



TRANSFORMATIONAL LEADERSHIP AND THE IMPLEMENTATION OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD): BASIS FOR A STRATEGIC LEADERSHIP FRAMEWORK FOR PUBLIC SECONDARY SCHOOLS

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Abstract

Advancing Education for Sustainable Development (ESD) has become a strategic focus in contemporary education, stressing the integration of sustainability principles into teaching, learning, and institutional practices to build lifelong learning and sustainable communities. This study explored the relationship between transformational leadership and the implementation of ESD in public secondary schools in Mandaue City for the 2025–2026 academic year. Anchored on Bass's Transformational Leadership Theory and the UNESCO ESD Framework, it analyzed the role of leadership in facilitating sustainability initiatives. With 114 participants, data were collected through the Multifactor Leadership Questionnaire and qualitative interviews. Results indicated a very high level of transformational leadership among school heads, a strong positive correlation ($r = 0.76$, $p < .001$) with high ESD implementation, and highlighted the significance of leadership support in overcoming challenges. The findings underscore the role of school leadership in advancing sustainable development goals by fostering environmentally responsible, socially inclusive, and transformative educational practices.

Keywords: *transformational leadership, Education for Sustainable Development, ESD implementation, school leadership, sustainability education, mixed-methods research, idealized influence, inspirational motivation, intellectual stimulation, individualized consideration, curriculum integration, teaching and learning strategies, community and stakeholder engagement, student participation and advocacy, professional development*



INTRODUCTION

Education is increasingly recognized not only as a foundation for social and economic progress (Pal, 2023) but also as a means of fostering the values, attitudes, and behaviors needed for peace, sustainability, and social justice (Marouli, 2021). This shift, emphasized by United Nations Sustainable Development Goal 4.7 (UNESCO, 2023), calls on education systems worldwide to align with sustainability principles, and national bodies such as the Department of Education have responded with policies that reflect these evolving goals (Babia et al., 2023; Rojas et al., 2022). Policy adoption alone, however, does not guarantee effective implementation. This study argues that transformational leadership is central to bridging the gap between policy and the effective implementation of Education for Sustainable Development (ESD), as strong leadership plays a key role in turning policy into classroom and institutional practice (Ogbe, 2025).

Transformational leadership, as defined by Bass and Avolio (1994), comprises four interrelated dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Leaders who embody these dimensions help teachers try new approaches (Sliwka et al., 2024) and build a school culture that supports sustainability (Mafe, 2023), making it easier to embed ESD in everyday practice (Ren et al., 2024). Recent evidence highlights the importance of leadership in advancing sustainable practices in schools (Alhazemi, 2024); Mogren (2024), for instance, found that strategic planning, stakeholder involvement, and a clear sustainability vision are closely linked to successful ESD across different settings. Beyond administrative competence, school leaders also need a strategic outlook (Miao & Nduneseokwu, 2025) and systemic thinking to fully integrate ESD into school life and community involvement (Zakariah et al., 2024). Despite these positive developments, integrating ESD consistently and sustaining strong leadership support remain persistent challenges (Wohlfart et al., 2025).

Mandaue City Division in Cebu, an area experiencing rapid industrial growth alongside mounting environmental pressures such as flooding, pollution, and wetland loss, provides a fitting context for examining these dynamics (Mandaue City Environment and Natural Resources Office [MCENRO], 2026). Public secondary schools in its South District have taken part in city-led sustainability efforts—including mangrove reforestation, a Green Building Ordinance, barangay-level waste segregation, river rehabilitation, and renewable-energy partnerships—yet the extent to which schools translate these community initiatives into classroom and institutional practice varies considerably (Kyriakides et al., 2021; Llorin & Obillo, 2021), often due to gaps in leadership support, resources, and teacher training. This variation, set against a uniquely urbanizing backdrop where frameworks such as the Triple Bottom Line could link educational outcomes to environmental stewardship, social responsibility, and economic growth, makes Mandaue City a strong case for examining how transformational leadership shapes school-level sustainability outcomes.

While earlier studies establish that leadership matters for ESD (Sofiyanti & Marampa, 2025), few have examined how transformational leadership specifically affects the adoption and sustainability of ESD in urban Philippine secondary schools (Berry & Plazo, 2025), particularly across settings where outcomes differ (Eustachio et al., 2024). This study addresses that gap by examining how transformational leadership advances ESD in public secondary schools in the South District of Mandaue City, with the aim of producing practical, context-based recommendations for strengthening ESD in both curriculum and daily school operations.

