sustainability

MDPI

Article

Modeling the Effects of Teacher Resilience and Self-Efficacy on Prosocialness: Implications for Sustainable Education

Manuel Mieres-Chacaltana [1], Sonia Salvo-Garrido [2,*] and Sergio Dominguez-Lara [3]

[1] Departamento de Diversidad y Educación Intercultural, Universidad Católica de Temuco, Temuco 4780000, Chile; mieres@uct.cl
[2] Departamento de Matemática y Estadística, Universidad de La Frontera, Temuco 4780000, Chile
[3] Instituto de Investigación FCCTP, Universidad de San Martín de Porres, Lima 15048, Peru; sdominguezl@usmp.pe
* Correspondence: sonia.salvo@ufrontera.cl

Abstract: Education is essential for sustainable development. However, the social and emotional dimensions of learning—fundamental for building resilience and fostering prosocial behavior—are often overlooked. This study aims to examine the direct and indirect effects of teacher resilience on prosocial behavior and feelings, mediated by self-efficacy beliefs, in a sample of Chilean elementary school teachers (N = 1426; average age = 41.5; 77.3% women). The proposed model fit the data well (χ^2 = 7337.051, CFI = 0.956, TLI = 0.954, RMSEA = 0.054, SRMR = 0.051). Results showed that, as modeled, resilience had significant direct and indirect positive effects on prosocialness, mediated by self-efficacy. These findings suggest that strengthening resilience and self-efficacy in teachers is a key strategy for advancing socioemotional competencies and building inclusive, collaborative, and sustainable educational environments aligned with the goals of Education for Sustainable Development.

Keywords: sustainable education; prosocial behavior; prosocial actions; prosocial feelings; self-efficacy; resilience; teachers; inclusive education; cooperative learning

Academic Editors: José Antonio Prieto-Saborit and David Méndez-Alonso

Received: 18 March 2025
Revised: 22 April 2025
Accepted: 23 April 2025
Published: 25 April 2025

Citation: Mieres-Chacaltana, M.; Salvo-Garrido, S.; Dominguez-Lara, S. Modeling the Effects of Teacher Resilience and Self-Efficacy on Prosocialness: Implications for Sustainable Education. *Sustainability* **2025**, *17*, 3874. https://doi.org/10.3390/su17093874

1. Introduction

Humanity is currently faced with the unavoidable task of addressing an emergency marked by several socio-environmental problems that have seriously endangered life on Earth [1]. Mindful of this, in 2015, the United Nations implemented a "set of universal and transformative goals and targets" to steer sustainable development [2] (p. 4). The perspective adopted in its formulation has sought to gauge the scope, scale, and complexity of the emergency following prior research recommendations to understand environmental problems as an intricate system [3] that encompasses social, economic, environmental, health, and ethical factors [4]. Within this framework, education holds a vital role in reaching sustainability goals [5]. Consequently, the focus of the United Nations in this area has been on "providing quality, inclusive, and equitable education at all levels" [2] (p. 7). Yet, UNESCO has indicated that this target exhibits little explicit concern [6]. More specifically, the integration of the social and affective dimensions of learning is notably absent, particularly regarding students' affect or emotional states [6] (p. 281). This touches on the purpose of education in the contemporary age, a matter that has been insufficiently addressed in discussions on learning in the 21st century [7].

This concern is significant, as sustainability requires a holistic perspective that integrates critical relational and socioemotional dimensions to address the complexity of

contemporary challenges [8]. People require security and connection with others; when applied to the educational environment, the satisfaction of these needs provides the neurological, emotional, and cognitive stability essential to student learning [9]. This means that, in addition to curricular reform, it is necessary to question the cultural and theoretical assumptions that underlie [10]. These foundations are particularly relevant when considering the vision of education for 2050, which emphasizes the role of schools in promoting social cohesion and sustainability [11]. One of the key elements of this vision is the development of prosocial behavior, defined as voluntary actions and emotional dispositions that benefit others [12].

Prosocialness contributes to the creation of supportive, inclusive, and sustainable learning environments. It improves classroom climate [13], fosters empathy and self-esteem [14,15], enhances motivation and academic performance [16,17], and reduces violence and exclusion [18,19]. Moreover, prosocial behaviors help address social inequality and foster inclusion, especially in culturally diverse or vulnerable contexts [20,21]. Given this, schools play a fundamental role in nurturing prosocial values, not only through instruction but also through lived experiences and institutional culture [22,23]. These behaviors, based on mutual respect, reciprocity, and shared responsibility, reinforce the democratic function of education [24]. Thus, sustainability education must promote emotional competencies such as empathy, compassion, and solidarity [25] while fostering cooperative and inclusive learning environments [26].

Teachers play a pivotal role in this process. Their practices, values, and emotions are decisive in shaping classroom climates and school communities. Teachers' daily work involves helping [27], sharing [28], and caring [29]. The same applies to expressions of empathy [30] and prosocial feeling, which for Caprara et al. [31], is a component of prosocialness in adulthood. These characteristics are associated with their own well-being [32,33], professional commitment [34], job satisfaction [35], and professional development [36]. However, teaching is a demanding profession, often marked by psychosocial risks [37,38], which highlights the importance of strengthening internal resources such as resilience—understood as the capacity to adapt positively to adversity [39,40]—and a personal sense of self-efficacy [41].

Resilience enables teachers to regulate their emotions and respond constructively to challenging conditions [42,43], an essential requirement in the current context of instability [44]. Moreover, resilient individuals often show higher levels of prosocial behavior [45,46], and resilience has been associated with improved inclusion and classroom climate [47,48], as well as with teachers' well-being [49,50]. From a systemic approach, it has been proposed that educational resilience is nurtured not only individually but also through institutional and relational supports [51,52]. Such supports include meaningful interpersonal relationships, peer collaboration, and safe school environments [49,53]. In this framework, the development of teacher resilience must be accompanied by strong beliefs regarding self-efficacy.

