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Compassion-based social, emotional, and ethical learning in Urban Indian classrooms: Insights from a large-scale implementation in two major cities of Maharashtra, India

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ABSTRACT

This study presents one of the first large-scale exploratory evaluations of SEE Learning® in urban Indian elementary schools, offering novel insights into the contextual adaptation and developmental considerations of compassion-based social emotional learning (SEL) in low- and middle-income countries (LMICs). Conducted across nine schools in Maharashtra, India, the research assessed changes in students' interpersonal and intrapersonal competencies, with a particular focus on gender related patterns in emotional and behavioral responses. Findings revealed increases in perspective-taking, empathic concern, self-compassion, and academic goal setting, alongside a decrease in emotional reactivity. However, increases in self-judgment and decreases in classroom connection were also observed, suggesting complex emotional shifts that may accompany the growing awareness that may be fostered by social and emotional development in the classroom. Challenges such as linguistic diversity, large class sizes, and limited instructional time affected program delivery and adaptation, emphasizing the need for targeted approaches by education policymakers to address structural challenges using culturally responsive approaches. The exploratory findings point to possible directions such as integrating SEL into national education frameworks, strengthening teacher capacity-building, and refining implementation strategies to ensure equitable access and effectiveness in diverse educational settings. This study contributes to broader discussions on SEL scalability and contextual adaptation in low- and middle-income countries, offering insights for education policymakers, practitioners, and researchers. As a policy response to ongoing SEL debates in India, the study highlights the need for culturally responsive, system-level integration.

1. Introduction

For decades, Social and Emotional Learning (SEL) programs have been recognized as essential for fostering holistic student development. These programs equip young people with the capabilities to navigate the complexities of modern life. SEL programs have demonstrated a number of positive effects, including improved academic achievement, emotional regulation, and long-term well-being across diverse educational settings (Durlak et al., 2011; Mahoney et al., 2018; Schoner-t-Reichl, 2019). Compassion-based approaches are emerging as a newer approach expanding the field of SEL. Within this expanding field, school-based compassion interventions such as *Compassionate Mind Training for Pupils* have demonstrated positive impacts on students' empathy and prosocial behavior (Maratos et al., 2024). While broader compassion-focused programs also show consistent benefits across adult and clinical populations (Kirby and Petrocchi, 2023; Matos et al., 2022), these findings provide a strong theoretical and empirical foundation for extending such approaches into educational contexts. These approaches also closely align with global development priorities, particularly the Sustainable Development Goals (SDGs). This approach supports SDG 4 (Quality Education) by promoting inclusive and equitable learning environments, SDG 3 (Good Health and Well-being) through its impact on emotional resilience and mental health, and SDG 5 (Gender Equality) by addressing gendered patterns of emotional expression and engagement.

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Social, Emotional, and Ethical (SEE) Learning, developed at Emory University, is a curriculum that integrates social-emotional learning with compassion training and ethical inquiry. It emphasizes three domains: self-awareness and self-management, building positive relationships, and engaging with ethical issues at the systemic level. The program incorporates trauma-informed and resilience-based approaches and has been implemented globally, including in contexts of conflict and limited resources (Frazier et al., 2025b). Although SEE Learning has been adopted in several countries, this study represents the first large-scale evaluation in India. Early research suggests benefits for both teachers and students. In Ukraine, teachers reported improvements in personal well-being and enhanced capacity to support students during the social trauma of war (Frazier et al., 2025b). In the United States, students demonstrated gains in emotional resilience, classroom relationships, perspective-taking, and self-compassion (Frazier et al., 2025a). However, few studies have examined SEE Learning in South Asia, leaving open questions about scalability and cultural responsiveness in linguistically diverse classrooms.

India provides a critical context where SEL, and SEE Learning in particular, is gaining traction. The Piramal Foundation has documented systemic implementation of SEE Learning across the country, embedding compassion and resilience into public education. In Odisha's Kandhamal district, students in grades 6–8, have documented struggles with higher-order competencies such as critical thinking and ethical reasoning. This work suggested that SEE Learning may positively improve emotional regulation, ethical reasoning, and culturally responsive pedagogy (Rath, 2025). At the global level, Piramal's SEE Learning initiatives were recognized in a case study for scaling to over 100,000 government schools and training 15,000 education leaders (Piramal Foundation, 2023), but there has yet to be a large-scale study evaluating SEE Learning within the Indian context.

The current exploratory study is the first large-scale, mixed-methods evaluation of SEE Learning in India, conducted in urban public schools in Mumbai and Pune. It examines whether participation in SEE Learning is associated with changes in social, emotional, and ethical dimensions in early adolescents and explores variations in associations by gender. Given India's diverse and deeply gendered educational system, analyzing gender differences in SEL patterns is essential to ensure equity-focused implementation. This research underscores both the possible benefits and complexity of compassion-based SEL, offering practical guidance for educators, policymakers, and researchers seeking to scale SEL across diverse educational environments.

2. Literature review

2.1. Compassion training in educational contexts

Compassion training refers to structured sets of practices designed to cultivate awareness of suffering and a motivation to alleviate it, both in oneself and in others (Tirch, 2010). Compassion-based and school-based mindfulness programs typically incorporate practices such as mindfulness, emotional regulation, perspective-taking, and reinforcement of prosocial behavior (Birnie et al., 2010; Kemeny et al., 2012; Fosco and Schussler, 2025). Empirical studies suggest that compassion training can reduce negative affect, enhance positive emotional states, and promote prosocial responses among students (Kemeny et al., 2012; Weng et al., 2013). In parallel, school-based interventions have also indicated possible benefits for educators, such as improved well-being and reduced self-criticism (Maratos et al., 2019), which may indirectly enhance the classroom environment and support student flourishing.

2.2. Compassion and social and emotional learning

Empirical evidence suggests that such practices can improve cognitive control, reduce stress, and enhance empathy and prosocial behavior in children (Schonert-Reichl et al., 2015) and in adults (Weng et al., 2013). In school contexts, compassion-based SEL interventions have also been associated with improved teacher efficacy and emotional resilience, which may contribute to more supportive classroom environments (Cochran and Peters, 2023; Kirby and Petrocchi, 2023). Scholars have further noted that while mindfulness practices support attentional control and present-moment awareness, compassion-based and socio-cognitive practices are essential for cultivating nonjudgmental attitudes and relational sensitivity (Hildebrandt et al., 2017; Tirch, 2010).

2.3. Early adolescence as a developmental period

Early adolescence, typically encompassing ages 10–13, represents a critical window for social and emotional development (Brody, 1985). Research suggests that compassion-based approaches may be particularly salient during this period, as students begin to navigate more complex social dynamics and moral reasoning (Roeser and Pinela, 2014; Sanchis-Sanchis et al., 2020). At this stage, peer relationships and identity formation become increasingly central, making practices that foster empathy and prosocial concern especially impactful. Moreover, cultivating compassion during early adolescence may provide protective benefits against emerging risks such as heightened self-criticism, social comparison, and stress, thereby supporting both individual well-being and classroom cohesion.

2.4. SEL in the Indian educational landscape

The growing interest in SEL in India stems from heightened concerns about student well-being, particularly in the wake of the COVID-19 pandemic (Neelakantan et al., 2024). SEL programs have shown promise in promoting students' mental health, emotional regulation, and interpersonal relationships (Mangrio et al., 2024). Yet implementation in Indian schools faces persistent challenges, including limited institutional capacity, a lack of culturally relevant tools, and insufficient professional training for educators (Sharma et al., 2022; Neelakantan et al., 2024). These challenges are compounded by systemic pressures within India's education system, where public ranking of grades, intense academic competition, and family expectations to excel contribute to significant stress and silent suffering among youth (Information Matters, 2023; Neelakantan et al., 2024; Pienyu et al., 2024). Importantly, India's National Education Policy 2020 underscores the need for SEL by calling for curricula that cultivate "social, ethical, and emotional capacities" alongside cognitive skills (Government of India, 2020, Section 4.4). Such dynamics underscore the importance of culturally sensitive SEL approaches that not only foster emotional regulation and prosocial skills but also help students navigate environments of comparison, parental pressure, and performance anxiety (Government of India, 2020). Globally, SEL interventions have demonstrated positive impacts on behavioral and academic outcomes (Cipriano et al., 2023), but critiques highlight issues of conceptual clarity and cultural relevance. Some scholars caution that imported SEL approaches risk functioning as tools of cultural imperialism if not adapted to local contexts. In response, researchers have called for clearer definitions of SEL, greater attention to equity, and more deliberate, context-sensitive implementation strategies.

