Improving Socioemotional Learning and Classroom Climate in Chilean Schools: Evidence from the Trabün-ASE Program

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1 Introduction

The *Programa de Aprendizaje Socioemocional* (PASE) of Fundación Trabün is a universal, evidence-based social and emotional learning (SEL) intervention implemented in Chilean primary and secondary schools. The program aims to strengthen students' socioemotional competencies and improve the overall classroom and school climate.

The intervention consists of three components: (i) **SEL lessons** (*Clases de ASE*), a structured, weekly SEL curriculum delivered during a dedicated instructional period by the students' own teachers; (ii) **School Climate** (*Clima y Convivencia Escolar*), a set of five transversal strategies that reinforce socioemotional skills through authentic opportunities for practice across the school community (e.g., *Mood Meter (Medidor Emocional)*); and (iii) **Families** (*Familias*), a family engagement component that promotes continuity of learning at home. All components are supported by a digital platform, standardized teaching materials, and teacher training.

The program builds upon the CASEL framework and focuses on five core competencies: *self-awareness*, *self-management*, *social awareness*, *relationship skills*, and *responsible decision-making*. Its expected theory of change posits that explicit SEL instruction through dedicated lessons, combined with consistent reinforcement through classroom and schoolwide practices, will improve students' emotional awareness, self-regulation, empathy, and sense of belonging, ultimately leading to more positive and inclusive school climates.

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2 Experimental Design

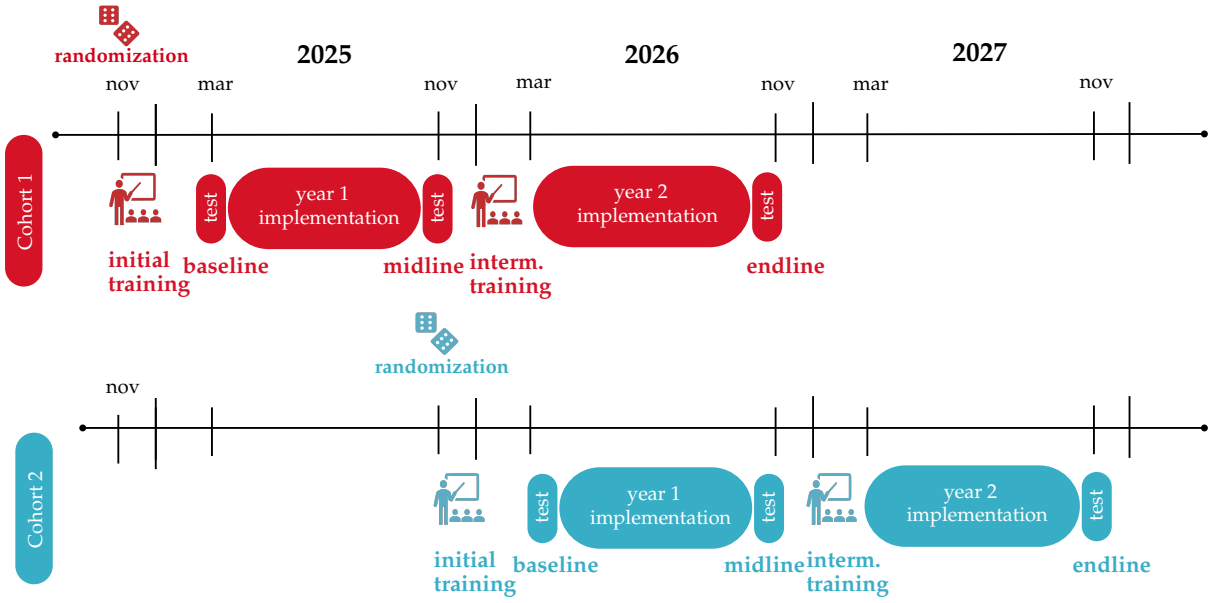
The PASE impact evaluation follows a cluster randomized controlled trial at the school level. The study is designed to include 120 schools, divided into two cohorts: Cohort 1 (2025–2026) with 42 schools and Cohort 2 (2026–2027) with 78 schools. This two-cohort design responds to implementation restrictions, as the ASE program is also being implemented outside the RCT framework and Fundación Trabün did not have sufficient staff capacity to onboard and support 120 new schools simultaneously in 2025.