Self-efficacy—understood as beliefs in one's capacity to organize and execute courses of action required to manage prospective situations [54]—is a key construct in educational psychology. It influences motivation, persistence, goal-setting, and emotional regulation [54–56]. In teachers, it correlates with classroom management, instructional practices, and student outcomes [57], and it is strengthened through mastery experiences, vicarious learning, and social persuasion [58,59]. Additionally, it has been linked to prosociality [60,61], resilience [62], and inclusive practices [63]. A recent study with Chilean teachers showed that resilience predicts self-efficacy, and both predict prosocial behavior [41], suggesting the existence of a mediating relationship between these constructs.

Based on these theoretical foundations, this study aimed to model the direct and indirect effects of resilience on prosocial behavior and feelings through the mediating role of teacher self-efficacy. This approach places teachers at the center of the analysis, not only as transmitters of prosocial values but as individuals whose own emotional resources shape the possibility of building inclusive and sustainable classrooms. Accordingly, the proposed model (Figure 1) tested two hypotheses: H1, that teacher resilience has a direct and positive effect on prosocial behavior and prosocial feelings; and H2, that teacher self-efficacy beliefs mediate the relationship between resilience and both components of prosocialness. These hypotheses also guided the research questions: (1) how does teacher resilience influence prosocial actions and feelings? and (2) to what extent does teacher self-efficacy mediate this relationship?

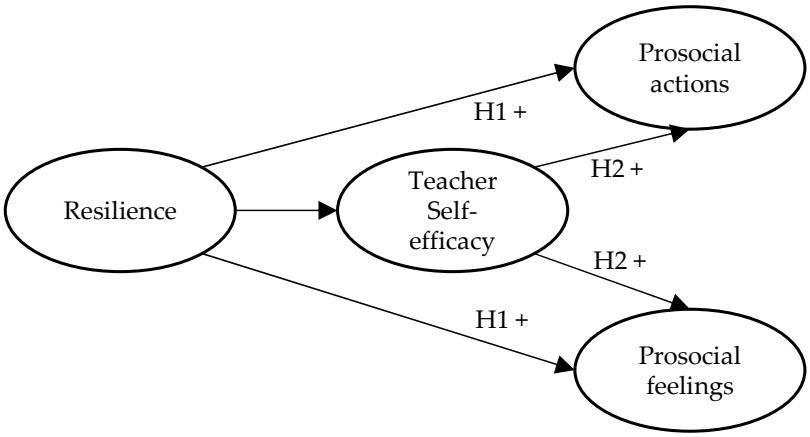

Figure 1. Theoretical model of influence pathways of resilience and self-efficacy beliefs on prosocial actions and prosocial feelings.

2. Materials and Methods

2.1. Participants

The study population included teachers working in primary education at public and subsidized private schools in Chile (N = 85,298 teachers). A random sample was selected using stratification based on region, residence (urban or rural), type of school, and gender. The sampling method applied was a stratified multistage probability approach, maintaining a 95% confidence level, a 2.5% margin of error, and a variance of p = q = 0.5 [64].

The final sample comprised 1426 teachers, representing 1.67% of the total population, with ages ranging from 21 to 70 years (M = 41.5 years; SD = 10.8). Of these participants, 1103 (77.3%) were women, and 323 (22.7%) were men. The majority of schools (81.2%) were located in urban areas, with 83.6% being public institutions and 16.4% subsidized private schools. Teaching experience among participants ranged from less than one year to 48 years, with an average of 14.2 years (SD = 10.1).

Importantly, all sample participants were classroom teachers, not school administrators, ensuring the results reflect insights from educators who maintain direct and consistent interactions with students in the classroom environment.

2.2. Instruments and Variables

To measure the study variables, three of the following self-report instruments previously validated in the Chilean context were used:

Resilience was evaluated using the abbreviated version of the SV-RES60 scale [65], consisting of 15 items grouped into three components, namely, “I am”, “I have”, and “I can”, based on Grotberg’s conceptual model [66]. Items were rated on a 5-point Likert scale. This version has shown excellent psychometric properties in studies with Chilean adults,

including schoolteachers [67]. Internal consistency in the present study was high ($\alpha = 0.927$; $\omega = 0.958$).

Teacher self-efficacy was assessed using the Teachers' Sense of Efficacy Scale (TSES) [68], which measures teachers' perceived efficacy in the three following domains: student engagement, instructional strategies, and classroom management. The one-factor version validated in Chile [69] was used, with 12 items rated on a 5-point Likert scale. It demonstrated strong reliability in this study ($\alpha = 0.971$; $\omega = 0.974$).

Prosocialness was measured using the Adult Prosocialness Behavior Scale (APBS) [31], which was adapted and validated in the Chilean context [70,71]. The 16-item version includes two subdimensions analyzed in this study: prosocial actions (e.g., helping, sharing, caring) and prosocial feelings (e.g., empathic concern, emotional sensitivity). Items were rated on a 5-point Likert scale ranging from "never/almost never" to "always/almost always". In this study, the prosocial actions subscale showed good internal consistency ($\alpha = 0.906$) and high construct reliability ($\omega = 0.940$), while the prosocial feelings subscale showed adequate internal consistency ($\alpha = 0.804$) and construct reliability ($\omega = 0.864$).

2.3. Procedure

The study was approved by the Scientific Ethics Committee of Universidad de La Frontera (Protocol No. 053_21) and conducted in accordance with the ethical principles of the Declaration of Helsinki. School authorities were contacted through formal institutional channels. Once approval was granted, the research team coordinated the distribution of the survey invitation to teachers in public and subsidized private schools across various regions of the country.

Participants were informed of the study objectives and conditions of voluntary participation. Informed consent was requested digitally before accessing the instruments through a secure online platform QuestionPro, which ensured privacy and controlled access. Teachers completed the instruments independently, without time constraints and outside their working hours.

All participants were assured that their responses would remain anonymous and confidential. Although the use of self-report measures may involve potential social desirability bias, this risk was addressed through the following strategies: clarity of purpose, emphasis on voluntariness, assurance of confidentiality, and formal ethical approval [72,73]. The design also avoided any intervention by school authorities in the completion process, reducing possible pressure or influence on participants.