2.5. Gender as a contextual factor in SEL

Research suggests that girls often report higher levels of empathy and prosocial behavior than boys and may use different emotional regulation strategies (Matthews et al., 2009; Raimundo et al., 2013). However, findings on gender differences in SEL outcomes are mixed, with some studies reporting no significant differences in increases or decreases in measures (Sanchis-Sanchis et al., 2020). In India, where gender norms and expectations vary widely across regions and communities, understanding how gender shapes students' engagement with SEL is especially

important. The National Education Policy 2020 explicitly acknowledges the critical role of girls' education in advancing equity, noting that *"providing a quality education to girls is the best way to increase the education levels for socio-economically disadvantaged groups"* and establishing a Gender-Inclusion Fund to ensure equitable access for girls (Government of India, 2020, Sections 6.7 & 6.8). These policy commitments underscore the importance of designing SEL approaches that are not only culturally responsive but also attentive to gendered barriers in participation and outcomes.

2.6. Conceptual framework

This study is situated within the broader theoretical tradition of social and emotional learning (SEL), which emphasizes the development of emotional regulation, interpersonal skills, and ethical decision-making. Compassion-based SEL extends this tradition by explicitly cultivating empathy, prosocial behavior, and ethical awareness, offering a framework for both individual well-being and collective resilience. Early adolescence (ages 10–13) represents a critical developmental window in which students undergo rapid cognitive, emotional, and social changes. Theories of socio-emotional and moral development suggest that interventions during this period can have lasting impacts on identity formation, emotional regulation, and relational sensitivity (Kirby et al., 2023; Sahi et al., 2023), making compassion-based SEL potentially particularly salient at this stage.

The study is further situated in the context of urban Indian schools, which are characterized by linguistic diversity, socio-economic variation, and evolving educational priorities. Within this environment, SEL programs must address both equity and cultural relevance, consistent with national policy priorities that emphasize social, ethical, and emotional capacities (Government of India, 2020). Gender norms, in particular, shape how students engage with emotional expression and prosocial behavior, making gender an important modifier of SEL development. Prior studies have indicated that gender may influence how students engage with and benefit from SEL interventions (Matthews et al., 2009; Coelho et al., 2017). Accordingly, this study aims to determine the extent to which compassion-based SEL interventions are associated with students' emotional regulation, empathy, and prosocial behavior during early adolescence in urban Indian schools, while examining how gender norms and cultural context shape differential changes.

2.7. Research objectives

This study investigates whether participation in SEE Learning is associated with changes in students' social and emotional characteristics, and whether these patterns vary by gender. Prior studies suggest that gender may influence how students engage with and benefit from SEL interventions. By situating this inquiry within the educational ecologies of Mumbai and Pune, urban centers marked by linguistic and socio-economic diversity, the study contributes to broader discussions on the contextual adaptation of SEL frameworks and their differential impacts across diverse learner populations. Findings are expected to inform broader efforts to scale SEL across India, offering insights into how compassion-based approaches can support equity in linguistically and socio-economically diverse classrooms.

3. Methods

3.1. Design and setting

Using a mixed-methods, longitudinal design, this exploratory study examined patterns of change during SEE Learning implementation in urban Indian schools. Data were collected in nine English-medium public schools in Mumbai and Pune that serve underserved children. Schools were selected from a network of 21 government schools following local government approval, ethical review, and letters of support from school leadership. Assessments were administered at two time points: baseline (pre-test, prior to implementation) and endline (post-test, at the end of the school year). Surveys were conducted in English by trained research staff using pen-and-paper formats, with bilingual assistants providing clarification as needed to accommodate linguistic diversity.

3.2. Sample and participants

The intervention involved grades 4–6 students (n = 1264) across 42 classrooms. Participation required parental consent and student assent; 83% of eligible students completed the pretest. Attrition rates were comparable across genders, with 87% retention among boys and 92% among girls (Fig. 1).

Parents were informed about the study at least two weeks prior to baseline assessments, and because the program was delivered as part of the regular curriculum, parental permission and child assent were required only for participation in the research assessments. Children whose parents declined participation were provided an alternative activity during assessment sessions. In accordance with in-country ethical requirements, verbal parental consent was obtained from at least one parent or guardian, a practice permissible guided by the Indian Council of Medical Research (ICMR) National Ethical Guidelines for Research Involving Children, which allow oral consent when appropriate to local context and approved by an ethics committee. All participating students provided age-appropriate assent, and all procedures were approved under IRB Protocol STUDY00002823. Data collection and handling were also carried out in alignment with the ICMR and Emory IRB, which require that identifiable information be stored in password-protected, access-restricted files kept separate from research data and accessible only to authorized personnel to ensure strict confidentiality.

3.3. Intervention

The SEE Learning program was implemented by classroom teachers over approximately 26 weeks during the academic year, coinciding with students' return to in-person instruction following COVID-19 closures. Teachers received training from a certified SEE Learning facilitator after the pre-test and delivered weekly lessons lasting 30–55 min. Although lessons were scheduled weekly, completion typically required two weeks per lesson. Teachers submitted weekly reflections to monitor dosage, student engagement, and fidelity, and participated in ongoing support sessions (Table 1).

3.4. Measures and data collection

3.4.1. Implementation measures

Teacher diaries tracked dosage, fidelity, preparation time, delivery time, comfort, and student engagement. Fidelity was assessed by adherence to lesson plans, while acceptability was gauged through teacher comfort ratings. Student engagement was recorded on a 5-point scale (Table 2).

3.4.2. Language context and validation

All participating schools were English-medium institutions, with English as the primary language of instruction. Given the linguistic diversity of students, many of whom spoke Marathi or Hindi at home, we addressed concerns that varying English fluency might affect survey comprehension. English-only measures were considered appropriate because (a) classroom instruction and assessment occurred in English, (b) teachers and facilitators were fluent and able to clarify items in students' home languages, and (c) cognitive validation confirmed accessibility across linguistic groups.

A two-stage validation process was conducted with two independent student groups (n = 30 each). Students completed the full measurement

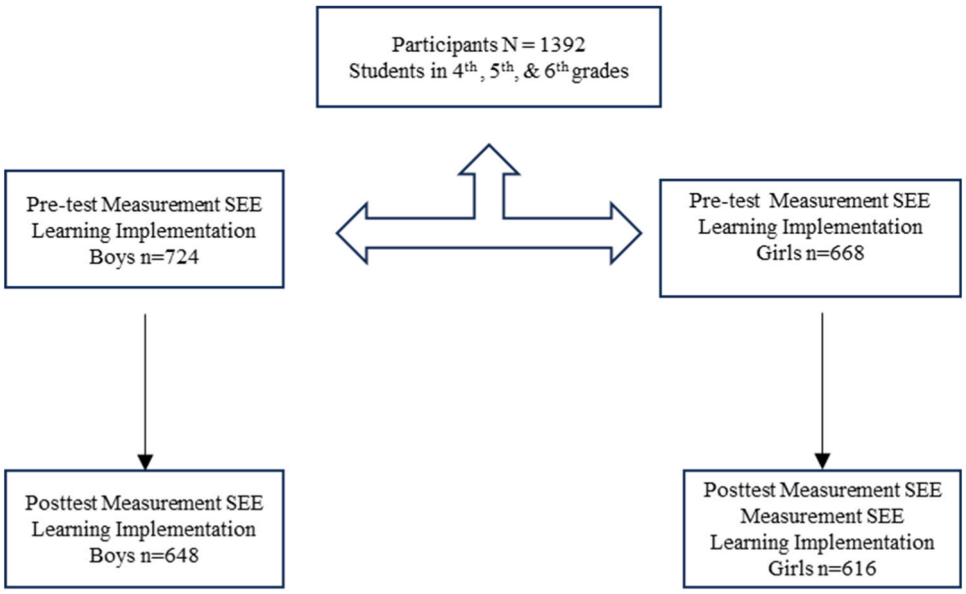


Fig. 1. Participant Flowchart: This is a diagram of participant recruitment and retention. The initial study sample included 1392 students, at pre-test. At post-test, there was an 87% retention of boys and a 92% retention rate among girls. The final analysis included participants who completed pre-test and post-test assessments. The final sample size consisted of 1264 students across 42 classrooms.

package and then participated in structured cognitive interviews to paraphrase items, explain reasoning, and identify confusing terms. Items were retained if ≥ 90% of students demonstrated accurate comprehension; overall, more than 95% of items met this threshold. To further test for bias, students' self-reported home language and teacher-reported English proficiency were included as covariates in statistical models. Neither variable was significantly associated with outcomes, and controlling for them did not alter intervention effects. These findings strengthen confidence that observed changes reflect the changes associated with SEE Learning exposure rather than differences in English proficiency.

Finally, facilitators and teachers provided clarification in students' home languages when needed, ensuring equitable engagement and supporting the appropriateness of English-language delivery in this multilingual context.

3.4.3. Student outcome measures

Students completed eight standardized questionnaires (114 items, taking one class period ~50 min). Reliability coefficients indicate acceptable measurement across constructs.

