessment (schools A and B), in contrast to contexts where structured processes of self- and hetero-assessment and feedback are promoted at school E. Formative assessment is recognized for its diversity of practices in schools E and F. In terms of learning, there is a predominant trend towards more active methodologies and projects, although implementation is heterogeneous and uneven (school B). Schools D and E stood out as positive deviations, with greater curricular integration, student participation, and collaborative learning, while B showed greater remoteness, with

weaknesses in these areas. Schools C, D, E, and F showed active, diversified curriculum development, and school A is beginning to anchor innovation in teaching and learning.

3.3. Proximal and Distal School Spaces

SEM was used to examine the associations between students' learning experience and dimensions of the proximal and distal school spaces. The CFA was performed to achieve a good model fit with the sample data (Wymer & Alves, 2012). The results are in Table 4. Regarding the association between the students' proximal space and their feelings about their learning experience, CFA revealed an acceptable model fit for the data [$\chi^2(95) = 424.320$, $p = 0.006$; CFI = 0.959; TLI = 0.948; PCMIN/ $df = 4.467$; RMSEA = 0.059] (Hooper et al., 2008). For the second model, which examined the effect of distal space on students' learning experience, the model also showed an acceptable fit [$\chi^2(62) = 319.857$, $p = 0.000$; CFI = 0.967, PCMIN/ $df = 5.157$; RMSEA = 0.064]. The relative chi-square index, which is slightly above the 5.0 threshold, suggested that sample size may be influencing the results, given its oversensitivity to large samples (P. Barrett, 2007). However, the excellent TLI and CFI indices, both above 0.95, supported examining the hypothesized associations with students' feelings. The results of the models are presented in Figures 3 and 4.

Table 4. Model fit results and estimates.

	CMIN	PCMIN/DF	CFI	TLI	RMSEA	PCLOSE	SRMR
Model 1. Proximal space	424.320	4.467	0.959	0.948	0.059	0.006	0.083
Model 2. Distal space	319.857	5.159	0.967	0.952	0.064	0.000	0.051

		Standardized Estimate	Standard Error	Composite Reliability	<i>p</i> Label
Model 1. Proximal space	II $\rightarrow$ I	0.523	0.052	10.141	<0.001
	III $\rightarrow$ I	0.164	0.048	3.427	<0.001
	VI $\rightarrow$ I	0.051	0.025	2.050	0.040
Model 2. Distal space	IV $\rightarrow$ I	0.588	0.043	13.579	<0.001
	V $\rightarrow$ I	0.078	0.026	3.041	0.002

I—learning experience; II—assessment experience; III—teacher support; IV—school climate; V—relation with peers; VI—emotional discomfort.

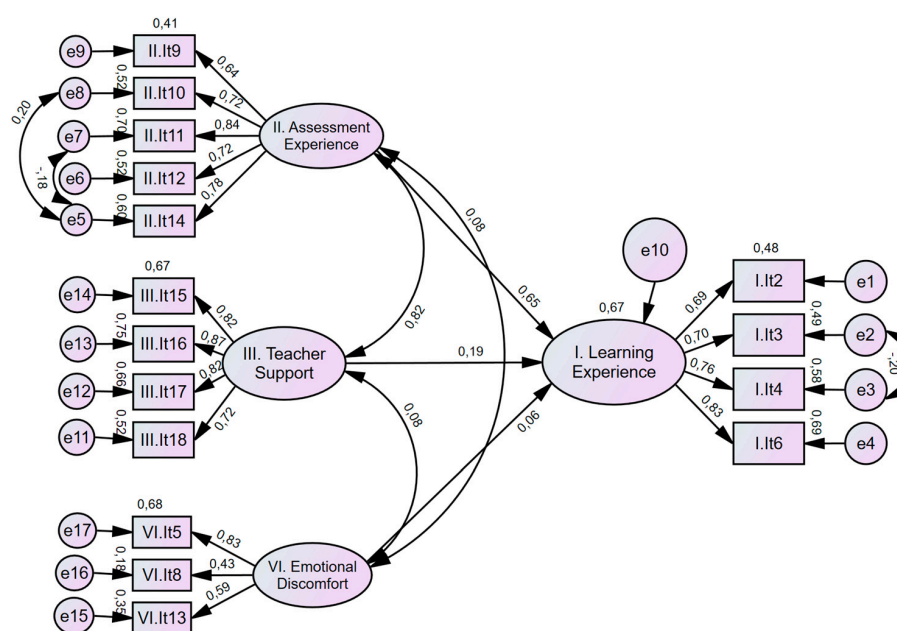


Figure 3. SEM on the role of proximal space in students' learning experience.