2.4. Analytical Approach

A structural equation modeling (SEM) approach was used to test the proposed model, with analysis conducted in Mplus version 8.4 [74]. This method allows for the analysis of complex relationships between observed and latent variables and is particularly suited to examining mediation effects between constructs.

Given that the study variables were measured on Likert-type ordinal scales, the Weighted Least Squares Mean and Variance (WLSMV) adjusted estimator was used. This estimator is recommended when the assumption of multivariate normality is not met, and it is robust for categorical or ordinal data [75]. Prior to the main analysis, the data were evaluated for univariate normality based on skewness and kurtosis, using thresholds of <2 and <7, respectively [76].

To assess the model's fit, the following indices were considered: the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI), with values greater than or equal to 0.90 considered acceptable; and the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR), with values less than or equal to 0.08 indicating good fit [77–79]. The inclusion of SRMR was especially relevant due to

the ordinal nature of the indicators used in the model [77]. The analysis also included the estimation of direct and indirect effects between the variables, following the hypothesized mediation structure presented in Figure 1.

3. Results

Table 1 presents the descriptive statistics for the items grouped by construct. Overall, the average scores were high across all variables: resilience (M = 4.374, SD = 0.588), self-efficacy (M = 4.070, SD = 0.650), prosocial actions (M = 4.173, SD = 0.624), and prosocial feelings (M = 4.104, SD = 0.710). The skewness and kurtosis values were within acceptable ranges, supporting the assumption of univariate normality.

Table 1. Descriptive statistics organized by scale items.

Scale	Min	Max	M	SD	g_1	g_2
Resilience	1	5	4.374	0.588	−2.078	7.290
Self-Efficacy	1	5	4.070	0.650	−0.621	0.151
Prosocial actions	1	5	4.173	0.624	−1.288	2.771
Prosocial feelings	1	5	4.104	0.710	−0.996	1.219

Notes: Min (minimum), Max (maximum), mean (M), standard deviation (SD), skewness (g_1), kurtosis (g_2).

The structural equation model showed a good fit to the data: $\chi^2(1424) = 7337.051$, $p < 0.001$; $\chi^2/df = 5.152$; CFI = 0.956; TLI = 0.954; RMSEA = 0.054, 90% CI [0.053–0.055]; SRMR = 0.051. All factor loadings were statistically significant and positive, confirming the adequacy of the measurement model (Table 2). The model explained a substantial proportion of variance in the outcome variables: 23% for prosocial actions, 20.6% for prosocial feelings, and 12% for teacher self-efficacy (all $p < 0.0001$).

Table 2. Standardized factor loadings of observed variables onto latent constructs.

Latent Construct	Observed Variable	Factor Loading	Latent Construct	Observed Variable	Factor Loading
Resilience	Item 1	0.797	Self-Efficacy	Item 1	0.734
	Item 2	0.707		Item 2	0.737
	Item 3	0.794		Item 3	0.784
	Item 4	0.761		Item 4	0.856
	Item 5	0.789		Item 5	0.851
	Item 21	0.745		Item 6	0.878
	Item 22	0.684		Item 7	0.813
	Item 23	0.794		Item 8	0.856
	Item 24	0.817		Item 9	0.889
	Item 25	0.861		Item 10	0.873
	Item 41	0.699		Item 11	0.860
	Item 42	0.786		Item 12	0.839
	Item 43	0.699		Item 13	0.855
	Item 44	0.806		Item 14	0.837
	Item 45	0.865		Item 15	0.845
Prosocial actions	Item 1	0.756		Item 16	0.885
	Item 2	0.731		Item 17	0.852
	Item 3	0.822		Item 18	0.805
	Item 4	0.690		Item 19	0.802
	Item 6	0.781		Item 20	0.845
	Item 7	0.758		Item 21	0.814
	Item 9	0.816		Item 22	0.732
	Item 10	0.771		Item 23	0.863
	Item 11	0.529		Item 24	0.856
	Item 13	0.853	Prosocial feelings	Item 5	0.865
	Item 14	0.740		Item 8	0.700
	Item 15	0.756		Item 12	0.816
				Item 16	0.745

Figure 2 displays the standardized path coefficients of the SEM. As hypothesized, resilience was a significant positive predictor of both prosocial actions (β = 0.28, $p < 0.001$) and prosocial feelings (β = 0.25, $p < 0.001$), providing support for Hypothesis 1. Moreover, resilience also had a significant indirect effect on both dimensions of prosocialness via teacher self-efficacy beliefs (Hypothesis 2).

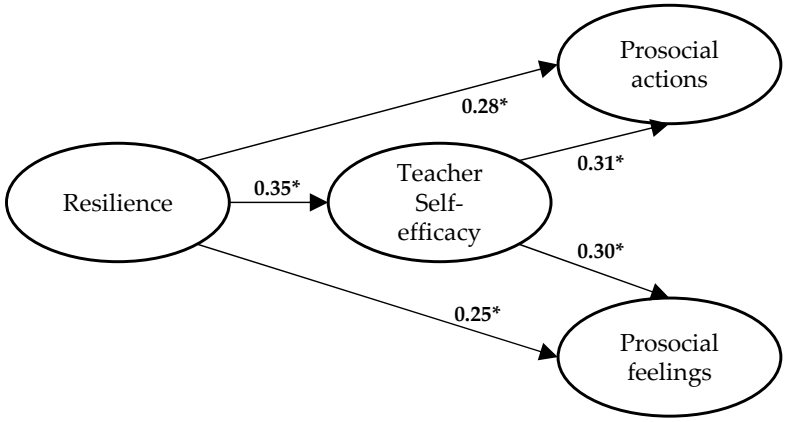

Figure 2. Empirical paths of influence of resilience and self-efficacy beliefs on prosocial actions and prosocial feelings. Significant paths are indicated with asterisks, * $p < 0.001$.

Teacher self-efficacy, in turn, had direct positive effects on both prosocial actions (β = 0.31, $p < 0.001$) and prosocial feelings (β = 0.30, $p < 0.001$). These results are summarized in Table 3, which presents the direct, indirect, and total effects for each path.