3.4.3.1. Interpersonal reactivity index – perspective-taking. We used the Interpersonal Reactivity Index (IRI; Davis, 1983), modified for this study based on developmental psychologist, Dr. Miller's recommendations (personal communication, March 15, 2024) adapted for children to evaluate students' perspective-taking abilities. The IRI is a self-report instrument consisting of 28 items divided into four subscales: perspective-taking, empathic concern, personal distress, and fantasy, with each subscale comprising seven items. For this study, we focused on the perspective-taking and empathic concern subscales. Items were adapted for age-appropriate comprehension and cultural relevance. Sample items from the perspective-taking subscale include: *"It's easy for me to understand why other people do the things they do"*, and *"Sometimes I try to understand my friends better by imagining how they think about things."* Students rated each item using a 5-point Likert scale, indicating how true each statement was for them (The perspective-taking subscale demonstrated adequate internal consistency, with Cronbach's alpha values of 0.73 at pre-test and 0.74 at post-test, indicating acceptable reliability for use in this age group.

3.4.3.2. Interpersonal reactivity index – empathic concern. We used the Interpersonal Reactivity Index (IRI; Davis, 1983), modified for this study based on Miller's recommendations (personal communication, March 15, 2024) adapted for children to evaluate students' empathic concern. This subscale includes seven items that measure the emotional dimension of empathy, focusing on feelings of warmth, compassion, and concern for others. It captures how individuals emotionally respond to the experiences of others. Sample items include: *"I often feel sorry for people who don't have the things I have"*, and *"Sometimes I feel very sorry for other people when they are having problems."* Students rated each item using a 5-point Likert scale, indicating the degree to which each statement was true for them. The Empathic Concern subscale demonstrated adequate internal consistency at both the pre-test and post-test stages, with Cronbach's alpha values of 0.78 and 0.79, respectively, indicating reliable measurement across time points.

3.4.3.3. Emotional Expression Scale for Children (EESC). To assess students' ability to tolerate and express uncomfortable emotions, we used the Emotional Expression Scale for Children (EESC). The EESC was designed to measure emotional awareness and expressive reluctance in children, typically ages 8–12. It was validated in youth samples to assess how children recognize and express negative emotions. The validation studies demonstrated acceptable reliability and construct validity, confirming that the scale is appropriate for younger populations. This is a self-report measure designed to evaluate emotional awareness and expressive reluctance (Penza-Clyve and Zeman, 2002). The scale consists of 8 items rated on a 5-point Likert scale, ranging from 1 ("Not at all true") to 5 ("Extremely true"). Items reflect children's comfort with recognizing and articulating negative emotions. For example, students responded to statements such as *"I have feelings that I can't figure out"*, and *"When I feel upset, I do not know how to talk about it."* These items capture both emotional confusion and difficulty with verbal expression, which are common challenges in emotional development.

The EESC demonstrated moderate internal consistency in this study, with Cronbach's alpha values of 0.65 at pre-test and 0.60 at post-test. While slightly below conventional thresholds, these values are consistent with prior research using this scale in younger populations and in culturally diverse settings.

Table 1
Intervention scope & sequence of SEE learning curriculum delivered.

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8	Lesson 9	Lesson 10	Lesson 11	Lesson 12	Lesson 13
Lesson Title	Exploring Compassion	Exploring Kindness	Class Agreements	Practicing Kindness & Compassion	Recognizing Compassion & Exploring Interdependence	Exploring Sensations	Resourcing	Creating a Resource Kit	Grounding	The Resilience Zone	Exploring the Resilience Zone through Scenarios	How Compassion & Safety Affect the Body	Teachers used this week to complete any LEs or revisit concepts with students.
Lesson Objective	Explore the relationship between happiness, kindness, and compassion.	Explore how the universal wish for happiness underlies human action, motivation, and emotion.	Identify agreements to create a compassionate classroom.	Develop ways of exhibiting compassion in the classroom.	Recognize how things that meet our needs come from actions of countless others.	Develop vocabulary describing body sensations and how to identify them.	Track sensations in the body and identify a personal resource that calms their body.	Create a resource kit they can use to calm themselves when stressed.	Gain proficiency in the practice of grounding through different methods.	Understand the zones of wellbeing and recognize which zones they are in at any given moment.	Learn to track which zone they are in by tracking body sensations. Use resourcing and grounding to shift.	Recognize how class agreements, kindness, and safety can affect the nervous system, and this can affect physical health.	Teacher-Choice

3.4.3.4. The intrinsic prosocial motivation scale. To assess students' intrinsic motivation to engage in prosocial behavior, we used a three-item self-report scale designed to capture internal reasons for helping others. Intrinsic prosocial motivation was assessed using items adapted from prior adult measures (Stich et al., 1995). The scale prompts students with the stem, *"What makes you want to help?"* followed by statements reflecting intrinsic motivations. Sample items include: *"Because I think it is good to help"* and *"Because I would feel bad if I didn't help."* Students rated each item on a 5-point Likert scale ranging from 1 ("Not at all true") to 5 ("Extremely true"), indicating the degree to which each reason resonated with their personal motivations. The scale demonstrated moderate internal consistency, with Cronbach's alpha values of 0.67 at pre-test and 0.63 at post-test. These values are consistent with expectations for brief scales used in exploratory educational research.

3.4.3.5. Self-Compassion Scale (short form) for Children. To assess students' self-compassion, we utilized the Self-Compassion Scale for Children (SCS-C). This scale, adapted from the SCS-Short Form typically used with adults, was modified to be suitable for children and adolescents by adjusting the language to be age-appropriate (Sutton et al., 2017). Previous research identified two subscales through factor analysis. The measure consists of 12 items assessing self-compassion across six 2-item subscales: self-kindness (e.g., "I try to be kind towards those parts of myself I don't like"), self-judgment (e.g., "I am hard on myself about my own flaws''), common humanity (e.g., "When I fail at something, I try to remember that everybody fails sometimes too"), isolation (e.g., "When I fail at something that's important to me, I feel like I'm all alone''), mindfulness (e.g., "When something upsets me I try to stay calm''), and over-identification (e.g., "When I'm feeling down, I can't stop thinking about everything that's wrong'') (Sutton et al., 2017). Confirmatory factor analysis in our study supported the two-factor structure, with fit indices indicating a good model fit: RMSEA = 0.048, CFI = 0.988, TLI = 0.891, and SRMR = 0.040. The two factors were categorized as positive aspects of self-compassion (common humanity, mindfulness, and self-kindness) and negative aspects (isolation, self-judgment, and over-identification). In this sample, the scale's internal consistency was reflected in Cronbach's alphas of 0.69 at pre-test and 0.61 at post-test.

3.4.3.6. Classroom supportiveness. To assess students' perceptions of overall supportiveness in the classroom, we utilized the 14-item Classroom Supportiveness scale from the Sense of Classroom as a Community Scale. This is a 14-item Classroom Supportiveness subscale (Battistich et al., 1997). The subscales evaluate how students perceive their classmates' support and helpfulness, with items such as "Students in this class help each other learn." Students rated each item on a 5-point Likert scale, from 1 ("disagree a lot") to 5 ("agree a lot"). Group disrespect was measured with items such as "Students in this class like to put others down", and "Students in this class just look out for themselves." Internal consistency, as measured by Cronbach's alphas, was 0.69 at pre-test and 0.83 at post-test for classroom support, and 0.90 at pre-test and 0.96 at post-test for disrespect.

3.4.3.7. Academic goals questionnaire. The Academic Efficacy subscale of the Patterns of Adaptive Learning Scales (Midgley et al., 2000) was administered. This scale was validated in a sample of youth (ages 8–14). This scale evaluates a student's academic goal setting and growth mindset around these goals. This questionnaire consists of five items, with students rating each item on a 5-point Likert scale. Example questions include "If I have enough time, I can do a good job on all my schoolwork", and "Even if the work in school is hard, I can learn it." In this sample, the Cronbach's alpha coefficients for this construct were 0.76 at both pre-test and post-test.

Table 2
Implementation feasibility based on regular teacher feedback from implementing classrooms.