Theoretical and Conceptual Framework

This study is anchored on three complementary frameworks: Bass's Transformational Leadership Theory (1990), Organizational Change Theory (Lewin, 1951; Schein, 1992), and the UNESCO Education for Sustainable Development Framework (2014). Bass's model describes a leadership style in which leaders inspire, intellectually challenge, and support followers, setting high expectations that drive organizational change; it comprises four dimensions—idealized influence (ethical role-modeling that earns trust and respect), inspirational motivation



(articulating a compelling, optimism-building vision), intellectual stimulation (encouraging critical and creative thinking), and individualized consideration (attending to each follower's needs and development). Applied to ESD, idealized influence positions sustainability as a shared value rather than an imposed mandate; inspirational motivation unifies fragmented initiatives around a coherent vision; intellectual stimulation turns schools into sites of experimentation with sustainable practice; and individualized consideration enables differentiated support that broadens ownership of sustainability work across staff.

The UNESCO ESD Framework (2014) emphasizes learner-centered teaching, critical thinking, environmental stewardship, and social responsibility, calling for sustainability to be embedded in curriculum, pedagogy, and school culture alike. Organizational Change Theory (Lewin, 1951; Schein, 1992) explains how leaders unfreeze old habits, introduce new practices, and embed these changes into institutional culture—positioning school leaders as key agents for moving ESD from policy into lived practice. This research is further situated within the Philippine legal and policy landscape: Republic Act No. 9512 (Environmental Awareness and Education Act of 2008) mandates environmental education across all education levels; Republic Act No. 9729 (Climate Change Act of 2009) assigns local government units and schools a role in climate action; DepEd Order No. 52, s. 2011 provides curricular guidelines for environmental education in K–12; the Philippine Development Plan (2023–2028) foregrounds sustainable and inclusive development; and SDG 4.7 connects the study to global standards for education that supports sustainability and global citizenship. Together, these frameworks and policies establish both the theoretical rationale and the institutional backdrop for examining how transformational leadership advances ESD implementation.

Statement of the Problem

This study examined the leadership practices of school heads influencing the advancement of Education for Sustainable Development (ESD) in public secondary schools in the South District of Mandaue City Division during School Year 2025–2026, as a basis for developing a strategic leadership framework to strengthen transformational leadership in advancing ESD. Specifically, it sought to answer the following questions:

1. As perceived by school heads and teachers, what is the level of transformational leadership exhibited by school heads in terms of: (1.1) Idealized Influence, (1.2) Inspirational Motivation, (1.3) Intellectual Stimulation, and (1.4) Individualized Consideration?
2. To what extent is ESD implemented in public secondary schools, considering: (2.1) curriculum integration, (2.2) teaching and learning strategies, (2.3) student engagement, (2.4) community and global engagement, (2.5) resource utilization, and (2.6) professional development?
3. Is there a significant relationship between the level of transformational leadership exhibited by school heads and the extent of ESD implementation in schools?
4. What challenges and barriers related to the implementation of ESD are perceived by school heads and teachers?
5. Based on the findings of the study, what strategic leadership framework can be developed to strengthen the role of transformational leadership in advancing ESD?

Two null hypotheses were tested: (H01) There is no significant relationship between the level of transformational leadership exhibited by school heads and the extent of ESD implementation in public secondary schools in the South District of Mandaue City Division; and (H02) there is no significant relationship between the individual dimensions of transformational leadership and the extent of ESD implementation.

The findings are expected to benefit the Board of Regents and policymakers in shaping leadership frameworks that encourage sustainability and accountability; school administrators and faculty in strengthening leadership practices and classroom integration of ESD; stakeholders, parents, and students through stronger school–



community partnerships and richer sustainability-oriented learning experiences; and future researchers seeking tested tools and findings to build on in other educational settings.



METHODS

Research Design

This study employed a mixed-methods explanatory sequential design (Creswell & Creswell, 2023), carried out in two phases. The quantitative phase measured transformational leadership and ESD implementation through standardized instruments; a subsequent qualitative phase used semi-structured interviews to explain and elaborate on the quantitative results. This design allowed the study to first identify broad statistical patterns and then explore, in participants' own words, how leadership shapes the adoption of sustainability practices—producing a fuller, triangulated account of the relationship between transformational leadership and ESD implementation than either method could offer alone.

Research Environment and Respondents

The study was conducted in three public secondary schools in the South District of Mandaue City Division: Subangdaku Technical Vocational School (STVS), Banilad National High School (BNHS), and Tipolo National High School (TNHS). All three schools have engaged in environmental programs—tree planting, waste management, and disaster-preparedness training among them—but report ongoing challenges in embedding ESD into the formal curriculum, chiefly due to resource constraints, uneven leadership support, and limited teacher training in sustainability education. Respondents comprised 114 school heads and teachers across the three schools (School A: $n = 46$, 40.35%; School B: $n = 25$, 21.93%; School C: $n = 43$, 37.72%), as summarized in Table 1.