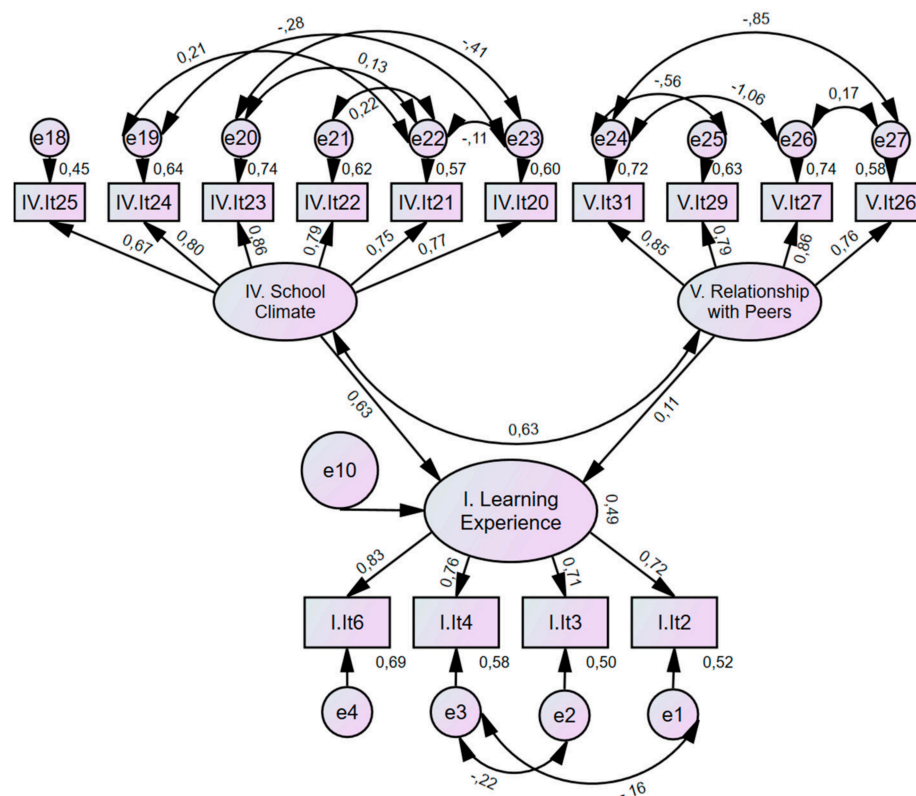


Figure 4. SEM on the role of the distal space in the students' learning experience.

3.3.1. Proximal Space

Regarding the role of proximal space on the students' learning experience (Table 4, Figure 3), there were statistically significant positive associations with the assessment experience ($\beta = 0.523$; $p < 0.001$), teacher support ($\beta = 0.164$; $p < 0.001$), and emotional discomfort ($\beta = 0.051$; $p = 0.04$). The standardized path coefficients (Figure 3) indicated a statistically significant, strong association between assessment experience and students' learning experience (0.65), but a small association with teacher support (0.19) and emotional discomfort (0.06).

3.3.2. Distal Space

Regarding the role of distal space in students' learning experience (Table 4, Figure 4), we observed statistically significant positive associations with school climate ($\beta = 0.588$; $p < 0.001$) and relationships with peers ($\beta = 0.078$; $p = 0.002$). The standardized path coefficients indicated statistically significant regression weights of 0.63 for school climate and 0.11 for relationships with peers, representing strong and negligible associations with students' learning experience, respectively.

4. Discussion

This study aimed to disentangle how proximal classroom-related space and broader school-wide space dimensions shaped students' learning experience, while also assessing the extent to which differences between schools contribute to those feelings. The findings indicated that students' learning experiences were strongly shaped by both proximal classroom processes and distal school-wide characteristics, with assessment experience and school climate emerging as stronger predictors across the integrated model. Other dimensions, such as teacher support, emotional discomfort, and the school context, played a more limited direct role.