Table 3. Standardized direct, indirect, and total effects of the resilience and teacher self-efficacy on prosocial behavior.

	Prosocial Actions			**Prosocial Feelings**		
	Direct	Indirect	Total	Direct	Indirect	Total
Resilience	0.28 *	0.11 *	0.39 *	0.25 *	0.11 *	0.36 *
Teacher self-efficacy	0.31 *	-	0.31 *	0.30 *	-	

* $p < 0.05$.

4. Discussion

The present study aimed to assess the impact of resilience on prosocialness, considering teacher self-efficacy beliefs as a mediating variable in a sample of Chilean primary school teachers. This objective responds to the need for evidence-based approaches that support the inclusion of socioemotional education as a central component of education for sustainable development [7,9,24,25]. Given the complexity and global nature of environmental challenges [1], education is considered a key factor in transforming the prevailing cultural and economic paradigms toward sustainability [2–5,10]. However, the persistent lack of attention to the social and emotional dimensions of learning casts doubt on the effectiveness of sustainability education as it is currently conceived [6].

The study's findings confirm the hypothesized relationship between resilience and prosocialness. The direct effects of resilience on prosocial actions (β = 0.28; $p < 0.001$) and prosocial feelings (β = 0.25; $p < 0.001$) support the theoretical association between these constructs [40,41,65]. According to this perspective, resilience is not merely a personal trait but a developmental process rooted in external support systems, such as role models, trust-based relationships, and contextual stability [66]. These supports contribute to the internalization of identity and capabilities [40,66], enabling individuals to engage in prosocial behaviors such as empathy, altruism, and emotional expression [65,66]. These results are

also consistent with previous empirical studies confirming the positive association between resilience and prosocial behavior [41,45,46].

Secondly, the findings have important educational implications. Human beings are not autonomous entities isolated from their surroundings; rather, the values that guide behavior are shaped through dynamic social processes [54,58]. In this sense, prosocialness and resilience are not mutually exclusive but mutually reinforcing. When education promotes cooperative values and shared responsibility, it facilitates the development of both constructs. This dual strengthening is particularly relevant given the current efforts to rethink primary and secondary education to meet the demands of sustainable development [2,6,10]. Such transformation requires a redefinition of educational purposes [7], with a renewed focus on fostering resilience [44], inclusion [9,21,44,63], and collaboration [34,35].

From this perspective, the present results align with proposals that emphasize institutional and collective dimensions as essential to strengthening resilience [51,52], rather than focusing solely on individual traits. Interpreting the findings this way brings two considerations to light. First, overemphasizing personal resilience risks placing the burden of structural shortcomings on teachers [52]. Second, in the context of sustainable development goals, which call for an integrated relationship between ecology and culture, a systemic approach is essential [3,4,22]. This implies that educational policies should recognize the school not only as a space for instruction, but as a social and cultural institution with the power to shape communal values and prosocial behavior.

Thirdly, the study highlights the mediating role of teacher self-efficacy in the relationship between resilience and prosocial actions and feelings. The positive effect of resilience on self-efficacy ($\beta = 0.35$; $p < 0.001$) is consistent with prior studies that suggest resilience acts as a psychological buffer in the face of adversity [40,42,43], reinforcing teachers' perceptions of their ability to manage challenging situations [62]. From an educational standpoint, these findings support the importance of creating professional contexts that promote teachers' confidence in their own capabilities. Doing so not only protects them from psychosocial risks associated with teaching [37,38], but also strengthens socioemotional competencies aligned with the goals of sustainability education [6,8]. In this regard, investing in the quality of teacher training and support mechanisms is essential for enhancing both emotional resilience and instructional effectiveness [6,49,53].

A fourth relevant finding refers to the effect of teacher self-efficacy on prosocialness. The data confirm that higher levels of self-efficacy predict greater prosocial actions ($\beta = 0.31$; $p < 0.001$) and prosocial feelings ($\beta = 0.30$; $p < 0.001$). These results align with Bandura's conceptualization of self-efficacy as the most powerful mechanism of human agency [56,57]. When interpreted in the context of teaching, this construct is particularly relevant, as it connects the perceived ability to act with the emotional and behavioral demands placed on educators. Research has shown that teacher efficacy in areas such as instructional strategies, classroom management, and student engagement [68] is positively related to the expression of prosocial behaviors, including helping [27], sharing [28], caring [29], and demonstrating empathy [30]. Nevertheless, aspects of teacher–student interaction remain understudied, particularly those related to emotional dynamics in classroom management [55]. This gap limits the implementation of collaborative teaching methodologies needed to foster inclusive and effective educational experiences. Future studies should address how classroom interactions, student autonomy, and peer collaboration contribute to the development of a prosocial climate [23].

Fifth, the emphasis on prosocial behavior provides relevant insights for educational policy, particularly in relation to schools' contribution to sustainable development. Promoting prosocialness at the institutional level not only benefits students [13–19] and teachers [32–36], but also extends its impact to the broader society [20]. The school, as a socializ-

ing agent, is in a unique position to shape communal values and interpersonal dynamics through shared experiences and ethical guidance. In this regard, the link between lived social experiences and value formation becomes essential. While not necessarily causal, this relationship highlights the need to consider whether collective experiences in schools are conducive to prosocial priorities. Addressing this question invites us to explore the ethical and emotional infrastructure of school life. Institutional frameworks should aim to cultivate critical nodes of social-emotional learning—such as role modeling, vicarious learning, and cooperative practices—that foster sustainable, inclusive, and emotionally responsive environments.