Table 1. Distribution of Respondents (N = 114)

School	School Head	Master Teachers	Teachers	Total	%
School A	1	7	38	46	40.35%
School B	1	3	21	25	21.93%
School C	1	6	36	43	37.72%
Total	3	16	95	114	100%

Instruments

Three instruments were used. The Multifactor Leadership Questionnaire (MLQ; Bass & Avolio, 1994) assessed the principal's transformational leadership across the four dimensions defined above, rated on a 5-point Likert scale from 1 (Very Low) to 5 (Very High). The ESD Implementation Survey, based on the UNESCO ESD self-assessment scale, measured teachers' integration of sustainability principles across curriculum integration, teaching and learning strategies, student engagement, community and global engagement, resource utilization, and professional development, using the same 5-point scale. Semi-structured interviews were subsequently conducted with 6 to 10 purposively selected teachers and the principal at each school to probe perceptions, experiences, and challenges in ESD integration in greater depth.



Both instruments were interpreted using the following scale, applied consistently across all reported means in this study: 4.21–5.00 (Very High), 3.41–4.20 (High), 2.61–3.40 (Moderate), 1.81–2.60 (Low), and 1.00–1.80 (Very Low).

Data Gathering Procedures and Ethical Considerations

Formal approval was secured from the Mandaue City Division prior to data collection. The MLQ was subsequently administered to school heads and the ESD Implementation Survey to all teachers, either electronically or on paper by school preference. Following the quantitative phase, semi-structured interviews were conducted with selected teachers and principals at times convenient to participants; with consent, interviews were audio-recorded, transcribed, and analyzed thematically. Throughout data collection, the study observed informed consent (participants were briefed on the study's purpose and could withdraw at any time without penalty), confidentiality (identities were withheld from analysis and reporting), voluntary participation, and a follow-up protocol for clarifying incomplete or ambiguous responses.

Statistical Treatment

Descriptive statistics (means and standard deviations) summarized responses to the MLQ and ESD Implementation Survey for each leadership dimension and ESD domain. Pearson's correlation coefficient (r) assessed the relationship between transformational leadership and ESD implementation, and simple linear regression ($Y = a + bX$, where b is the slope reflecting the effect of leadership on ESD and a is the intercept) tested whether transformational leadership predicts the extent of ESD implementation. Interview transcripts were analyzed using thematic analysis (familiarization, coding, theme generation, review, and naming), and quantitative and qualitative findings were subsequently integrated to provide a fuller account of how leadership shapes ESD implementation.



RESULTS

Level of Transformational Leadership

Teachers rated school heads' transformational leadership as consistently very high across all four dimensions.

Table 2. Idealized Influence

Item	Mean	SD	Interpretation
Sets a good example	4.47	0.73	Very High
Demonstrates professionalism	4.44	0.75	Very High
Admired and respected	4.42	0.76	Very High
Earns trust and respect	4.41	0.77	Very High
Role model for ethics	4.38	0.79	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

“Sets a good example” was the highest-rated indicator ($M = 4.47$, $SD = 0.73$), and all indicators fell in the High-to-Very-High range, indicating that teachers perceive their school heads as highly credible ethical role models.

Table 3. Inspirational Motivation

Item	Mean	SD	Interpretation
Motivates teachers	4.45	0.74	Very High
Communicates purpose	4.43	0.75	Very High
Builds enthusiasm	4.39	0.77	High
Encourages future vision	4.40	0.78	High
Articulates vision	4.36	0.80	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

“Motivates teachers” received the highest rating ($M = 4.45$, $SD = 0.74$), suggesting school heads are particularly effective at inspiring staff and communicating a clear sense of purpose.

**Table 4. Intellectual Stimulation**

Item	Mean	SD	Interpretation
Encourages innovation	4.37	0.78	High
Welcomes new ideas	4.35	0.79	High
Promotes curiosity	4.33	0.80	High
Challenges assumptions	4.31	0.81	High
Encourages creativity	4.28	0.83	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

All indicators were rated High, with “Encourages innovation” scoring highest ($M = 4.37$, $SD = 0.78$), reflecting a consistent perception that school heads foster critical thinking and openness to new approaches.

Table 5. Individualized Consideration

Item	Mean	SD	Interpretation
Supports personal/professional growth	4.36	0.79	High
Treats teachers individually	4.34	0.80	High
Provides personalized feedback	4.32	0.81	High
Shows concern for well-being	4.30	0.82	High
Pays attention to needs	4.29	0.82	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Closely clustered mean scores indicate that school heads consistently attend to teachers' individual growth and well-being, with “Supports personal/professional growth” rated highest ($M = 4.36$, $SD = 0.79$).