4.1. Interpretation of Differences Across Schools

What students feel at school, along with a range of psychological factors, influences academic success and impacts youth development (Moeller et al., 2020; Pekrun, 2024). Izaguirre et al. (2023) found that school climate and life satisfaction directly affect perceived academic performance, whereas emotional intelligence and resilience affect it indirectly through life satisfaction. Positive or negative feelings about school affect students' attention, concentration, engagement, and persistence in learning activities (Koca, 2016), as well as their overall well-being and their quality of life (Guedes et al., 2023). Then, students' feelings about school should be interpreted through the articulation between schools' organizational patterns and their ecological configurations—the lens explored in the present study.

4.1.1. Institutional Ecosystem and Students' School Experience

For the six schools studied, results suggest that, in line with the organizational similarities observed across schools regarding a safe and favorable climate, positive relationships with peers, and involvement (as evidenced in schools' external evaluation reports), students' experiences were not strongly differentiated at the institutional level. Although school E is overall recognized for a more positive approach to teaching and learning, this is reflected in a structured apparatus for supporting students, a richer, more active, and more diverse curriculum, and consolidated formative assessment. In line with this, the school stood out positively in students' self-reported feelings. According to Op't Eynde and Turner (2006), "an important goal of education is that students enjoy learning and feel positive (and safe) at school"—which was the case of School E—where "the affective (heart) and the cognitive (head) dimensions of learning" (p. 373–374) appear articulated to provide students with knowledge and skills. Neuroscientific research has demonstrated that emotions and cognition are grounded in interdependent neural processes, highlighting the fundamental role of emotions in learning (L. Li et al., 2020; Prokofieva et al., 2019). Our results suggest that schools with higher demand (A, B, C, D, and F) may find it more challenging to understand and integrate the relational, emotional, social, and cognitive dimensions of students' lives.

4.1.2. Ecological School Profiles

Nevertheless, the results on school-context variability supported hypothesis 1, although the magnitude of the between-school differences was generally small. In fact, we identified statistically significant differences across schools in learning experience, assessment experience, teacher support, peer relationships, and emotional discomfort, with small effect sizes ($\eta^2p = 0.031$ – 0.057).

School climate showed a moderate magnitude, accounting for 8.5% of the variance in students' feelings attributable to differences between schools. Consistent with the qualitative content analysis of the school's evaluation reports, the post hoc tests also indicated school E's singularity relative to others, with more positive student perceptions of the school. However, school E posits an ambivalent pattern in which highly positive evaluations of learning experience, assessment, and school climate coexisted with higher levels of emotional discomfort. This suggests a high-demand learning environment in which strong pedagogical and organizational conditions are accompanied by heightened academic pressure. In such contexts, assessment practices (while perceived as effective) may also contribute to anxiety, particularly in relation to tests and performance expectations (Camacho-Morles et al., 2021). This highlights the dual role of high-quality learning environments, which can promote achievement while also generating emotional strain.

Departing from Bronfenbrenner's ecological theory, which posits that an individual's development is shaped by interconnected environmental systems, with the microsystem

as the most influential level (Guy-Evans, 2025), we can view schools as configurations of interacting conditions rather than isolated variables. Then, from the perspective of ecological thinking inspired by Bronfenbrenner (1979), we can classify school E's profile as a pedagogically enriched, performance-oriented ecological system. In contrast, school F reflected a misaligned profile, in which relatively moderate relational conditions coexist with weaker assessment experiences and greater discomfort, appearing as a disrupted learning ecology. School D presented a structured but uneven configuration, with strong support and climate but less favorable perceptions of learning and assessment, framing a relationally strong, instructionally weak ecology. Finally, schools A, B, and C represented moderate baseline profiles, with limited differentiation and no marked strengths, although school B appeared slightly more favorable within this group, representing a normative, undifferentiated ecology.