Sixth, this study presents several limitations that should be acknowledged. First, the use of self-report instruments may have introduced bias related to memory and social desirability, despite assurances of anonymity [72,73]. Although these data provide valuable insights, future research should complement them with multimethod approaches to strengthen construct validity and triangulate findings [20]. Second, the cross-sectional design prevents drawing causal conclusions; while the model proposes directional paths, it is possible that prosocialness also influences resilience, as suggested in the discussion. Third, this study focused on elementary school teachers in Chile, which defines the scope and population to which the findings can be directly applied. While this was a deliberate design decision aligned with the research objectives, future studies could examine whether similar patterns emerge across other educational levels or national contexts. Fourth, gender was considered only as a dichotomous variable. Future studies should explore the expression of prosocialness across diverse gender identities and how these intersect with classroom practices. Finally, it was not feasible to perform invariance analyses by years of teaching experience due to the absence of an objective criterion to define meaningful subgroups. Future research should examine how professional experience moderates prosocial behavior and extend this line of inquiry to other Latin American countries through measurement invariance frameworks.

5. Conclusions

This study examined the direct and indirect effects of teacher resilience on prosocial actions and feelings in Chilean elementary school teachers, with self-efficacy beliefs as a mediating factor. The results confirmed both proposed hypotheses: H1, that resilience directly and positively influences prosocialness; and H2, that self-efficacy partially mediates this relationship. These findings contribute to the understanding of socioemotional factors that sustain educational practices aligned with the goals of sustainable development.

The confirmation of a significant link between resilience and prosocialness reinforces the theoretical view that personal strengths are developed through interaction with others. Trusting relationships, role models, and supportive environments foster the formation of resilience, which, in turn, enables the expression of empathy, affection, and altruism. These results are consistent with previous empirical research and highlight the importance of educational processes that cultivate prosocial values.

The mediating role of teacher self-efficacy underscores its relevance as both a protective and enabling factor in educational settings. Strengthening self-efficacy not only supports teachers' capacity to manage adversity but also enhances their willingness to engage in prosocial behaviors. These findings emphasize the need to design educational environments that nurture resilience and self-efficacy in an integrated and systemic way.

Given the evidence, public policies should consider prosocialness as a strategic component of teacher development and school climate. Initiatives such as socioemotional training modules, peer mentoring, and reflective practices can reinforce both the individual and collective capacities required for inclusive and sustainable education. Promoting prosocial-

ness in schools benefits students, teachers, and society, contributing to the broader aims of the 2030 Agenda.

Future research should explore the shared social experiences that contribute to prosocial development in school contexts and investigate how professional trajectories and institutional cultures shape these dynamics. Understanding and enhancing these processes is key to advancing education as a transformative force for sustainable development.

Author Contributions: Conceptualization, M.M.-C. and S.S.-G.; methodology, M.M.-C., S.S.-G. and S.D.-L.; software, M.M.-C., S.S.-G. and S.D.-L.; validation, M.M.-C., S.S.-G. and S.D.-L.; formal analysis, M.M.-C., S.S.-G. and S.D.-L.; investigation, M.M.-C., S.S.-G. and S.D.-L.; resources, M.M.-C., S.S.-G. and S.D.-L.; data curation, M.M.-C., S.S.-G. and S.D.-L.; writing—original draft preparation, M.M.-C., S.S.-G. and S.D.-L.; writing—review and editing, M.M.-C., S.S.-G. and S.D.-L.; visualization, M.M.-C., S.S.-G. and S.D.-L.; supervision, M.M.-C., S.S.-G. and S.D.-L.; project administration, S.S.-G.; funding acquisition, S.S.-G. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Agencia Nacional de Investigación y Desarrollo, ANID, FONDECYT Projects 1210551.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of Universidad de La Frontera (File No 053_21; Study Protocol Page No 019/21.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data that support the findings of this study are not available because they are confidential data.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Assadourian, E. EarthEd: Rethinking Education on a Changing Planet. In *EarthEd: State of the World*; Island Press: Washington, DC, USA, 2017; pp. 3–20.
2. United Nations General Assembly. Naciones Unidas. Asamblea General de las Naciones Unidas. Available online: https://www.un.org/es/ga/70/resolutions.shtml (accessed on 2 April 2023).
3. Bielik, T.; Delen, I.; Krell, M.; Ben Zvi Assaraf, O. Characterising the Literature on the Teaching and Learning of System Thinking and Complexity in STEM Education: A Bibliometric Analysis and Research Synthesis. *J. STEM Educ. Res.* **2023**, *6*, 199–231. [CrossRef]
4. Dawson, V.; Carson, K. Introducing Argumentation about Climate Change Socioscientific Issues in a Disadvantaged School. *Res. Sci. Educ.* **2020**, *50*, 863–883. [CrossRef]
5. UNDP. *United Nations Development Programme Human Development Report 2021/2022. Uncertain Times, Unsettled Lives. Shaping Our Future in a Transforming World*; United Nations Development Programme (UNDP): New York, NY, USA, 2022.
6. UNESCO. *UNESCO Informe de Seguimiento de la Educación en el Mundo 2023: Tecnología en la Educación: Una Herramienta en los Términos de Quién?* UNESCO: Paris, France, 2024.
7. Howard, P. Twenty-First Century Learning as a Radical Rethinking of Education in the Service of Life. *Educ. Sci.* **2018**, *8*, 189. [CrossRef]
8. Costa, M.F.B.; Cipolla, C.M. Critical Soft Skills for Sustainability in Higher Education: A Multi-Phase Qualitative Study. *Sustainability* **2025**, *17*, 377. [CrossRef]
9. Hammond, Z. *Culturally Responsive Teaching & the Brain: Promoting Authentic Engagement and Rigor Among Culturally and Linguistically Diverse Students*; Corwin Publishing: Thousand Oaks, CA, USA, 2015.
10. Howard, P.; Corbett, M.; Burke-Saulnier, A.; Young, D. *Education Futures: Conservation and Change. Paper Commissioned for the UNESCO Futures of Education Report (Forth Coming, 2021)*; UNESCO: Paris, France, 2020.
11. Kay, B. Supporting Living Schools through Transformative Governance and Leadership: A Vermont Experience. In *Living Schools; Transforming Education*; Howard, P., O'Brien, C., Eds.; ESWB Press: Winnipeg, MB, Canada, 2020; pp. 93–104.
12. Hart, R.; Hart, D. Untying the Text: Organizational Prosociality and Kindness. *Behav. Sci.* **2023**, *13*, 186. [CrossRef]
13. Bravo-Sanzana, M.; Miranda, R.; Terán-Mendoza, O.; Mieres-Chacaltana, M.; Carabantes, L. Cultural Adaptation and Psychometric Properties of the Online Learning Climate Scale for Chilean University Students. *Front. Psychol.* **2024**, *15*, 1280311. [CrossRef]