Table 6. Summary Level of Transformational Leadership

Item	Mean	SD	Interpretation
Idealized Influence	4.42	0.76	Very High

Inspirational Motivation	4.41	0.77	Very High
Intellectual Stimulation	4.33	0.80	Very High
Individualized Consideration	4.32	0.81	Very High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

All four domains were rated Very High, with an overall mean of 4.37 (SD = 0.79). Idealized Influence (M = 4.42) and Inspirational Motivation (M = 4.41) were rated slightly higher than Intellectual Stimulation (M = 4.33) and Individualized Consideration (M = 4.32), indicating that school heads are perceived primarily as ethical, trustworthy, and vision-driven leaders, while still meaningfully fostering innovation and providing individualized support.

Level of ESD Implementation

Table 7. Curriculum Integration

Item	Mean	SD	Interpretation
Teach environmental issues	4.46	0.77	Very High
Promote global citizenship	4.32	0.82	Very High
Integrate sustainability principles	4.27	0.84	Very High
Include social justice topics	4.21	0.88	Very High
Discuss responsible consumption	4.18	0.91	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Environmental education receives more curricular emphasis than social-justice or responsible-consumption content, suggesting an opportunity to broaden curriculum integration toward the full range of sustainability dimensions.

Table 8. Teaching and Learning Strategies

Item	Mean	SD	Interpretation
Interactive methods	4.52	0.71	Very High
Student research/projects	4.47	0.74	Very High



Case studies/examples	4.35	0.79	High
Hands-on activities	4.29	0.83	High
Problem-solving activities	4.24	0.85	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Interactive, learner-centered methods and student-led research were the most frequently used strategies, consistent with ESD's emphasis on participatory, action-oriented pedagogy.

Table 9. Student Engagement

Item	Mean	SD	Interpretation
Collaborative learning	4.44	0.76	Very High
Discussions	4.36	0.80	High
Critical thinking	4.28	0.83	High
Leadership roles	4.22	0.87	High
Autonomy in topics	4.17	0.92	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Collaborative learning was the most prominent form of engagement, while opportunities for students to lead or choose their own sustainability topics were comparatively underemphasized.

Table 10. Community and Global Engagement

Item	Mean	SD	Interpretation
Global perspectives	4.23	0.86	High
Community initiatives	4.05	0.95	High
Collaborate with NGOs	3.81	1.02	Moderate–High
Invite guest speakers	3.74	1.08	Moderate
International networks	3.68	1.15	Moderate



Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

This was the weakest ESD domain overall: schools engage more readily with local community initiatives and global perspectives in the classroom than with formal partnerships involving NGOs, guest experts, or international networks.

Table 11. Resource Utilization

Item	Mean	SD	Interpretation
Provide sustainability resources	4.45	0.75	Very High
Sustainable classroom practices	4.38	0.78	High
Eco-friendly materials	4.31	0.82	High
Technology use	4.26	0.84	High
Access to ESD materials	4.19	0.90	High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Schools were generally successful in providing sustainability resources, though access to specialized ESD instructional materials remained comparatively limited.

Table 12. Professional Development and Leadership

Item	Mean	SD	Interpretation
Collaborate with teachers	4.30	0.82	High
Seek PD opportunities	4.23	0.86	High
Attend workshops	4.17	0.91	High
Support colleagues	4.08	0.94	High
Lead school-wide initiatives	3.92	1.01	Moderate–High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Teachers actively pursue professional learning and collaborate with peers, but relatively few take on leadership roles in school-wide sustainability initiatives, pointing to an underdeveloped avenue for distributed teacher leadership.

Table 13. Level of ESD Implementation (Summary)

Item	Mean	SD	Interpretation
Teaching Strategies	4.39	0.78	Very High
Resource Utilization	4.32	0.82	High
Student Engagement	4.32	0.84	High
Curriculum Integration	4.29	0.84	High
Professional Development	4.14	0.91	High
Community Engagement	3.90	0.99	Moderate–High

Legend: 4.21–5.00 Very High; 3.41–4.20 High; 2.61–3.40 Moderate; 1.81–2.60 Low; 1.00–1.80 Very Low.

Across the six ESD domains, teaching strategies were rated most strongly, while community engagement was the weakest, indicating that schools implement ESD more consistently inside the classroom than through external partnerships.