4.1.3. Synthesis: The School as a Supportive Ecological System

In sum, our findings suggest that the school must serve as a solid supportive environment for students, meaning, according to Bronfenbrenner's Ecological Theory, a stable ecological system (Bronfenbrenner, 1979). For Yang and Oh (2024), school is a fundamental level within students' microsystems that influences their development. Linking positive learning experiences to a purposeful approach to organizing and pedagogical orientation can affect students' well-being and feelings about school. In this line, "educational experiences are complicated by emotional learning's effects on students' behavior and significantly contribute to shaping students' academic and psychological outcomes" (Younas et al., 2025, p. 13), but our study suggests that the school environment adds further complexity to the overall educational experience.

4.2. Students' Proximal Space

At the microsystem level, this study assessed students' proximal space by examining how their feelings about teachers' support, assessment experiences, and emotional discomfort influenced their self-reported perceptions of learning. The results regarding the students' immediate learning environment provided limited support for hypothesis 2. Although several studies document that teacher–student supportive relationships within an overall supportive school environment can improve students' development (Koca, 2016; Podiya et al., 2025; Yang & Oh, 2024), we found a small association between teachers' support and the learning experience ($\beta = 0.19$). This small influence may reflect a normative effect, as students may perceive teacher support as expected or standard practice and normalize it. This analysis is supported by the qualitative analysis of school evaluation reports, which document teachers' good practices in supporting inclusion. The literature also documents positive associations between teacher support and students' experiences and emotions at school (Hascher et al., 2024), making the teacher–student relationship crucial for engagement in school activities (Looker et al., 2023).

4.2.1. Teacher Support and Assessment Experience

Podiya et al. (2025) noted the importance of teachers in fostering a supportive environment and providing academic support, which can reduce stress and depression. However, in this study, students underreported teachers' support because they perceived it as less salient than the assessment experience, which was strongly associated with the learning experience ($\beta = 0.65$). Students seem to anchor their experience in grades, feedback for learning, and evaluation moments. So, teacher support and emotional discomfort seem to lose explanatory power in SEM for the assessment experience. The emotional charge surrounding assessment is a globally important factor (Camacho-Morles et al., 2021) even in schools where good assessment-for-learning practices were recognized, as in school E,

with a mean value of 3.84, higher than those of the other five schools. This does not mean that teachers' support is unimportant for students; it is just less variable and more indirect in shaping students' learning experiences. Students perceive teacher support as the normal, expected professional interaction between teacher and student, with mean values above neutral (ranging from 3.29 at school C to 3.85 at school E). On the other hand, assessments are often regarded by students as personally high-stakes (McDiarmid, 2023), contributing to emotional discomfort (Camacho-Morles et al., 2021; Cefai et al., 2021) and shaping their overall learning experience. Assessment experience, alongside the learning experience and teacher support, was identified as critical in influencing learning (Serra et al., 2025b).

4.2.2. Emotional Discomfort and Students' Learning Experience

The frequency of negative feelings, such as anxiety and depression, is appearing as a global problem among adolescents (Cefai et al., 2021; Moeller et al., 2020), making it a target in assuring students' well-being. In this study, average emotional discomfort ranged from 2.58 at the VET school to 3.36 at school D, indicating anxiety among students that schools' teachers and leaders must address. In fact, the literature largely reports that negative feelings adversely affect school performance (J. Li & Xue, 2023; McDiarmid, 2023). Emotional discomfort—measured as anxiety, nervousness, and a sense of exclusion in classes—showed limited variability across all schools, justifying a reduction in the coefficient linking it to the learning experience ($\beta = 0.06$), indicating a negligible association. So, hypothesis 2 holds mainly because of students' perceptions of the assessment experience, not because all proximal dimensions are equally important.

4.3. Students' Distal Space

The influence of distal factors in the schools' microsystem—peer relationships and school climate—partially supports hypothesis 3. The broader school-wide space seems to be associated with students' learning experience mainly through school climate ($\beta = 0.63$), which has a higher magnitude. In contrast, the relationship with peers is weakly associated with the learning experience ($\beta = 0.11$), making hypothesis 3 only moderately supported. This aligns with other studies that stated that a better school climate and good relationships not only with peers, but also with teachers, are recognized as having an important role in supporting well-being (Hansen & Barene, 2025) and adolescents' quality of life (Guedes et al., 2023). In fact, the school climate is considered protective, supporting emotional health and high academic achievement (Podiyya et al., 2025).