Learning Experience	Preparation Time[a]	Implementation Time[b]	% Complete[c]	Lesson Fidelity (% Moderate High to Very High)[d]	Teacher Comfort (% Moderately High to Very High Comfort)[e]	Student Engagement (% Moderately High to Highly Engaged)[f]
Chapter One						
LE1	15 – 30 min	1 – 2 h	100	86	72	63
LE2	15 – 30 min	1 – 2 h	100	100	95	67
LE3	15 – 30 min	1 – 2 h	100	100	100	81
LE4	15 – 30 min	1 – 2 h	100	100	100	77
LE5	15 – 30 min	1 – 2 h	100	88	100	88
Chapter Two						
LE1	15 – 30 min	1 – 2 h	100	95	86	65
LE2	15 – 30 min	1 – 2 h	100	100	96	68
LE3	15 – 30 min	1 – 2 h	100	96	100	95
LE4	15 – 30 min	1 – 2 h	100	95	100	70
LE5	15 – 30 min	1 – 2 h	70	100	95	65
LE6	15 – 30 min	1 – 2 h	59	100	100	76
LE7	15 – 30 min	1 – 2 h	56	100	82	67

[a] Average preparation time (None; <15 min; 15 – 30 min; 30 – 60 min; 1–2 h; 2 +h)
[b] Average implementation time (<30 min; 30 – 60 min; 1–2 h; 3–4 h; 4 + h)
[c] Average portion of the learning experience completed across the implementing classrooms
[d] Percent of learning experiences where all core components were delivered to the class (Very High; Moderately High; Average; Moderately Low; Very Low)
[e] Teacher comfort (Very High; Moderately High; Average; Moderately Low; Very Low)
[f] Student engagement (Not engaged at all; Little engaged; Somewhat engaged; Highly Engaged; Very Highly Engaged)

3.4.3.8. Satisfaction with Life Scale for Children. The Satisfaction with Life Scale for Children (SWLS-C; Gadermann et al., 2010) has been validated in youth ages 10–14, demonstrating reliability and construct validity in late elementary and early adolescent samples. This scale includes items such as "In most ways my life is close to the way I would want it to be", and "If I could live my life over, I would have it the same way." Students rated each item on a five-point Likert scale, from 1 ("Disagree a lot") to 5 ("Agree a lot"). The Cronbach's alpha coefficient for this construct was 0.79 at both pre-test and post-test.

3.5. Qualitative data collection

Qualitative data were collected in two schools (one in Mumbai, one in Pune). Teacher interviews (n = 10 baseline, n = 10 endline) explored implementation experiences, perceived impact, and contextual fit. Student interviews (n = 4, Grades 5–6 at endline) provided insights into engagement and perceived outcomes. Domains of questioning included:

- Impact on student and teacher well-being and prosocial behavior.
- Adaptations for cultural or linguistic relevance.
- Constraints in implementation (time, resources, priorities).

Interviews were conducted in English with clarification in local languages as needed.

3.6. Qualitative analysis

Interview transcripts were analyzed thematically using a coding framework derived from the study's domains of inquiry (impact, adaptations, constraints). Two trained coders refined the codebook iteratively on a subsample of transcripts, achieving inter-rater reliability above 85% and final thematic agreement above 95%. Discrepancies were resolved through discussion. Emerging themes were compared across teacher and student accounts to identify consistent patterns. Triangulation across participant groups (teachers, students) and sites (Mumbai, Pune) strengthened validity. Qualitative insights were later integrated with quantitative results to contextualize statistical findings and highlight mechanisms underlying observed changes.

3.7. Quantitative analytical approach

Quantitative analyses employed hierarchical linear modeling (HLM) to estimate average changes in student outcomes while accounting for the nested structure of students within classrooms. To examine gender differences, we applied a difference-in-differences (DiD) approach, comparing pre- to post-intervention changes between boys and girls across domains of social-emotional learning and well-being. Variance inflation factors (VIFs) were below 2.5, indicating acceptable levels of collinearity among predictors.

3.8. Power analysis

Sample size calculations were conducted using G*Power, assuming a medium effect size ($f = 0.25$), $\alpha = 0.05$, and $\beta = 0.236$. Guidelines from the National Center for Education Evaluation suggest a minimum of 300 students for education-based intervention studies to achieve adequate statistical power. Given the hierarchical structure of the data, we targeted at least 30 classrooms to ensure sufficient power for HLM.

Table 3
Descriptive statistics for all demographic variables by gender.

Variables	Boys (n = 648)	Girls (n = 616)	Total (n = 1264)
Age (mean, SD, range)			
	10.4 (1.0,8–13)	10.2 (1.0, 8/13)	10 (1.0, 8/13)
Grade (%) (di1)			
4th	17%	17%	34%
5th	19%	17%	36%
6th	15%	15%	30%
English Reading Proficiency (%)			
Mean	2.9 (0.91)	3.1 (0.86)	3.0 (0.89)
Primary Language Spoken (%)			
English	19%	22%	21%
Hindi	37%	33%	35%
Marathi	42%	43%	42%
Telugu	2%	2%	2%
Primary Language Read (%)			
English	50%	61%	55%
Hindi	25%	15%	20%
Marathi	25%	24%	25%
Telugu	0	0	0
Family Composition			
Both Parents	79%	80%	79%
Only Dad	3%	2%	3%
Only Mom	16%	13%	15%
Other Adults	3%	4%	4%

Table 4
Qualitative analysis of teacher and student experiences with SEE learning.

Subcategory	Findings	Examples/ Recommendations
Teacher Development and Engagement		
Increased Confidence and Facilitation Skills	Teachers transitioned from traditional instruction to facilitation, leading to increased student participation and self-expression. However, adapting facilitation techniques for large and diverse classrooms remained a challenge.	Provide continuous training focused on facilitation skills and differentiated instruction.
Integration into Daily Routines	Teachers successfully integrated grounding exercises and reflective journaling into daily school activities, fostering a culture of mindfulness and emotional regulation.	Formalize integration across subject areas to reinforce SEE Learning principles throughout the school day.
Linguistic and Cultural Barriers	Teachers faced difficulties translating complex concepts into student-friendly language, particularly in multilingual classrooms. Younger students required additional scaffolding to grasp abstract concepts.	Develop bilingual/ multilingual resources with age-appropriate, culturally relevant examples.
Student Engagement and Impact		
Positive Behavioral Shifts	Students demonstrated improved emotional regulation, conflict resolution, and prosocial behaviors. Teachers observed that students applied calming strategies outside the classroom.	Example: A teacher noted that students who previously responded to conflicts with aggression now paused to calm themselves before reacting.
Classroom Relationships and Ownership	Students increasingly valued fairness, patience, and emotional support from teachers. Over time, their expectations of teachers shifted from strict discipline to supportive guidance.	Example: Initially, students described ideal teachers as "strict and friendly." By the end of the program, they emphasized emotional understanding and fairness.
Challenges in Writing-Based Reflection Activities	Students, particularly those with lower literacy levels, struggled with written reflection exercises, which limited engagement.	Incorporate alternative reflection methods such as visual storytelling, peer discussions, and interactive activities to ensure inclusivity.
Implementation Challenges and Adaptation Needs		
Time Constraints and Session Frequency	A single weekly session limited reinforcement and practice opportunities, reducing student retention and application of skills.	Increase session frequency to twice per week and integrate micro-practices into daily routines.
Large Class Sizes and Resource Constraints	High student-teacher ratios limited individual attention and structured reflection time.	Develop peer-led student facilitator roles and small-group activities to enhance engagement.
Need for Stronger Administrative and Parental Involvement	Students lacked reinforcement of SEE Learning principles at home, reducing long-term impact.	Conduct parent workshops on SEE Learning and encourage school leadership to integrate SEE Learning into institutional frameworks.

3.9. Robustness checks

Sensitivity analyses were conducted to assess the stability of HLM estimates. Specifically, we compared grand-mean versus group-mean centering of Level-1 predictors and applied cluster-robust (Huber-White) standard errors to account for potential heteroscedasticity. Results were consistent across specifications, supporting the robustness of findings.

3.10. Missing data

Less than 10% of post-test data were missing among students who completed both assessments. Assuming data were missing at random (MAR), we applied multiple imputation by chained equations (MICE) with 15 imputations, exceeding conventional minimums to ensure stable parameter estimates in nested data structures. Diagnostic checks (distribution comparisons, chain convergence, and sensitivity analyses against complete-case results) supported the plausibility of the MAR assumption. Analyses were conducted using hierarchical linear modeling (HLM) and difference-in-differences (DiD), with results pooled using Rubin's rules to account for between-imputation variability.

3.11. Data availability

Due to India's student data privacy regulations, including the UDISE+ Data Sharing Policy and the Digital Personal Data Protection Act (2023), the dataset cannot be made publicly available. De-identified data, study analysis code, and detailed descriptions of study materials are available upon request, subject to data sharing agreements and ethical considerations. This study was not preregistered.

4. Results

4.1. Descriptive statistics

We begin by presenting descriptive statistics for the study sample of students who participated in the SEE Learning intervention in Mumbai and Pune. The sample consisted of 1264 children, with 648 boys and 616 girls. The average age was 10 years, with a range from 8 to 13 years. The distribution across grades was mostly even, with 34% in 4th, 36% in 5th, and 30% in 6th. In terms of English reading proficiency, girls had a slightly higher mean score (3.1) compared to boys (2.9). The primary languages spoken at home were Marathi (42%), Hindi (35%), English (21%), and Telugu (2%). Regarding reading, 55% of the children primarily read in English, followed by Marathi (25%) and Hindi (20%). Regarding family composition, most children (79%) lived with both parents, while 15% lived with only their mother, 3% with only their father, and 4% with other adults (Table 3).