Table 1: Number of Schools by Region and School Type

Region	Public	Private voucher	Total
O'Higgins	15	9	24
Biobío	40	22	62
Metropolitan	24	10	34
Total	79	41	120

Participating schools include both public and private-voucher institutions serving vulnerable student population in four regions of Chile. In the Metropolitan Region, the program specifically targets rural and peri-urban communities, while in the O'Higgins, Ñuble[1], and Biobío regions it includes schools from both rural and urban settings.

Figure 1: Study timeline and data collection by cohort



[1]For the purposes of randomization and analysis, schools located in the Ñuble region are grouped with Biobío.

As shown in Figure 1, each cohort is followed for two consecutive academic years. In the first year, the evaluation includes students in 4th to 7th grade; in the second year, it re-assesses those same schools, now with the original student cohorts in 5th to 8th grade. This design enables the study to capture both short-term and medium-term effects of the intervention within the same institutions and grade bands.

The unit of randomization is the school. Schools are assigned to one of two treatment arms or a control group. In both treatment arms, schools receive the same core intervention, including access to the online platform, initial (before year 1 implementation) and intermediate (after year 1 and before year 2 implementation) teacher training, and standardized implementation materials such as student workbooks, teacher guides, and complementary classroom materials. The two treatment modalities differ only in the intensity of ongoing implementation support provided by Fundación Trabün during program delivery, referred to as *Intensivo* (high-support) and *Semi-intensivo* (moderate-support).

Before baseline data collection, randomization was conducted in Stata using stratified random assignment:

- *Cohort 1 (implementing):* Randomization was stratified by region (Metropolitan, O'Higgins, Biobio), school dependency (public or private voucher), and school enrollment size (above or below the mean within the selected sample of schools). No schools from the Ñuble region participated in Cohort 1. This stratification approach produced 12 strata with varying numbers of schools.
- *Cohort 2 (planned):* Randomization was stratified by region and school dependency only. For the purposes of stratification, eligible schools from the Ñuble region will be grouped together with schools from the Biobío region. This decision reflects that (i) Biobío and Ñuble schools are highly comparable—our diagnostic analyses show no statistically significant differences across key covariates used in the randomization—and (ii) Ñuble was part of the Biobío administrative region until 2018, making the grouping both statistically and institutionally coherent.

The refinement of the stratification strategy reflects lessons from Cohort 1. The split by school enrollment size—above or below the sample mean—did not capture meaningful differences in school functioning, unlike region and dependency, which reflect structural and institutional distinctions in the Chilean education system. Moreover, the size-based stratification created several very small strata (one or two schools), which reduced the effective identifying variation for treatment effects.

Because treatment intensity may vary across schools, we will estimate both *intention-to-treat* (ITT) and *local average treatment effect* (LATE) models using two-stage least squares (2SLS), instrumenting actual exposure with random assignment.

3 Empirical Models

3.1 Intention-to-Treat (ITT)

To test the null hypothesis that the program had no impact on the outcome Y, we estimate the treatment effect conditioning on baseline covariates that are predictive of the outcome of interest:

$$Y^1_{igcs} = \beta_0 + \rho Y^0_{igcs} + \beta_{ITT1} I_s + \beta_{ITT2} S_s + G_g + E_{k(s)} + Coh_s + \gamma' X_i + \delta' W_c + \lambda' Z_s + \varepsilon_{igcs} \quad (1)$$

where Y^1_{igcs} is the post-intervention outcome of student i in grade g, classroom c, and school s, and Y^0_{igcs} is its baseline value. I_s and S_s are indicator variables for assignment to the *Intensivo* and *Semi-intensivo* treatment. G_g denotes grade fixed effects, $E_{k(s)}$ denotes fixed effects for the randomization strata, and Coh_s identifies cohort. Vectors X_i, W_c, and Z_s include pre-treatment individual-, classroom-, and school-level covariates that are predictive of the outcome of interest.