4.3.1. The Weight of School Climate

External evaluations considered the school climate in the six schools safe and favorable. This homogeneity, in the eyes of the school inspectors, was not fully aligned with students' self-reported feelings, which ranged from 3.09 at school A to 3.81 at school E. Then, considering that school climate shapes students' social interactions, sense of belonging, and academic motivation (Hansen & Barene, 2025), well-being tends to be neutral in schools A, B, C, and F, and more positive in schools D and E. Considering that a "supportive school climate can buffer the negative effects of socioeconomic disadvantages by fostering positive interactions, meaningful engagement, and emotional security" (Hansen & Barene, 2025, p. 10), it can be assumed that schools E and D are better equipped to deal with factors from the macrosystem Bronfenbrenner space.

4.3.2. The Place of Peer Relationship

Students reported peer relationships as the most favorable factor, ranging from 3.61 at school C to 4.15 at school E, even though their effect on the learning experience was relatively small ($\beta = 0.11$). This may be because of their limited variability, as most stu-

dents reported favorable peer relations, reducing their explanatory power. Moreover, peer relationships may contribute more to students' social well-being than to their evaluation of learning processes, which assessment practices and school climate shape more directly. Their association may also be indirect, operating through broader contextual factors, which attenuates their direct influence on the model. However, Yang and Oh (2024) note that "such positive peer interactions not only contribute to children's development of a positive learning attitude but also help them adapt to complex social situations" (p. 252). According to the same authors, positive peer relationships often come with higher levels of emotional support and social recognition, which have long-term benefits for students' emotional stability and behavioral regulation. Peer relationships have been identified as significant predictors of social and emotional skills, particularly in interpersonal relationships (sociability), collaboration (trust in others), and emotional regulation (optimism) (Castro et al., 2025). So, peers play an important role in adolescents' lives, as results suggest they like their friends and that these relationships are socially and emotionally important, even though they do not differ significantly in how they experience learning.

4.4. Integrative Perspective and Practical Implications

In this study, we integrated quantitative data (from ANOVA and SEM) with qualitative data from content analysis of the schools' external evaluation. The results point to differences: school inspections capture structures, policies, and intended practices, suggesting high similarity across schools and a normative discourse and standardization; ANOVA reveals statistically significant differences between schools, with a small magnitude, but representing real variation; and SEM captures associations, pointing to what actually explains learning. The SEM showed that broader school-wide space dynamics, through school climate, and proximal classroom-related space dynamics, as well as assessment experience, played a major role in shaping students' learning experiences. The proximal space variables, teachers' support and emotional discomfort, as well as the distal space variable, relationship with peers, were weakly associated with shaping the students' learning experience.

So, schools may be structurally similar in inspections, but students experience them differently, and only some dimensions meaningfully shape learning. Even though inspections indicate that all six schools have good climates, SEM predicted that school climate varies subtly (not structurally) in highly consequential ways. The variable teacher support appeared paradoxical: inspections emphasize it, but SEM showed a weak association. We can hypothesize that support is normative and homogeneous, resulting in little variance and limited predictive power, prompting us to consider whether it is inclusion-responsive. Another interesting contrast concerns peers' relationships: although inspection characterized them positively across schools, the SEM indicates only a weak association with students' learning experience. Thus, positive peer relationships appear to be a widespread feature of the school environments but are only weakly associated with variation in learning experience.

This study, in addition to others, documents a complex reality regarding how learning experiences can influence their well-being and the adolescent quality of life (Aldridge & McChesney, 2018; Guedes et al., 2023; Moeller et al., 2020) and how they arise from conscious and/or unconscious judgments regarding the context experienced (Hopwood et al., 2025). The findings also suggest practical implications and three key domains of school intervention. First, schools should actively and systematically monitor school climate and students' learning experiences, disaggregating data to identify groups or contexts that require particular attention and to better design structured targeted interventions accordingly. Second, schools should promote collective professional inquiry in which teachers interpret evidence on school climate and students' feelings and experiences alongside pedagogical and assessment data. This process can support the redesign of teaching, learning, and

assessment, and reframe teacher support around instructional impact. Teachers must give greater attention to instructional clarity, feedback, scaffolding, and responsiveness to students' needs. Students themselves can participate in this process through structured opportunities to interpret findings and codesign improvement strategies. Third, teachers should invest in assessment for learning and as learning and define strategies to demystify assessment for students, with attention to formative feedback, self-assessment and peer assessment. The crucial action should be to reduce uncertainty surrounding assessment.