4.2. Qualitative results

Qualitative findings provided contextual insights into teacher development, student engagement, and implementation challenges. These perspectives highlight both the successes of SEE Learning implementation and the areas requiring adaptation for sustainable integration in urban Indian schools. Table 4 summarizes the thematic structure of teacher and student experiences.

4.2.1. Teacher development and engagement

Teachers reported increased confidence and facilitation skills as they transitioned from traditional instruction to more interactive, student-centered approaches. Over time, they grew more comfortable with experiential learning and integrating emotional and mindfulness practices into daily routines. Successful adaptations included using visual aids, role-play, and grounding exercises to foster emotional regulation. Challenges remained in managing large, diverse classrooms and

Table 5
Hierarchical linear modeling of the impact of SEE learning on student development in India.

	Change				ICC		
	Student	CI	Standard Error	z	School (n = 9)	Class (n = 42)	Student (n = 1264)
Intrapersonal Domains of Impact Awareness & Appraisal							
Perspective Taking	**0.06** ***	0.03 – 0.09	0.01	4.34	0.01 (0.01)	0.03 (0.02)	**0.14 (0.02)**
Emotional Resonance							
Empathic Concern	**0.10****	0.07–0.14	0.02	5.29 ***	0.02 (0.01)	0.03 (0.01)	**0.18 (0.03)**
Tolerating Uncomfortable Feelings							
Emotional Expression	**-0.03****	-0.06 - −0.011	0.02	-1.39	0.00 (0.01)	0.05 (0.01)	**0.12 (0.02)**
Motivation to Act							
Intrinsic Prosocial Motivation	-0.02	-0.08–0.04	0.03	-0.61	0.01 (0.01)	0.03 (0.01)	0.23 (0.04)
Action							
Positive Self-Compassion	**0.11****	0.07–0.15	0.02	5.47 ***	0.01 (0.01)	0.07 (0.02)	**0.17 (0.04)**
Negative Orientation to Self	**0.13****	0.08–0.17	0.02	5.82***	0 (0)	0.03 (0.01)	**0.25 (0.04)**
Interpersonal Domains of Impact – Classroom Supportiveness							
Student Class Supportive	**-0.08****	-0.14–0.012	0.03	-2.34 ***	1	0.34	__
Student Group Disrespect	**-0.15****	-0.22–0.08	0.04	-3.94***	0 (0)	0.08 (0.02)	**0.27 (0.04)**
Distal Outcomes							
Academic Goal Setting	**0.07****	0.02–0.12	0.03	2.58 ***	0.02 (0.01)	0.03 (0.02)	**0.17 (0.05)**
Life Satisfaction	-0.01	-0.08 – 0.05	0.03	-0.39	0.01 (0.01)	0.04 (0.02)	0.26 (0.043)

Standard Deviation in parentheses
*** p < .01, ** p < .05, * p < .1

Table 6
Intervention analysis table for change during the implementation period by gender among students in India.

	Intervention Girls (n = 616)		Intervention Boys (n = 648)		Group Difference (total n = 1264)
	Pretest Mean	Posttest Mean	Pretest Mean	Posttest Mean	Dif in Dif
Intrapersonal Domains: Individual Awareness & Appraisal					
Perspective Taking	3.41 (3.33–3.48)	3.59 (3.52–3.67)	3.34 (3.37–3.41)	3.43 (3.36–3.51)	0.10
Emotional Resonance					
Empathic Concern	3.69 (3.62–3.76)	3.92 (3.84–3.99)	3.54 (3.47–3.61)	3.67 (3.60–3.75)	0.09
Tolerating Uncomfortable Feelings					
Emotional Expression	2.95 (2.88–3.03)	3.01 (2.94–3.09)	2.99 (2.92–3.06)	2.91 (2.83–2.98)	**0.14****
Motivation to Act					
Intrinsic Prosocial Motivation	4.20 (4.13–4.28)	4.34 (4.26–4.43)	3.97 (3.90–4.05)	4.08 (4.00–4.17)	0.03
Action					
Positive Self-Compassion	3.36 (3.30–3.43)	3.63 (3,56–3.69)	3.37 (3.30–3.43)	3.54 (3.47–3.61)	0.087
Negative Orientation to Self	2.88 (3.03–3.24)	3.12 (3.01–3.22)	2.82 (2.75–2.88)	2.98 (2.91–3.06)	0.07
Interpersonal Domains: Classroom Supportiveness					
Student Class Supportive	3.98 (3.91–4.05)	3.82 (3.74–3.91)	3.88 (3.81–3.96)	3.83 (3.75–3.91)	-0.10
Student Class Disrespect	2.45 (2.37–2.54)	2.59 (2.59–2.68)	2.44 (2.36–2.52)	2.46 (2.37–2.55)	0.12
Distal Domains					
Academic Goal Setting	3.88 (3.81–3.95)	4.00 (3.93–4.09)	3.72 (3.65–3.78)	3.88 (3.81–3.96)	-0.04
Life Satisfaction	4.05 (3.97–4.12)	4.06 (3.98–4.14)	3.93 (3.85–4.00)	3.87 (3.78–95)	0.07

Standard Deviation in parentheses
*** p < .01, ** p < .05, * p < .1

translating abstract concepts into age-appropriate language, underscoring the need for ongoing training and differentiated instructional strategies.

4.2.2. Student engagement and impact

Students engaged most strongly with movement, creative and interactive activities, while written reflection tasks posed difficulties, particularly for those with lower literacy levels. Teachers observed positive behavioral shifts, including improved emotional regulation, conflict resolution, and prosocial behaviors, with some students applying calming strategies outside the classroom. Classroom relationships evolved as students increasingly valued fairness and emotional support from teachers over strict discipline, reflecting a shift toward more supportive learning environments.

4.2.3. Implementation challenges and adaptation needs

Implementation was constrained by limited session frequency, large class sizes, and high student-teacher ratios, which reduced opportunities for individualized reflection. Teachers emphasized the need for stronger administrative and parental involvement to reinforce SEE Learning principles beyond the classroom. Recommendations included increasing session frequency, developing peer-facilitator roles, and conducting parent workshops to strengthen program sustainability and contextual fit.

4.2.4. Teacher vs. student perspectives

Comparative analysis revealed both convergence and divergence in experiences. Teachers valued reflective components but struggled with consistent delivery, while students preferred interactive activities and found written reflection challenging. Teachers emphasized facilitation and emotional support, whereas students expressed a desire for structured guidance and fairness. Both groups noted behavioral and emotional growth, particularly among older students, though younger students struggled with abstract concepts. These findings highlight the importance of multimodal reflection strategies and developmentally responsive approaches to SEL instruction.

4.3. Quantitative results

Across all robustness checks, including centering choices, slope specifications, estimation methods, and attrition exclusions, the substantive HLM findings remained stable, supporting their reliability (Table 5).

Intrapersonal Outcomes. Students showed significant increases in perspective-taking ($\beta = 0.06$, 95% CI [0.03, 0.09], $p < .001$), empathic concern ($\beta = 0.10$, 95% CI [0.07, 0.14], $p < .001$), and positive self-compassion ($\beta = 0.11$, 95% CI [0.07, 0.15], $p < .001$). Emotional expression decreased modestly ($\beta = –0.03$, 95% CI [–0.06, –0.011], $p < .001$), while intrinsic prosocial motivation showed no statistically significant increases or decreases ($\beta = –0.02$, 95% CI [–0.08, 0.04]). Unexpectedly, *negative orientation to self,* increased ($\beta = 0.13$, 95% CI [0.08, 0.17], $p < .001$), suggesting heightened self-judgment and perceived isolation.

Interpersonal Outcomes. At the relational level, classroom connection declined ($\beta = –0.08$, 95% CI [–0.14, –0.012], $p < .001$), as did student group respect ($\beta = –0.15$, 95% CI [–0.22, –0.08], $p < .001$). These declines may reflect increased emotional awareness and critical reflection among students, leading to more nuanced perceptions of peer dynamics.

Distal Outcomes. Academic goal setting showed significant increases ($\beta = 0.07$, 95% CI [0.02, 0.12], $p < .001$), while life satisfaction remained unchanged ($\beta = –0.01$, 95% CI [–0.08, 0.05]). Variance decomposition indicated that most changes occurred at the individual student level (intraclass correlations: 0.00 at the school level, 0.08 at the classroom level, and 0.27 at the student level), underscoring the importance of student-level factors in SEL outcomes.