When estimating the treatment effects, we will also include gender, student performance, and attendance (we will also present results excluding these covariates), as these variables will also be used to examine treatment effect heterogeneity. Because our main outcomes are collected through in-person classroom visits and student attendance varies across days, we will inevitably have some missing data. In estimating treatment effects using baseline covariates, we may employ imputation techniques to replace missing baseline covariates to preserve sample size and statistical power. Since the unit of randomization is the school, standard errors will be clustered at the school level. All p-values will be adjusted for multiple hypothesis testing.

3.2 Local Average Treatment Effect (LATE)

Although treatment is assigned at the school level, implementation intensity may vary across classrooms and teachers. To account for this variation, we estimate instrumental variables specifications that relate outcomes to realized program exposure.

Actual treatment exposure is measured using classroom-level implementation intensity, defined as the number of program lessons delivered in each classroom. By construction, this measure equals zero for classrooms in control schools. We instrument implementation intensity with randomized assignment to the corresponding treatment arm (*Intensivo* or *Semi-intensivo*) and estimate effects using two-stage least squares.

3.3 Heterogeneous Treatment Effects

We will examine treatment effect heterogeneity by student gender, baseline academic performance, baseline attendance, and disadvantaged status, defined by whether a student is classified as *prioritario* or *preferente* according to the Ministry of Education (MINEDUC). These analyses will assess whether program impacts vary across different student subgroups and will be interpreted with appropriate caution.

4 Outcomes

4.1 Primary outcomes

The primary outcomes are students' socioemotional abilities and perceptions of school climate, measured at baseline, midline, and endline. Students' socioemotional abilities are measured using Trabün's Socioemotional Skills Instrument, developed and validated between 2021–2024. The instrument includes a set of distinct socioemotional abilities that map to the five higher-order competencies defined by the CASEL framework.

The abilities measured within each competency are as follows:

- **Self-awareness:** growth mindset, emotional self-awareness, self-concept;
- **Self-management:** emotional regulation, behavioral self-management;
- **Social awareness:** empathy, gratitude;
- **Relationship skills:** assertive communication, conflict resolution, kindness and generosity;
- **Responsible decision-making:** ethical responsibility, participation.

Each ability score is constructed as the average of item responses within the corresponding ability. All items use a four-point Likert scale. To reduce survey length, some abilities are administered only in higher grades; analyses therefore use the maximum available sample for each outcome.

Students' perceptions of school climate are also measured within the socioemotional skills instrument. School climate is analyzed along two dimensions:

- **Respectful environment:** capturing perceptions of respectful treatment, valuation of diversity, absence of discrimination, and care for the school environment; and

- **Safe environment:** capturing perceptions of physical and psychological safety, exposure to violence, and the presence of prevention and response mechanisms.

These dimensions are analyzed separately and are treated analogously to socioemotional abilities in the empirical analysis.

4.2 Intermediate outcomes

In line with the program's theory of change, we analyze teacher-level outcomes that capture potential mechanisms through which the intervention affects students. Teacher surveys are administered at baseline, midline, and endline and measure teachers' socioemotional self-efficacy, classroom climate, professional wellbeing, and attitudes toward socioemotional learning, along with background information on teaching experience and prior exposure to SEL programs. These outcomes are not considered final impacts of the intervention, but rather intermediate inputs that may help interpret changes in student socioemotional skills and school climate.

4.3 Secondary outcomes

Secondary outcomes include administrative and national-assessment measures used to examine potential downstream effects of the program. Specifically, we will analyze:

- Student academic achievement, measured using scores from Chile's national standardized assessment, SIMCE, in language and mathematics, where available for the relevant grades and cohorts;
- Student personal and social development, measured using SIMCE's Indicadores de Desarrollo Personal y Social (IDPS), where available for the relevant grades and cohorts;
- Student attendance, measured using end-of-year official attendance rates from administrative records;
- Student academic performance, measured using end-of-year official school grades; and
- School coexistence outcomes, measured using official reports of coexistence incidents submitted to the Superintendence of Education.

5 Sample size and power

The study sample is determined by program rollout and implementation capacity rather than by a single ex ante minimum detectable effect. The evaluation is implemented in two cohorts

of schools, which together comprise a total of 120 participating schools assigned to one of two treatment modalities or a control group. The staggered cohort structure allows for additional schools to be incorporated in later years, if required for statistical precision.