Relationship Between Transformational Leadership and ESD Implementation

Table 14. Correlation Between Transformational Leadership and ESD Implementation

Variables	r-value	Interpretation
Transformational Leadership and ESD Implementation	0.76	Strong Positive Relationship

A Pearson correlation of $r = 0.76$ ($p < .001$) indicates a strong positive relationship between transformational leadership and ESD implementation: as school heads' transformational leadership increases, so does the extent of ESD implementation. School principals who model ethical behavior, articulate a compelling vision, encourage innovation, and provide individualized support are more likely to see stronger sustainability-related programming in curriculum, teaching, student engagement, community involvement, resource use, and professional development. This is consistent with earlier work linking transformational leadership to innovation, teamwork, and improved teaching quality (Leithwood et al., 2020; Hallinger, 2021). Because the analysis draws on only three schools, however, these results should be interpreted with caution, and replication across a larger number of institutions is warranted.

Table 15. Simple Linear Regression: Transformational Leadership Predicting ESD Implementation

Variable	B	SE B	β	t	p	R ²	Interpretation
Transformational Leadership	0.64	0.47	0.81	1.37	0.402	0.65	Positive; not significant

Transformational leadership positively predicted ESD implementation ($B = 0.64$, $\beta = 0.81$), with $R^2 = 0.65$ indicating that leadership accounted for roughly 65% of the variance in ESD implementation across the three schools — a large effect size. The relationship was not statistically significant ($t = 1.37$, $p = .402$), however, almost certainly because the regression was estimated at the level of only three institutional units, which sharply limits statistical power and inflates standard errors. This finding should therefore be read as exploratory rather than confirmatory: it is consistent with, but cannot independently establish, the predictive relationship suggested by the strong bivariate correlation and by the qualitative data reported below.

Challenges and Barriers to ESD Implementation

Thematic analysis of interviews with school heads and teachers, following the coding-to-theme procedure of Creswell and Creswell (2023), produced six themes.

Table 16. Coding Framework for Thematic Analysis

Codes	Category	Theme
Leadership guidance, vision, encouragement, motivation	Leadership roles	Leadership as a Catalyst for ESD Implementation
Lesson integration, sustainability topics, real-life application	Instructional practices	Integration of Sustainability in Teaching Practices
Lack of materials, insufficient funding, limited facilities	Resource constraints	Resource and Infrastructure Constraints
Collaboration, partnerships, teamwork, stakeholder involvement	Social interaction	Collaboration and Stakeholder Engagement
Time limitation, exam focus, curriculum pressure	Institutional barriers	Academic and Institutional Pressures
Commitment, willingness, positive outlook, future plans	Personal attitudes	Positive Attitudes Toward Sustainability

Leadership as a Catalyst for ESD Implementation. Participants consistently pointed to leadership as the driver of sustainability practice. As one school head noted, “As a school head, I ensure that sustainability is part of our



programs and initiatives,” while a teacher observed, “Our principal motivates us to include sustainability in our lessons.”

Integration of Sustainability in Teaching Practices. Teachers described embedding sustainability directly into everyday instruction: “I incorporate environmental topics and sustainability issues in my lessons,” and “students are encouraged to apply sustainability in real-life situations.”

Resource and Infrastructure Constraints. Even where leadership was strong, limited materials and funding hampered implementation: “We lack sufficient materials to support sustainability education,” and “there are not enough resources for sustainability projects.”

Collaboration and Stakeholder Engagement. Partnerships strengthened ESD efforts: “We partner with the community for environmental activities,” and “working together helps us implement sustainability programs effectively.”

Academic and Institutional Pressures. Exam-driven schedules constrained the time available for sustainability content: “We prioritize exam preparation, which limits time for sustainability topics,” and “time constraints affect the implementation of additional programs.”

Positive Attitudes Toward Sustainability. Despite these constraints, participants expressed strong commitment: “We are willing to enhance our sustainability practices,” and “we plan to strengthen sustainability initiatives in the future.”

Read alongside the quantitative results, these themes reinforce that leadership is a consistent driver of ESD implementation, and that its impact is most constrained by resource limitations and institutional time pressures rather than by a lack of will among school heads or teachers. This triangulation—qualitative themes corroborating the quantitative correlation—strengthens confidence in the overall finding, even where the small-sample regression could not reach statistical significance.



DISCUSSION

School heads in the South District of Mandaue City were consistently rated as very high transformational leaders, most notably in idealized influence and inspirational motivation—dimensions that speak to their credibility as ethical role models and their capacity to articulate a unifying vision. This pattern aligns with transformational leadership theory (Bass & Riggio, 2006) and with prior findings that such leadership strengthens teacher performance and drives school improvement (Leithwood et al., 2020; Hallinger, 2021). Although intellectual stimulation and individualized consideration were rated marginally lower, they remained in the very-high range, indicating that school heads also meaningfully support innovation and provide differentiated support to teachers.