4.4. Gender-based differences

The only statistically significant gender-based difference emerged in the domain of emotional expression. Boys showed a greater reduction ($\Delta = 0.14$, $p < .05$), suggesting enhanced ability to manage distress when exposed to uncomfortable emotions. In contrast, girls did not exhibit significant change in this domain. Across other intrapersonal outcomes including perspective-taking, empathic concern, intrinsic prosocial motivation, positive self-compassion, and negative orientation to self, no significant gender differences were observed. These findings indicate that, overall, the SEE Learning program had broadly similar effects for boys and girls, with the exception of emotional expression, where boys appeared to benefit more in terms of reducing distress (Table 6).

4.5. Integration of qualitative and quantitative findings

Taken together, the qualitative and quantitative findings provide a complementary picture of SEE Learning's impact. Quantitative analyses revealed significant increases in perspective-taking, empathic concern,

Table 7
Alignment of qualitative and quantitative data.

Domain	Quantitative Findings (HLM / DiD)	Qualitative Findings (Teacher/Student Accounts)	Convergence / Divergence
Perspective-Taking	↑ Significant increases ($\beta = 0.06$, $p < .001$)	Teachers observed greater empathy and openness among students; students reported valuing fairness and support.	Convergence
Empathic Concern	↑ Significant increases ($\beta = 0.10$, $p < .001$)	Teachers noted improved prosocial behaviors and conflict resolution; students applied calming strategies outside class.	Convergence
Positive Self-Compassion	↑ Significant increases ($\beta = 0.11$, $p < .001$)	Students described feeling more supported and safe to share; teachers emphasized emotional regulation practices.	Convergence
Emotional Expression	↓ Significant decreases ($\beta = –0.03$, $p < .001$); boys showed greater reduction (DiD $\Delta = 0.14$, $p < .05$)	Teachers reported students adopting calming strategies more readily.	Partial convergence (gender difference unstated)
Intrinsic Prosocial Motivation	No significant change ($\beta = –0.02$, ns)	Teachers observed increased cooperation and peer support, though not always sustained outside structured activities.	Divergence
Negative Orientation to Self	↑ Significant increase ($\beta = 0.13$, $p < .001$)	Teachers noted some students became more self-critical when reflecting; younger students struggled with abstract concepts.	Convergence
Classroom Connection	↓ Significant decline ($\beta = –0.08$, $p < .001$)	Teachers reported challenges in large classes; students valued fairness but noted uneven support.	Convergence
Student Group Respect	↓ Significant decline ($\beta = –0.15$, $p < .001$)	Students described tensions in peer relationships; teachers highlighted need for stronger scaffolding.	Convergence
Academic Goal Setting	↑ Significant increases ($\beta = 0.07$, $p < .001$)	Teachers observed students setting more personal learning goals and showing motivation in class.	Convergence
Life Satisfaction	No significant change ($\beta = –0.01$, ns)	Students expressed enjoyment of activities but noted limited transfer to broader well-being.	Convergence

and positive self-compassion, which were echoed in teacher and student accounts of improved emotional regulation, prosocial behavior, and classroom relationships. At the same time, quantitative declines in classroom connection and increased negative self-orientation align with qualitative reports of challenges in large, diverse classrooms and students' struggles with abstract or written reflection tasks. Gender-based differences in emotional expression, where boys showed greater increases, were consistent with teacher observations that certain calming strategies resonated more with male students. Together, these convergences and divergences underscore the importance of integrating differentiated reflection methods, culturally responsive resources, and sustained support systems to maximize the program's effectiveness across diverse student groups (Table 7).

5. Discussion

This study provides the first large-scale evidence of SEE Learning in India, suggesting positive increases on early adolescents' social-emotional outcomes. Results align with global meta-analyses showing SEL's effectiveness in promoting well-being and prosocial behavior (Cipriano et al., 2023; Durlak et la., 2011). The integration of compassion practices appears particularly salient during early adolescence, a developmental window marked by identity formation and moral reasoning (Roeser and Pinela, 2014; Sanchis-Sanchis et al., 2020). Gender differences were modest, but consistent with prior literature suggesting girls often report higher empathy (Matthews et al., 2009; Raimundo et al., 2015). Findings also highlight the importance of contextual adaptation. SEE Learning's trauma-informed and culturally responsive design may address critiques of SEL as culturally imperialist when imported without modification (Ramirez et al., 2021).

5.1. Social and emotional outcomes and implementation dynamics

This study offers comparative insights into the implementation of SEE Learning in multilingual and resource-constrained classrooms in Maharashtra, India. Quantitative findings revealed significant increases in perspective-taking, empathic concern, self-compassion, and academic goal-setting, aligning with international evidence that compassion-based SEL programs enhance emotional regulation and prosocial behavior. At the same time, increases in negative self-orientation and declines in classroom connection highlight the complexity of SEL interventions and the need to monitor both intended and unintended effects. Qualitative data provided critical context for these dynamics. Teachers reported increased confidence in facilitation and shifts toward more student-centered pedagogy, while students demonstrated increases in emotional awareness and applied calming strategies beyond the classroom. Yet challenges such as large class sizes, linguistic diversity, and limited instructional time constrained consistency and depth of delivery. Teachers responded with adaptations, storytelling, visual aids, and role-play that enhanced cultural relevance but introduced variability across classrooms. These findings underscore the importance of flexible, context-responsive implementation while maintaining fidelity to core program principles.

5.2. Gender and student engagement

Gender analyses revealed largely comparable outcomes across boys and girls, with one notable divergence: boys showed greater increases in emotional expression, interpreted as increased tolerance for uncomfortable feelings. This suggests the program may have been particularly effective in supporting boys' emotional regulation in this domain, potentially reflecting cultural norms around emotional expression. In contrast, no significant gender differences were observed in perspective-taking, empathic concern, self-compassion, or prosocial motivation, indicating broadly similar benefits across genders. These results highlight the need for inclusive, gender-sensitive approaches to SEL that account for cultural variation in emotional socialization.

5.3. Limitations

Several limitations should be acknowledged, though they do not diminish the study's contribution to understanding school-based social and emotional interventions in constrained educational settings. The absence of a non-intervention control group limits causal attribution; however, such constraints are common in exploratory and practice-embedded educational research where randomized designs may not be feasible. Mixed-methods approaches are frequently used in these contexts to generate credible, contextually grounded insights even without full experimental control (Oranga, 2025). The study was situated within one urban region, and although this limits generalizability, the qualitative component was intentionally based on a purposeful subsample of two schools drawn from the broader participating group. Purposeful subsampling aligns with mixed-methods design principles, which emphasize contextual depth and explanatory insight in qualitative phases (Gamage, 2025; Oranga, 2025). In this design, the qualitative findings serve to illuminate quantitative patterns rather than to represent the full population. Attrition was modest and may have influenced the results. Nonetheless, triangulation across quantitative and qualitative data enhances the credibility of the findings by reducing reliance on any single source of evidence (Oranga, 2025; Pregoner, 2024). The study relied on self-report measures, and several scales demonstrated moderate internal consistency. Such reliability levels are not unusual in exploratory school-based research assessing internal psychological constructs among youth. Integration across methods helps mitigate these measurement limitations by reinforcing interpretations through complementary forms of evidence. The qualitative sample was small; however, qualitative inquiry in mixed-methods designs prioritizes contextual explanation over representativeness. Small, well-selected samples can yield meaningful insight into implementation processes, mechanisms, and participant experiences (Oranga, 2025; Pregoner, 2024). Overall, these limitations reflect common features of exploratory mixed-methods research in educational development. The integration of quantitative trends with qualitative interpretation strengthens the trustworthiness of the findings and provides a foundation for future large-scale or comparative studies.

5.4. Contributions to broader literature

This study contributes to SEL scholarship in diverse educational contexts in three ways. First, it provides one of the first mixed-methods evaluations of SEE Learning in India, suggesting both feasibility and impact in multilingual, resource-constrained classrooms. Second, it advances methodological rigor by employing hierarchical linear modeling and difference-in-differences analysis to assess program effects and gender variation. Third, it highlights the critical role of teacher facilitation and contextual adaptation, showing how educators modified delivery to accommodate linguistic diversity and developmental needs. Importantly, the study identifies both positive and unintended outcomes, underscoring the complexity of emotional development and the need for ongoing support.