14. Bergin, C.; Tsai, C.-L.; Prewett, S.; Jones, E.; Bergin, D.A.; Murphy, B. Effectiveness of a Social-Emotional Learning Program for Both Teachers and Students. *AERA Open* **2024**, *10*, 1–17. [CrossRef]
15. Liu, W.; Su, T.; Tian, L.; Huebner, E.S. Prosocial Behavior and Subjective Well-Being in School among Elementary School Students: The Mediating Roles of the Satisfaction of Relatedness Needs at School and Self-Esteem. *Appl. Res. Qual. Life* **2021**, *16*, 1439–1459. [CrossRef]
16. Caprara, G.V.; Luengo Kanacri, B.P.; Zuffianò, A.; Gerbino, M.; Pastorelli, C. Why and How to Promote Adolescents' Prosocial Behaviors: Direct, Mediated and Moderated Effects of the CEPIDEA School-Based Program. *J. Youth Adolesc.* **2015**, *44*, 2211–2229. [CrossRef]
17. Nalipay, M.J.N.; King, R.B.; Yeung, S.S.S.; Chai, C.S.; Jong, M.S. Why Do I Teach? Teachers' Instrumental and Prosocial Motivation Predict Teaching Quality across East and West. *Br. J. Educ. Psychol.* **2023**, *93*, 453–466. [CrossRef]
18. Armstrong-Carter, E.; Miller, J.G.; Hill, L.J.B.; Domingue, B.W. Young Children's Prosocial Behaviour Protects against Academic Risk in Neighborhoods with Low Socioeconomic Status. *Child Dev.* **2021**, *92*, 1509–1522. [CrossRef] [PubMed]
19. Nalls, A.J.; Wickerd, G. The Jigsaw Method: Reviving a Powerful Positive Intervention. *J. Appl. Sch. Psychol.* **2022**, *39*, 201–217. [CrossRef]
20. Luengo Kanacri, B.P.; Eisenberg, N.; Tramontano, C.; Zuffiano, A.; Caprara, M.G.; Regner, E.; Zhu, L.; Pastorelli, C.; Caprara, G.V. Measuring Prosocial Behaviors: Psychometric Properties and Cross-National Validation of the Prosociality Scale in Five Countries. *Front. Psychol.* **2021**, *12*, 693174. [CrossRef] [PubMed]
21. Gay, G. *Culturally Responsive Teaching: Theory, Research and Practice*; Teachers College Press: New York, NY, USA, 2018.
22. Skinner, E.A.; Rickert, N.P.; Vollet, J.W.; Kindermann, T.A. The Complex Social Ecology of Academic Development: A Bioecological Framework and Illustration Examining the Collective Effects of Parents, Teachers, and Peers on Student Engagement. *Educ. Psychol.* **2022**, *57*, 87–113. [CrossRef]
23. Koç, S.; Altınay, F.; Koç, A.; Altınay, Z.; Dagli, G. Cooperation of Emotional Intelligence and Social Activities in Education: Effects on School Culture and Value Acquisition. *Sustainability* **2024**, *16*, 6022. [CrossRef]
24. Cebrián, G.A. Collaborative Action Research Project towards Embedding ESD within the Higher Education Curriculum. *Int. J. Sustain. High. Educ.* **2017**, *18*, 857–876. [CrossRef]
25. Estrada, M.; Monferrer, D.; Rodríguez, A.; Moliner, M.Á. Does Emotional Intelligence Influence Academic Performance? The Role of Compassion and Engagement in Education for Sustainable Development. *Sustainability* **2021**, *13*, 1721. [CrossRef]
26. Kioupi, V.; Voulvoulis, N. Education for Sustainable Development: A Systemic Framework for Connecting the SDGs to Educational Outcomes. *Sustainability* **2019**, *11*, 6104. [CrossRef]
27. Del Flores-Piñero, M.C.; González-Hernández, J.; Valdivia-Moral, P.Á. Teaching Action and Altruistic Behaviour in Physical Education Classes. Predictive Analysis Applying the 3 × 2 Motivational Climate Model. *Rev. Española Pedagog.* **2024**, *82*, 651–666. [CrossRef]
28. Abramczyk, A.; Jurkowski, S. Cooperative Learning as an Evidence-Based Teaching Strategy: What Teachers Know, Believe, and How They Use It. *J. Educ. Teach.* **2020**, *46*, 296–308. [CrossRef]
29. Chen, L.; Zhou, Y.F.; Nanakida, A. 'I Know I Am Caring': Fostering Ethical Care Awareness and Practice among Pre-Service Early Childhood Teachers. *J. Educ. Teach.* **2024**, *51*, 61–78. [CrossRef]
30. Samavi, A.; Hajializadeh, K.; Javdan, M.; Farshad, M.R. Psychometric Validation of Teacher Empathy Scale: Measurement Invariance in Gender. *Front. Psychol.* **2022**, *13*, 1042993. [CrossRef]
31. Caprara, G.V.; Steca, P.; Zelli, A.; Capanna, C. A New Scale for Measuring Adults' Prosocialness. European Journal of Psychological Assessment. *Eur. J. Psychol. Assess.* **2005**, *21*, 77–89. [CrossRef]
32. Corrente, M.; Ferguson, K.; Bourgeault, I.L. Mental Health Experiences of Teachers: A Scoping Review. *J. Teach. Learn.* **2022**, *16*, 23–43. [CrossRef]
33. Kim, L.E.; Oxley, L.; Asbury, K. "My Brain Feels like a Browser with 100 Tabs Open": A Longitudinal Study of Teachers' Mental Health and Well-Being during the COVID-19 Pandemic. *Br. J. Educ. Psychol.* **2022**, *92*, 299–318. [CrossRef]
34. Soininen, V.; Pakarinen, E.; Lerkkanen, M.K. Reciprocal Associations among Teacher–Child Interactions, Teachers' Work Engagement, and Children's Social Competence. *J. Appl. Dev. Psychol.* **2023**, *85*, 101508. [CrossRef]
35. Aydin Sunbul, Z.; Gordesli, M. Psychological Capital and Job Satisfaction in Public-School Teachers: The Mediating Role of Prosocial Behaviours. *J. Educ. Teach.* **2021**, *47*, 147–162. [CrossRef]
36. Gore, J.; Lloyd, A.; Smith, M.; Bowe, J.; Ellis, H.; Lubans, D. Effects of Professional Development on the Quality of Teaching: Results from a Randomised Controlled Trial of Quality Teaching Rounds. *Teach. Teach. Educ.* **2017**, *68*, 99–113. [CrossRef]
37. Paliliunas, D.; Burke, R.; Taylor, S.; Belisle, J.; Frizell, C.; Sickman, E. A Preliminary Analysis of a Prosocial Intervention to Support Teachers and Staff Implementing Behavioral Interventions in a Specialized School Setting. *Behav. Anal. Pract.* **2024**, *17*, 1191–1197. [CrossRef]
38. Steiner, E.D.; Woo, A. *Job-Related Stress Threatens the Teacher Supply: Key Findings from the 2021 State of the U.S. Teacher Survey*; RAND Corporation: Santa Monica, CA, USA, 2021.