ESD implementation was similarly strong overall, led by teaching strategies and supported by solid resource utilization, student engagement, and curriculum integration. Community and global engagement, however, was the clear outlier, falling to the moderate-to-high range. This gap is consistent with the qualitative finding that resource and time constraints, rather than a lack of leadership will, most often limit schools' ability to build partnerships with NGOs, invite outside experts, or join international sustainability networks. Within curriculum integration specifically, environmental content is emphasized more than social-justice or responsible-consumption topics, suggesting that ESD in these schools currently leans toward an ecological rather than a fully multi-pillar (environmental, social, and economic) conception of sustainability—a pattern consistent with the broader shift Hallinger et al. (2024) describe in the ESD literature from a narrowly eco-centric focus toward a more balanced one.

The strong positive correlation between transformational leadership and ESD implementation ($r = 0.76$, $p < .001$) supports the study's central argument that leadership is a key mechanism translating sustainability policy into practice. The accompanying regression result, while showing a large effect size ($R^2 = 0.65$), was not statistically significant—an outcome attributable to the small number of institutional units (three schools) rather than to a weak underlying relationship. The qualitative theme of “Leadership as a Catalyst for ESD Implementation” directly corroborates the quantitative correlation, and this convergence across data sources is itself a form of evidence: where a single quantitative test is underpowered, triangulation with independently gathered qualitative data offers a more defensible basis for interpreting the relationship as genuine, while still calling for confirmation in a larger, multi-school sample.

Two additional patterns from the interviews merit emphasis. First, resource and infrastructure constraints emerged as the most consistently cited barrier, cutting across all three schools regardless of how highly teachers rated their principal's leadership—implying that transformational leadership, while necessary, is not sufficient on its own to guarantee full ESD implementation without accompanying institutional support (cf. Sedkaoui et al., 2025). Second, academic and institutional pressures, particularly the demands of examination preparation, compete directly with time available for sustainability content, echoing similar findings in Philippine technical-vocational contexts (Llorin & Obillo, 2021) and DepEd policy-implementation studies (Babia et al., 2023).

Limitations

This study's principal limitation is its small institutional sample—three schools within a single division—which limits the statistical power of the regression analysis and the generalizability of the findings beyond Mandaue City's South District. The cross-sectional design also captures a single point in time and cannot establish causal direction between leadership and ESD implementation. Future research using a larger, multi-division sample and a longitudinal design would allow for more robust testing of the predictive relationship suggested here.



Conclusion

School heads in the South District of Mandaue City consistently demonstrate very high transformational leadership, and ESD is being implemented successfully across most classroom-facing domains, with community engagement remaining the area most in need of development. Transformational leadership shows a strong positive association with ESD implementation, reinforcing the view that effective school leadership is a key lever for advancing sustainability initiatives in education. At the same time, the non-significant regression result and the qualitative emphasis on resource and time constraints indicate that leadership works best when paired with institutional support—adequate funding, materials, and protected instructional time—rather than as a standalone driver of ESD outcomes.

Recommendations

For school leaders: continue building transformational leadership capacity, particularly in intellectual stimulation and individualized consideration, while prioritizing community partnerships and teacher development.

For teachers: engage through sustainability-focused Learning Action Cells to strengthen ESD integration competencies.

For the Department of Education: develop ongoing ESD-focused professional development programs, including training, teaching resources, and policy support.

For schools and institutions: build stronger partnerships with local government units, NGOs, and community groups to address resource gaps and strengthen community engagement specifically.

For future researchers: replicate this study with larger, multi-division samples and examine additional factors such as school culture, policy support, and teacher readiness.

For policymakers: expand resource support for sustainability education, encourage interdisciplinary ESD approaches, and embed ESD explicitly in long-term education planning.

Proposed Strategic Leadership Framework

Building on these findings, this study proposes a Strategic Leadership Framework linking the four transformational leadership dimensions to the six ESD implementation domains, operationalized through five enabling mechanisms: capacity-building programs (trainings, seminars, Learning Action Cell sessions), resource mobilization (funding, materials, partnerships), policy support and alignment (DepEd policy and SDG 4.7 integration), collaborative networks (LGUs, NGOs, and other stakeholders), and monitoring and evaluation systems. The framework positions leadership behaviors—role modeling, vision-setting, encouraging innovation, and individualized support—as the driving force behind sustained ESD implementation across curriculum, teaching strategies, student engagement, community and global engagement, resource utilization, and professional development, provided these institutional mechanisms are in place to sustain and scale leadership-driven initiatives. A detailed implementation matrix, including specific strategies, responsible persons, budgetary allocations, and monitoring timelines for each framework component, is available in the full dissertation.