5.5. Policy implications and global comparisons

The findings carry important implications for education policy in India and globally. India's National Education Policy (2020) explicitly calls for "social, emotional, and ethical development" as a pillar of holistic education, and the Supreme Court has affirmed mental health as a constitutional right. In this context, SEE Learning offers a promising framework for advancing emotional resilience and well-being in schools. Internationally, SEL has been integrated into education systems with varying success. OECD countries emphasize SEL as a core curricular component, UNESCO highlights its role in inclusion and peacebuilding,

and cross-national studies stress the need for cultural adaptation. India's policy landscape provides a unique opportunity to embed compassion-based SEL into mainstream education, but success will depend on three priorities:

- **Institutional Integration.** The observed increases in perspective-taking, empathic concern, self-compassion, and academic goal-setting suggest that embedding compassion-based SEL into national curricula could help scale these gains across schools. Institutional integration would also provide a consistent framework to address declines in classroom connection, ensuring that compassion-based principles are reinforced across subjects and grade levels rather than delivered in isolation.
- **Teacher Capacity-Building.** Teachers reported increased confidence and facilitation skills but also highlighted challenges in multilingual classrooms, large class sizes, and supporting students with limited literacy. These findings point to the need for sustained professional development that equips educators with strategies for differentiated reflection methods (e.g., visual storytelling, peer discussions) and culturally responsive pedagogy. Strengthening teacher capacity would build on the positive shifts already observed while addressing implementation constraints.
- **Sustainable Support.** While students exposed to SEE Learning showed increased emotional regulation and prosocial behavior, declines in group respect and classroom connection, alongside increased self-criticism, indicate that reinforcement possibly within the classroom and beyond the classroom might be essential. Sustainable support through parental workshops, administrative leadership, and community engagement would extend SEL practices into home and community settings, mitigating unintended effects and ensuring long-term resilience.

5.6. Conclusion

This study suggests that SEE Learning may be associated with increases in students' social-emotional competencies while also revealing challenges that must be addressed for sustainable impact. Increases in perspective-taking, empathic concern, and self-compassion reflect the program's potential to increase emotional resilience, aligning with India's broader recognition of mental health as a constitutional right. At the same time, unintended increases in self-criticism and declines in classroom connection highlight the need for structured supports and differentiated strategies to ensure inclusivity and equity. By integrating compassion-based SEL into policy frameworks, investing in teacher training, and monitoring both positive and adverse outcomes, India can advance a holistic vision of education that supports resilience, equity, and well-being.

Debates around Social and Emotional Learning (SEL) in India can no longer remain confined to questions of curriculum design. The central policy issue is structural: whether SEL should remain an imported, program-level intervention or be integrated into school systems in ways that reflect India's local cultural, relational, and institutional realities. UNESCO MGIEP's India-based guidelines highlight two persistent challenges. First, the tendency to treat SEL as a discrete curriculum rather than a whole-school ecological approach, and second, the insufficient cultural adaptation of SEL frameworks to local norms and social dynamics (UNESCO MGIEP, 2022). These concerns represent structural barriers. Global evidence shows that SEL programs developed in Western contexts do not always transfer seamlessly across countries unless they are aligned with local cultural expectations and school climates (Taylor et al., 2017; Humphrey and Wigelsworth, 2016). When adaptation is shallow, impact is questionable.

UNESCO's recent SEL policy guidance further underscores this point. SEL is most effective when embedded into the emotional and relational fabric of schools, not delivered as an isolated program. When embedded, SEL has been found to improve well-being, academic attainment, and reductions in bullying and distress (UNESCO, 2024). These findings have direct implications for India.

In India, where school environments are often shaped by competitive academic pressures and hierarchical teacher–student relationships, this raises a policy debate about whether system-level conditions undermine SEL gains when classroom messages about empathy and well-being clash with prevailing norms of performance, comparison, and discipline. The issue is not whether SEL "works" in principle. The issue is whether system-level conditions support or erode the relational competencies being taught.

This creates a clear policy choice. India can continue implementing SEL as a program layered onto unchanged institutional cultures, or it can pursue ecosystemic reform that aligns pedagogy, school climate, teacher practices, and assessment structures with relational values. UNESCO's ecosystemic and culturally responsive framework offers a pathway for the latter (UNESCO, 2024; UNESCO MGIEP, 2022).

Compassion-based SEL may offer a more culturally resonant mechanism for India, where relational ethics, care, and interdependence are longstanding sociocultural values. By demonstrating that SEL has greater impact when school climate aligns with the relational skills taught in the curriculum, the study reinforces the policy argument that India's SEL implementation must move beyond add-on programs toward systemic cultural alignment, an approach consistent with UNESCO's global and India-based recommendations. Without this alignment, gains are fragile. With it, SEL becomes not an intervention, but an organizing principle of schooling.

Future research should expand to larger and more diverse samples, incorporate appropriate comparison or control groups, and examine longer-term outcomes. Such designs would allow researchers to move beyond descriptive and exploratory evidence to assess whether SEL implementation is associated with sustained improvements in student well-being and, over time, may support more rigorous examination of potential causal and developmental effects.

CRediT authorship contribution statement

Nishant Lodha: Visualization, Formal analysis. **Tyralynn Frazier:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Tenzin Sonam:** Visualization, Formal analysis, Data curation. **Kavita Anand:** Writing – review & editing, Writing – original draft, Supervision, Formal analysis. **Rinku Gala:** Supervision, Investigation, Formal analysis, Data curation. **Viveki Pasta:** Writing – original draft, Visualization, Supervision, Project administration, Formal analysis, Data curation.

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Declaration of Competing Interest

The authors declare no competing interests. The SEE Learning program was developed at Emory University. Although members of the research team work at Emory University, their participation did not influence the study's outcomes.

References

Battistich, V., Solomon, D., Watson, M., Schaps, E., 1997. Caring school communities. Educ. Psychol. 32 (3), 137–151.

Birnie, K., Speca, M., Carlson, L.E., 2010. Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR). Stress Health 26 (5), 359–371. https://doi.org/10.1002/smi.1305.

Brody, L.R., 1985. Gender differences in emotional development: a review of theories and research. J. Personal. 53 (2), 102–149. https://doi.org/10.1111/j.1467-6494.1985.tb00361.x.

Cipriano, C., Strambler, M.J., Naples, L.H., Ha, C., Kirk, M., Wood, M., Sehgal, K., Durlak, J.A., 2023. The state of evidence for social and emotional learning: A contemporary meta-analysis of universal school-based SEL interventions. Child Dev. 94 (5), 1181–1204. https://doi.org/10.1111/cdev.13968.

Cochran, L.M., Peters, M.P., 2023. Supporting teachers from the beginning by preparing the whole educator: pre-service teacher social and emotional learning, mindfulness, and efficacy. AILACTE J. 20, 53–85.

Coelho, V., Sousa, V., Raimundo, R., Figueira, A., 2017. The impact of a Portuguese middle school social–emotional learning program. Health promot. int. 32 (2), 292–300.

Davis, M.H., 1983. Measuring individual differences in empathy: evidence for a multidimensional approach. J. Personal. Soc. Psychol. 44 (1), 113–126. https://doi.org/10.1037/0022-3514.44.1.113.

Durlak, J.A., Weissberg, R.P., Dymnicki, A.B., Taylor, R.D., Schellinger, K.B., 2011. The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. Child Dev. 82 (1). https://doi.org/10.1111/j.1467-8624.2010.01564.x.

Fosco, S.L.D, Schussler, D.L., 2025. Unpacking the Black Box: Exploring Differences in Practices, Skills, and Knowledge Taught in School-Based Mindfulness Programs. Prev. Sci. 26 (5), 827–838.

Frazier, T., Roeser, R.W., Schonert-Reichl, K.A., Negi, L.T., 2025a. Evaluating the feasibility and preliminary impact of the Social, Emotional, and Ethical (SEE) Learning program: a compassion-based social and emotional learning program for elementary school children. PLoS One 20 (8), e0328519. https://doi.org/10.1371/journal.pone.0328519.

Frazier, T., Rosenstein, S., Elkoin, O., Marushchenko, O., Rudzynska, N., Drozhzhina, T., 2025b. Voices of teachers: a qualitative analysis of the feasibility and qualitative perceptions of impact of SEE Learning on the well-being of Ukrainian classrooms before and during war. Confl. Health 19 (1), 47. https://doi.org/10.1186/s13031-025-00688-8.

Gadermann, A.M., Schonert-Reichl, K.A., Zumbo, B.D., 2010. Investigating validity evidence of the satisfaction with life scale adapted for children. Soc. Indic. Res. 96 (2), 229–247.

Gamage, A.N.K.K., 2025. A comparative analysis of qualitative and mixed methods research: Strengths, limitations, and practical applications. World J. Adv. Res. Rev. 25 (3), 2040–2046.

Government of India, Ministry of Education. (2020). National Education Policy 2020. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.

Government of India. (2023). The Digital Personal Data Protection Act, 2023 (Act No. 22 of 2023). Ministry of Law and Justice. https://www.indiacode.nic.in/bitstream/123456789/22037/1/a2023-22.pdf.

Hildebrandt, L.K., McCall, C., Singer, T., 2017. Differential effects of attention-, compassion-, and socio-cognitively based mental practices on self-reports of mindfulness and compassion. Mindfulness 8, 1489–1510. https://doi.org/10.1007/s12671-017-0716-z.