39. Moll Riquelme, I.; Bagur Pons, S.; Rosselló Ramon, M.R. Resilience: Conceptualization and Keys to Its Promotion in Educational Centers. *Children* **2022**, *9*, 1183. [CrossRef]
40. Grotberg, E. What Is Resilience? How Do You Promote It? How Do You Use It? In *Resilience for Today: Gaining Strength from Adversity*; Grotberg, E., Ed.; Praeger Publishers: Westport, CT, USA, 2003; pp. 1–29.
41. Salvo-Garrido, S.; Polanco-Levicán, K.; Dominguez-Lara, S.; Mieres-Chacaltana, M.; Gálvez-Nieto, J.L. Relationships between Resilience and Self-Efficacy in the Prosocial Behavior of Chilean Elementary School Teachers. *Behav. Sci.* **2024**, *14*, 678. [CrossRef]
42. Bravo-Sanzana, M.; Miranda, R.; Oriol, X. Adolescent Victimization during COVID-19 Lockdowns and Its Influence on Mental Health Problems in Seven Countries: The Mediation Effect of Resilience. *Int. J. Environ. Res. Public Health* **2023**, *20*, 1958. [CrossRef]
43. Grotberg, E. Resilience Programs for Children in Disaster. *Ambul. Child Health* **2001**, *7*, 75–83. [CrossRef]
44. Cebrián, G.; Junyent, M. Competencias Profesionales En Educación Para La Sostenibilidad: Un Estudio Exploratorio de La Visión de Futuros Maestros. *Enseñanza Cien.* **2014**, *32*, 29–49. [CrossRef]
45. Liu, Y.; Ngai, S. The Impact of Social Capital, Self-Efficacy, and Resilience on the Prosocial Involvement of Adolescents from Families with and without Economic Disadvantages. *Child Indic. Res.* **2019**, *12*, 1735–1757. [CrossRef]
46. Xiang, X.P.; Wang, J.; Tian, G.X.; Ungar, M.; Han, L.L. Risk, Resilience, and Chinese Youth's Psychosocial Adjustment: The Role of Social Services. *J. Soc. Serv. Res.* **2023**, *49*, 147–160. [CrossRef]
47. Alhawsawi, H.; Alhawsawi, S.; Sadeck, O. Understanding Resilience and Coping in a Digitally Transformed Educational Environment during COVID-19. *J. Furth. High. Educ.* **2022**, *47*, 242–254. [CrossRef]
48. Edmonds, R.; Ochaya, A.; Sansom, N. The Role of Resilience Processes in Education and Well-Being Outcomes for Separated Children in Uganda: Exploring Street-Connected Children's Pathways through a Resilience-Based Programme and Beyond. *Glob. Stud. Child.* **2022**, *12*, 14–26. [CrossRef]
49. Pozo-Rico, T.; Poveda, R.; Gutiérrez-Fresneda, R.; Castejón, J.-L.; Gilar-Corbi, R. Revamping Teacher Training for Challenging Times: Teachers' Well-Being, Resilience, Emotional Intelligence, and Innovative Methodologies as Key Teaching Competencies. *Psychol. Res. Behav. Manag.* **2023**, *16*, 1–18. [CrossRef]
50. Salvo, S.; Bravo-Sanzana, M.; Miranda-Vargas, H.; Fóres, A.; Mieres-Chacaltana, M. ¿La Promoción de La Resiliencia En La Escuela Puede Contribuir Con La Política Pública de Salud? *Salud Publica Mex.* **2017**, *59*, 214–215. [CrossRef]
51. Cann, R.; Sinnema, C.; Rodway, J.; Daly, A.J. What Do We Know about Interventions to Improve Educator Wellbeing? A Systematic Literature Review. *J. Educ. Chang.* **2024**, *25*, 231–270. [CrossRef]
52. Durrani, N.; Makhmetova, Z. A Multi-Layered Socio-Ecological Framework for Investigating Teacher Well-Being: Key Predictors and Protective Factors. *Sustainability* **2025**, *17*, 900. [CrossRef]
53. Ungar, M. Social Ecologies and Their Contribution to Resilience. In *The Social Ecology of Resilience*; Ungar, M., Ed.; Springer: New York, NY, USA, 2012; pp. 13–31.
54. Bandura, A. Exercise of Personal and Collective Efficacy in Changing Societies. In *Self-Efficacy in Changing Societies*; Bandura, A., Ed.; Cambridge University Press: New York, NY, USA, 1995; pp. 1–45.
55. Duan, S.; Bissaker, K.; Xu, Z. Correlates of Teachers' Classroom Management Self-efficacy: A Systematic Review and Meta-analysis. *Educ. Psychol. Rev.* **2024**, *36*, 43. [CrossRef]
56. Bandura, A. Social Cognitive Theory: An Agentic Perspective. *Annu. Rev. Psychol.* **2001**, *52*, 1–26. [CrossRef]
57. Bandura, A. *Self-Efficacy: The Exercise of Control*; W. H. Freeman & Co.: New York, NY, USA, 1997.
58. Bandura, A. *Moral Disengagement: How People Do Harm and Live with Themselves*; Worth Publishers: New York, NY, USA, 2016.
59. Mohamadi, F.S.; Asadzadeh, H.; Ahadi, H.; Jomehri, F. Testing Bandura's Theory in School. *Procedia Soc. Behav. Sci.* **2011**, *12*, 426–435. [CrossRef]
60. Barbaranelli, C.; Paciello, M.; Biagioli, V.; Fida, R.; Tramontano, C. Positivity and Behaviour: The Mediating Role of Self-Efficacy in Organisational and Educational Settings. *J. Happiness Stud.* **2019**, *20*, 707–727. [CrossRef]
61. Davis, A.N.; Clark, E.S.; Streit, C.; Kelly, R.J.; Lardier, D.T. The Buffering Role of Community Self-Efficacy in the Links between Family Economic Stress and Young Adults' Prosocial Behaviors and Civic Engagement. *J. Genet. Psychol.* **2022**, *183*, 527–536. [CrossRef]
62. Kraft, M.A.; Simon, S.N.; Lyon, A.M. Sustaining a Sense of Success: The Protective Role of Teacher Working Conditions During the COVID-19 Pandemic. *EdWorkingPapers* **2020**, *21*, 727–769. [CrossRef]
63. Mudhar, G.; Ertesvåg, S.K.; Pakarinen, E. Patterns of Teachers' Self-Efficacy and Attitudes toward Inclusive Education Associated with Teacher Emotional Support, Collective Teacher Efficacy, and Collegial Collaboration. *Eur. J. Spec. Needs Educ.* **2023**, *39*, 446–462. [CrossRef]
64. Scheaffer, R.; Mendenhall, W.; Ott, R.L. *Elementos de Muestreo*; Grupo Editorial Iberoamérica: Mexico, México City, 1987.
65. Saavedra, E.; Villalta, M. Medición de Las Características Resilientes, Un Estudio Comparativo En Personas Entre 15 y 65 Años. *Liberabit* **2008**, *14*, 31–40.