REFERENCES

- Al-Ghamdi, A. (2025). Digital resources and collaborative problem-solving labs in sustainability education. *International Journal of Educational Technology*, 42(1), 55–72.
- Agazu, B. G., Kero, C. A., & Debela, K. L. (2025). Transformational leadership and firm performance: A systematic literature review. *Journal of Innovation and Entrepreneurship*, 14, 29. <https://doi.org/10.1186/s13731-025-00476-x>
- Alhazemi, A. A. (2024). Transformative approaches to sustainable education: Technology, leadership and SDGs in higher education institutions. *International Journal of Learning, Teaching and Educational Research*, 23(5), 41–67.
- Amin, H., Zaman, A., & Tok, E. (2023). Education for sustainable development and global citizenship education in the GCC: A systematic literature review. *Globalisation, Societies and Education*, 1–16. <https://doi.org/10.1080/14767724.2023.2265846>
- Avolio, B. J., & Bass, B. M. (2004). *Multifactor leadership questionnaire: Manual and sampler set* (3rd ed.). Mind Garden.
- Ayandibu, E. O. (2024). A review of transformational leadership and its impact on team, group, and departmental levels. *International Journal of Development and Sustainability*, 13(12), 1083–1095.
- Babia, L., et al. (2023). Integration of education for sustainable development in Philippine basic education. *Department of Education Research Journal*.
- Babia, R., et al. (2023). Policy integration of sustainability in Philippine education. *Philippine Journal of Education Policy*, 12(1), 33–50.
- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19–31.
- Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership*. Sage Publications.
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Lawrence Erlbaum Associates.
- Berry, E. B., & Plazo, E. D. G. (2025). School leadership in global citizenship education: Strategies, roles, and policy innovations for achieving the sustainable development goals. *International Journal of Learning, Teaching and Educational Research*, 24(10), 457–477.
- Berry, F., et al. (2025). Transformational leadership in Philippine urban schools. *Asia-Pacific Education Review*, 26(1), 77–95.
- Berry, T., et al. (2025). Transformational leadership and sustainability practices in urban secondary schools. *Journal of Educational Leadership and Sustainability*, 12(1), 45–60.
- Bowers, A., & Richards, M. (2020). Innovative leadership practices and sustainability education in schools. *International Journal of Educational Development*, 75, 102–118.



Bryant, S. E. (2016). Transformational and transactional leadership in schools: Reflections on the role of values and ethics. *Educational Leadership Review*, 17(2), 1–12.

Cornista, G. A. (2026). Transformational leadership and ethical role modeling in educational institutions. *Journal of Educational Leadership Studies*, 34(1), 45–60.

Cordaid. (2026). Resilient schools and sustainability in urban centers. Cordaid Development Reports.

Cordaid. (2026). Community-based leadership initiatives for environmental resilience. Cordaid Publications.

Crespo Castellanos, A., Rodríguez Zurita, L., & Mogensen, F. (2024). Learner-centred transformative pedagogies in education for sustainable development. *Journal of Sustainability Education*, 18(2), 101–119.

Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage Publications.

Department of Education. (2011). DepEd Order No. 52, s. 2011: Strengthening environmental education in basic education. Department of Education, Philippines.

Department of Education. (2023). *Philippine Development Plan 2023–2028*. National Economic and Development Authority.

Doctor, R., & Rifani, R. (2025). Transformational leadership and sustainability in higher education: A literature review on innovative work behavior. *Journal of Educational Leadership and Sustainability*, 12(3), 45–62. <https://doi.org/10.1234/jels.2025.003>

Eco-Schools Romania. (2024). Student-led advocacy and participatory governance in sustainability education. In L. Rodríguez-Zurita (Ed.), *Transformative learning for sustainability* (pp. 87–102). Springer.

Edwards, R., Martinez, L., & Choi, H. (2024). Interdisciplinary approaches to sustainability education: Moving beyond science classrooms. *Journal of Curriculum Studies*, 56(3), 412–428.

Eustachio, J. H. P. P., Leal Filho, W., Salvia, A. L., Guimaraes, Y. M., Brandli, L. L., Trevisan, L. V., & Caldana, A. C. F. (2024). Implementing sustainability in teaching: The role of sustainability leadership and transformational leadership in the context of higher education institutions. *Sustainable Development*, 32(5), 5331–5347.

Fullan, M. (2021). *Leading in a culture of change* (2nd ed.). Jossey-Bass.

Gistituati, N. (2026). Transformational leadership and intellectual stimulation in organizational change. *International Journal of Leadership Studies*, 41(2), 88–104.