Power calculations are reported to contextualize the analysis and are based on the final number of schools assigned to each treatment arm, baseline outcome variability, and estimated intracluster correlation coefficients from Cohort 1. Minimum detectable effects are computed for pairwise comparisons between each treatment modality and the control group and are expressed in standard deviation units. Cluster sizes are based on official administrative enrollment for participating schools, with enrollment for Cohort 2 projected from prior-year grade records.

As shown in Table 2, the study is powered to detect effects on the order of approximately 0.06 to 0.14 standard deviations across primary student outcomes, depending on the outcome and treatment modality. These calculations are intended to aid interpretation of estimated effects rather than to determine enrollment or analysis decisions ex ante.

Table 2: Minimum Detectable Effects by Treatment Arm

Outcome	α	Power	Clusters (C)	Clusters (T)	Cluster size (C)	Cluster size (T)	N	Mean	SD	ICC	MDE (SD)	% change
Panel A. High-support treatment vs Control												
Respectful environment	0.05	0.80	41	41	194	194	15908	2.81	0.73	0.044	0.136	0.035
Safe environment	0.05	0.80	41	41	194	194	15908	2.87	0.71	0.026	0.110	0.027
Growth mindset	0.05	0.80	41	41	194	194	15908	2.31	0.70	0.010	0.075	0.023
Emotional self-awareness	0.05	0.80	41	41	194	194	15908	2.83	0.71	0.014	0.086	0.022
Self-concept	0.05	0.80	41	41	194	194	15908	3.36	0.62	0.008	0.071	0.013
Emotional regulation	0.05	0.80	41	41	194	194	15908	2.72	0.78	0.018	0.095	0.027
Behavioral self-management	0.05	0.80	41	41	194	194	15908	3.17	0.68	0.003	0.056	0.012
Empathy	0.05	0.80	41	41	194	194	15908	3.01	0.69	0.018	0.093	0.021
Gratitude	0.05	0.80	41	41	194	194	15908	3.39	0.59	0.015	0.087	0.015
Assertive communication	0.05	0.80	41	41	194	194	15908	3.00	0.64	0.011	0.079	0.017
Conflict resolution	0.05	0.80	41	41	194	194	15908	2.82	0.73	0.011	0.078	0.020
Kindness and generosity	0.05	0.80	41	41	194	194	15908	2.95	0.68	0.027	0.111	0.026
Ethical responsibility	0.05	0.80	41	41	194	194	15908	3.07	0.61	0.015	0.088	0.017
Participation	0.05	0.80	41	41	194	194	15908	2.50	0.70	0.025	0.107	0.030
Panel B. Moderate-support treatment vs Control												
Respectful environment	0.05	0.80	41	38	194	177	14680	2.81	0.73	0.044	0.139	0.036
Safe environment	0.05	0.80	41	38	194	177	14680	2.87	0.71	0.026	0.112	0.028
Growth mindset	0.05	0.80	41	38	194	177	14680	2.31	0.70	0.010	0.077	0.023
Emotional self-awareness	0.05	0.80	41	38	194	177	14680	2.83	0.71	0.014	0.089	0.022
Self-concept	0.05	0.80	41	38	194	177	14680	3.36	0.62	0.008	0.073	0.014
Emotional regulation	0.05	0.80	41	38	194	177	14680	2.72	0.78	0.018	0.097	0.028
Behavioral self-management	0.05	0.80	41	38	194	177	14680	3.17	0.68	0.003	0.058	0.012
Empathy	0.05	0.80	41	38	194	177	14680	3.01	0.69	0.018	0.096	0.022
Gratitude	0.05	0.80	41	38	194	177	14680	3.39	0.59	0.015	0.089	0.016
Assertive communication	0.05	0.80	41	38	194	177	14680	3.00	0.64	0.011	0.081	0.017
Conflict resolution	0.05	0.80	41	38	194	177	14680	2.82	0.73	0.011	0.080	0.021
Kindness and generosity	0.05	0.80	41	38	194	177	14680	2.95	0.68	0.027	0.113	0.026
Ethical responsibility	0.05	0.80	41	38	194	177	14680	3.07	0.61	0.015	0.090	0.018
Participation	0.05	0.80	41	38	194	177	14680	2.50	0.70	0.025	0.109	0.031