66. Grotberg, E. *A Guide to Promoting Resilience in Children: Strenghening the Human Spirit, the International Resilience Project*; Bernard Van Leer: The Hague, The Netherlands, 1995.
67. Salvo-Garrido, S.; Polanco-Levicán, K.; Dominguez-Lara, S.; Mieres-Chacaltana, M.; Gálvez-Nieto, J.L. Psychometric Properties of the SV-RES60 Resilience Scale in a Sample of Chilean Elementary School Teachers. *Behav. Sci.* **2023**, *13*, 781. [CrossRef]
68. Tschannen-Moran, M.; Woolfolk Hoy, A. Teacher Efficacy: Capturing an Elusive Construct. *Teach. Teach. Educ.* **2001**, *17*, 783–805. [CrossRef]
69. Gálvez-Nieto, J.L.; Salvo-Garrido, S.; Domínguez-Lara, S.; Polanco-Levicán, K.; Mieres-Chacaltana, M. Psychometric Properties of the Teachers' Sense of Efficacy Scale in a Sample of Chilean Public School Teachers. *Front. Psychol.* **2023**, *14*, 1272548. [CrossRef]
70. Mieres-Chacaltana, M.; Salvo-Garrido, S.; Dominguez-Lara, S.; Gálvez-Nieto, J.L.; Alarcón-Bañares, P. Psychometric Validation of the Adult Prosocialness Behavior Scale in a Professional Teaching Context. *Behav. Sci.* **2023**, *13*, 761. [CrossRef]
71. Mieres-Chacaltana, M.; Salvo-Garrido, S.; Denegri-Coria, M. Evaluación de La Escala de Prosocialidad de Caprara, Steca, Zelli y Capanna En Estudiantes Universitarios Chilenos. *Rev. Iberoam. Diagn. Eval.–E Avaliação Psicol.* **2020**, *56*, 21–32. [CrossRef]
72. Fisher, R. Social Desirability Bias and the Validity of Indirect Questioning. *J. Consum. Res.* **1993**, *20*, 303–315. [CrossRef]
73. Latkin, C.A.; Edwards, C.; Davey-Rothwell, M.A.; Tobin, K.E. The Relationship between Social Desirability Bias and Self-Reports of Health, Substance Use, and Social Network Factors among Urban Substance Users in Baltimore, Maryland. *Addict. Behav.* **2017**, *73*, 133–136. [CrossRef]
74. Muthén, L.K.; Muthén, B.O. *Mplus, Version 8.4*; Muthén & Muthén: Los Angeles, CA, USA, 2019.
75. Bovaird, J.A.; Koziol, N.A. Measurement Models for Ordered-Categorical Indicators. In *Handbook of Structural Equation Modeling*; Hoyle, R.H., Ed.; The Guilford Press: New York, NY, USA, 2012; pp. 495–511.
76. Finney, S.; DiStefano, C. Structural Equation Modeling: A Second Course. In *A Second Course in Structural Equation Modeling*; Hancock, G.R., Mueller, R.O., Eds.; Information Age Publishing: Charlotte, NC, USA, 2013; pp. 439–492.
77. Shi, D.; Maydeu-Olivares, A.; Rosseel, Y. Assessing Fit in Ordinal Factor Analysis Models: SRMR vs. RMSEA. *Struct. Equ. Model. Multidiscip. J.* **2020**, *27*, 1–15. [CrossRef]
78. Wang, J.; Wang, X. *Structural Equation Modeling: Applications Using Mplus*; Wiley: Hoboken, NJ, USA, 2020.
79. Kline, R.B. *Principles and Practice of Structural Equation Modeling*, 2nd ed.; Guilford: New York, NY, USA, 2005.