Humphrey, N., Wigelsworth, M., 2016. Making the case for universal school-based mental health screening. Emot. Behav. Difficulties 21 (1), 22–42.

Information Matters. (2023, October20 18). The dark side of India's education system: The silent suffering of its youth. Information Matters. ⟨https://informationmatters.org/2023/10/the-dark-side-of-indias-education-system-the-silent-suffering-of-its-youth/⟩.

Kemeny, M.E., Foltz, C., Cavanagh, J.F., Cullen, M., Giese-Davis, J., Jennings, P., et al., 2012. Contemplative/emotion training reduces negative emotional behavior and promotes prosocial responses. Emotion 12 (2), 338–350. https://doi.org/10.1037/a0026118.

Kirby, J.N., Petrocchi, N., 2023. Compassion focused therapy: what it is, what it targets, and the evidence. In: Finlay-Jones, A., Bluth, K., Neff, K. (Eds.), Handbook of Self-Compassion. Springer International Publishing, pp. 417–432. https://doi.org/10.1007/978-3-031-22348-8_23.

Kirby, J.N., Sherwell, C., Lynn, S., Moloney-Gibb, D., 2023. Compassion as a framework for creating individual and group-level wellbeing in the classroom: new directions. J. Psychol. Couns. Sch. 33 (1), 2–12. https://doi.org/10.1017/jgc.2023.5.

Mahoney, J.L., Durlak, J.A., Weissberg, R.P., 2018. An Update on Social and Emotional Learning Outcome Research. Phi Delta Kappan 100 (4), 18–23.

Mangrio, E., Pettersson, A., Ivarsson, A., Ryk, C., Strömwall, L.A., Kostenius, C., 2024. SEL programs promote students' wellbeing and relationships: teachers' experiences in a qualitative evidence synthesis. Cogent Psychol. 11 (1). https://doi.org/10.1080/23311908.2024.2435097.

Maratos, F.A., Montague, J., Ashra, H., Welford, M., Wood, W., Barnes, C., Sheffield, D., Gilbert, P., 2019. Evaluation of a Compassionate Mind Training Intervention with School Teachers and Support Staff. Mindfulness 10 (11), 2245–2258. https://doi.org/10.1007/s12671-019-01185-9.

Maratos, F.A., Wood, W., Cahill, R., Tronco Hernández, Y.A., Matos, M., Gilbert, P., 2024. A mixed-methods study of Compassionate Mind Training for Pupils (CMT-Pupils) as a school-based wellbeing intervention. Mindfulness 15 (2), 459–478. https://doi.org/10.1007/s12671-024-02303-y.

Matos, M., Albuquerque, I., Galhardo, A., Cunha, M., Pedroso Lima, M., Palmeira, L., Petrocchi, N., McEwan, K., Maratos, F.A., Gilbert, P., 2022. Nurturing compassion in schools: A randomized controlled trial of the effectiveness of a Compassionate Mind Training program for teachers. PLoS One 17 (3), e0263480.

Matthews, J.S., Ponitz, C.C., Morrison, F.J., 2009. Early gender differences in self-regulation and academic achievement. J. Educ. Psychol. 101 (3), 689–704. https://doi.org/10.1037/a0014240.

Midgley, C., Maehr, M.L., Hruda, L.Z., Anderman, E., Anderman, L., Freeman, K.E., Urdan, T., 2000. Manual for the Patterns of Adaptive Learning Scales. University of Michigan, Ann Arbor, pp. 734–763.

Neelakantan, M., Kumar, A.P., Sadana, A., Alex, S.M., 2024. What has the pandemic aggravated? Views of school counsellors in India on the need for socio-emotional learning. J. Psychol. Couns. Sch. https://doi.org/10.1177/20556365241273509.

Oranga, J., 2025. Mixed Methods Research: Merits, Applications and Challenges. Kisii University.

Penza-Clyve, S., Zeman, J., 2002. Initial validation of the emotion expression scale for children (EESC). J. Clin. Child Adolesc. Psychol. 31 (4), 540–547. https://doi.org/10.1207/S15374424JCCP3104_12.

Pienyu, K., Margaret, B., D'Souza, A., 2024. Academic stress, perceived parental pressure, and anxiety related to competitive entrance examinations and the general well-being among adolescents: A cross-sectional survey from Karnataka, India. J. Educ. Health Promot. 13, 474. https://doi.org/10.4103/jehp.jehp_2094_23.

Piramal Foundation. (2023). Scaling SEE Learning in India: Case study. Piramal Foundation. ⟨https://piramalfoundation.org/⟩.

Pregoner, J.D., 2024. Research approaches in education: a comparison of quantitative, qualitative and mixed methods. IMCC J. Sci. 4 (2), 31–36.

Raimundo, R., Marques-Pinto, A., Lima, M.L., 2013. The effects of a social-emotional learning program on elementary school children: the role of pupils' characteristics. Psychol. Sch. 50 (2), 165–180. https://doi.org/10.1002/pits.21667.

Ramirez, T., Brush, K., Raisch, N., Bailey, R., Jones, S.M., 2021. Equity in social emotional learning programs: A content analysis of equitable practices in PreK-5 SEL Programs. In Frontiers in education, 6. Frontiers Media SA, p. 679467.

Rath, S., 2025. The imperative of social, emotional, and ethical (SEE) learning in Kandhamal district classrooms: a contextualized pedagogical framework. Int. J. Multidiscip. Res. 7 (5), 1–7. https://doi.org/10.36948/ijfmr.2025.v07i05.57692.

Roeser, R.W., Pinela, C., 2014. Mindfulness and compassion training in adolescence: A developmental contemplative science perspective. N. Dir. Youth Dev. 2014 (142), 9–30. https://doi.org/10.1002/yd.20094.

Sahi, R.S., Eisenberger, N.I., Silvers, J.A., 2023. Peer facilitation of emotion regulation in adolescence (Article). Dev. Cogn. Neurosci. 62, 101262. https://doi.org/10.1016/j.dcn.2023.101262.

Sanchis-Sanchis, A., Grau, M.D., Moliner, A.R., Morales-Murillo, C.P., 2020. Gender differences in emotional regulation in children and adolescents: a systematic review. Int. J. Environ. Res. Public Health 17 (22), 1–19. https://doi.org/10.3390/ijerph17228417.

Schonert-Reichl, K.A., 2019. Advancements in the landscape of social and emotional learning and emerging topics on the horizon. Educ. Psychol. 54 (3), 137–146. https://doi.org/10.1080/00461520.2019.1633925.

Schonert-Reichl, K.A., Oberle, E., Lawlor, M.S., Abbott, D., Thomson, K., Oberlander, T. F., Diamond, A., 2015. Enhancing cognitive and social-emotional development through a simple-to-administer mindfulness-based school program for elementary school children: a randomized controlled trial. Dev. Psychol. 51 (1), 52–66. https://doi.org/10.1037/a0038454.

Sharma, M., Chheda, S., Piramal, R., Bhatia, N., Frazier, T., Singh, N.C., 2022. The Social and Emotional Learning and Orientation Scale (SELOS): Development and validation of a brief measure in Hindi. J. Psychoeduc. Assess. 40 (5), 571–591. https://doi.org/10.1177/07342829221075517.

Stich, V., Solomon, D., Kim, D., Watson, M., Schaps, E., 1995. Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. Am Educ Res J. 32 (3), 627–658.

Sutton, E., Schonert-Reichl, K.A., Wu, A.D., Lawlor, M.S., 2017. Evaluating the reliability and validity of the Self-Compassion Scale Short Form adapted for children ages 8–12. Child Indic. Res. 11 (4), 1217–1236. https://doi.org/10.1007/s12187-017-9470-y.

Taylor, R.D., Oberle, E., Durlak, J.A., Weissberg, R.P., 2017. Promoting Positive Youth Development Through School-Based Social and Emotional Learning Interventions: A Meta-Analysis of Follow-Up Effects. Child Dev. 88 (4), 1156–1171. https://doi.org/10.1111/cdev.12864.

Tirch, D., 2010. Mindfulness as a context for the cultivation of compassion. Int. J. Cogn. Ther. 3 (2), 113–123. https://doi.org/10.1521/ijct.2010.3.2.113.

UNESCO MGIEP. (2022). Guidelines for implementing social and emotional learning in schools. UNESCO MGIEP. https://doi.org/10.56383/JAKO4884·

UNESCO. (2024). UNESCO Framework for Culture and Arts Education. UNESCO.

Weng, H.Y., Fox, A.S., Shackman, A.J., Stodola, D.E., Caldwell, J.Z.K., Olson, M.C., Rogers, G.M., Davidson, R.J., 2013. Compassion training alters altruism and neural responses to suffering. Psychol. Sci. 24 (7), 1171–1180. https://doi.org/10.1177/0956797612469537.