Overall, the findings point to schools prioritizing assessment quality and school climate as primary levers for school improvement, while maintaining supportive relational environments as essential enabling conditions for learning quality, inclusion, and well-being.

4.5. Strengths, Limitations, and Future Directions

This study used a multilevel model and a research design that integrated ANOVA and SEM results with external evaluation data from external evaluation reports, thereby allowing triangulation and strengthening the interpretation of latent constructs through contextual evidence. However, the study includes limitations. First, it relies on students' self-perceptions, and self-reported data are subjective, influenced by momentary feelings, states of mind, and events. Second, the study provides only a snapshot of students' feelings, which are dynamic over time. Then, future studies could include focus groups with students and teachers to deepen understanding of students' feelings and identify their causes. Longitudinal studies that capture the complex dimensions of relational processes with peers, teachers, and the school over time, along with class observations, also offer opportunities to gain depth. Situational assessments are needed to avoid bias and generalization, so differences or variations due to socioeconomic status, individual interests and intrinsic motivation, ethnicity, demographic groups, teachers, and subjects can be addressed. These dimensions were not explored in our study. Third, because the two ecological spaces were modeled separately, the estimated coefficients do not represent effects adjusted for constructs included in the other model and should therefore not be directly compared as estimates of their relative predictive importance. Future research may also explore mediator or moderator effects between variables. Fourth, the study included six purposively and conveniently selected schools with unequal sample sizes, including one smaller and structurally distinctive VET school. Although Welch's ANOVA and Games–Howell comparisons were used when variance assumptions were violated, this can condition comparisons between schools and limit generalizations. Accordingly, the observed differences should be interpreted as exploratory. A fifth limitation is that the picture of the schools' practices mobilized for this study centered on external evaluation reports, which are limited to a high-stakes evaluation event rather than regular, continuous practice (Serra et al., 2025b).

5. Conclusions

Schools need to monitor students' emotions because they are deeply tied to learning and long-term success. Taken together, the findings suggest: (i) a decoupling between institutional discourse and students' perceived experiential impact; (ii) high ratings in schools' external evaluations differ from the high explanatory power of students' experiences; (iii) what external evaluations view schools as doing is not fully aligned with what most shapes the learning experience from the perspective of students. Although schools are structurally similar, the differences perceived have a small effect on students' experiences of schooling, which are primarily driven by interactions and processes within the classroom-related space and the broader school-wide space. Additionally, from an ecological perspective, the study identified five schools or system typologies: pedagogically enriched performance ecology; relationally supportive but instructionally uneven ecology; neutral baseline ecology; normative and differentiated ecology; and disruptive learning

ecology. Ecological profile typification can serve as a diagnostic and strategic tool for school improvement by helping identify which combinations of pedagogical, relational, organizational, and emotional conditions require priority action.

Across our integrative study model, the two strongest predictors of students' learning experience are assessment experience in the proximal classroom-related space and the school-wide climate in the broader school-wide space. Both proximal and distal environments matter strongly, although not all dimensions within each space contribute equally. Less important elements are teacher support and relationships with peers, which, while crucial in promoting well-being, show reduced predictive power regarding the learning experience, likely due to a normative effect, given they are uniformly perceived as expected and positive. Finally, the association of emotional discomfort with students' learning is negligible, and its influence may be more indirect or mediated by more salient dimensions, such as assessment experience and school climate.

In sum, this study supports the idea that, concerning students' well-being, educational systems need more differentiated policy responses focused not only on accountability frameworks, but also on combining systemic evidence on students' overall perceived learning experience with knowledge of schools' ecological configurations.

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Abbreviations

The following abbreviations are used in this manuscript:

AVE	Average Variance Extracted
CFI	Comparative Fit Index
CFA	Confirmatory Factor Analysis
EQAVET	European Quality Assurance Reference Framework for Vocational Education and Training
ESSES	Exploratory Students' School Experience Scale
IFI	Incremental Fit Index
IGEC	General Inspection of Education and Science
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
TLI	Tucker–Lewis Index
VET	Vocational Education and Training

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