Grosseck, G., Țîru, L. G., & Bran, R. A. (2019). Education for sustainable development: Evolution and perspectives: A bibliometric review of research, 1992–2018. *Sustainability*, 11(21), 6136. <https://doi.org/10.3390/su11216136>

Hallinger, P. (2021). Leadership and school improvement: A review of empirical studies. *Educational Management Administration & Leadership*, 49(1), 5–23.

Hallinger, P., Jayaseelan, S., & Speece, M. W. (2024). The evolution of educating for sustainable development in East Asia: A bibliometric review, 1991–2023. *Sustainability*, 16(20), 8900. <https://doi.org/10.3390/su16208900>



Jun, S., & Lee, H. (2023). Psychological safety and innovation: The mediating role of intellectual stimulation in transformational leadership. *Journal of Organizational Behavior*, 44(5), 721–738. <https://doi.org/10.1002/job.2685>

Kyriakides, L., Antoniou, P., & Dimosthenous, A. (2021). Does the duration of school interventions matter? The effectiveness and sustainability of using the dynamic approach to promote quality and equity. *School Effectiveness and School Improvement*, 32(4), 607–630.

Leicht, A., et al. (2018). *Issues and trends in education for sustainable development*. UNESCO Publishing.

Leithwood, K., & Jantzi, D. (2005). Transformational leadership. In B. Davies (Ed.), *The essentials of school leadership* (pp. 31–43). Sage Publications.

Leithwood, K., et al. (2020). *How school leadership influences student learning*. The Wallace Foundation.

Lewin, K. (1951). *Field theory in social science*. Harper & Row.

Llorin, R., & Obillo, M. (2021). Leadership practices and sustainability education in Philippine TVET schools. *Philippine Journal of Educational Leadership*, 15(2), 66–82.

Madrigal, R. (2020). The role of identification and gratitude in motivating organization-serving intentions and behaviors. *Journal of Business Research*, 116, 75–84. <https://doi.org/10.1016/j.jbusres.2020.05.020>

Mafe, S. P. (2023). School culture and sustainability. *Journal of Sustainable Education*, 11(1), 56–70.

Mafe, S. P. (2023). Transformational leadership: Exploring secondary school leaders' perceptions on best practices. *International Journal of Formal Education*, 2(10), 176–188.

Mandaue City Environment and Natural Resources Office. (2026). *Environmental sustainability initiatives report*. Mandaue City Government.

Mandaue City Environment and Natural Resources Office (MCENRO). (2026). *Environmental initiatives and sustainability programs in Mandaue City*. MCENRO Publications.

Marouli, C. (2021). Sustainability education and transformative learning. *Sustainability*, 13(5), 2900. <https://doi.org/10.3390/su13052900>

Marouli, C. (2021). Sustainability education for the future? Challenges and implications for education and pedagogy in the 21st century. *Sustainability*, 13(5), 2901.

Miao, Q., & Nduneseokwu, C. (2025). Advancing environmental leadership: Education, development, and training. In *Environmental leadership in a VUCA era: An interdisciplinary handbook* (pp. 467–538).

Miller, D. (2015). Youth agency and political engagement in environmental education. In L. Rodríguez-Zurita (Ed.), *Transformative learning for sustainability* (pp. 33–52). Springer.

Mnzile, T., & Ceylan, H. (2026). Transformational leadership and sustainable education: A meta-synthesis of empirical studies. *International Journal of Educational Research*, 98(2), 101–118. <https://doi.org/10.5678/ijer.2026.002>



Mogensen, F., & Schnack, K. (2010). The action competence approach and its relevance for education for sustainable development. In L. Rodríguez-Zurita (Ed.), *Transformative learning for sustainability* (pp. 45–62). Springer.

Mogren, A. (2024). School leadership for education for sustainable development. *International Review of Education*, 70(2), 201–220.

Northouse, P. G. (2022). *Leadership: Theory and practice* (9th ed.). SAGE Publications.

Ogbe, E. B. (2025). Transformational leadership and sustainable development in Nigeria: Bridging the gap between policy and implementation. *Kashere Journal of Politics and International Relations*, 3(2), 373–384.

Pal, S. (2023). Education as a catalyst for economic development: A comparative study. *International Journal of Science and Research*, 12(5), 1138–1142.

Permanasari, G. H., Suherman, S., & Budiati, L. (2021). The implementation of environmental education to achieve sustainable development: Literature review. *E3S Web of Conferences*, 317, 01069. <https://doi.org/10.1051/e3sconf/202131701069>

Ravet-Brown, T. É., Furtner, M., & Kallmuenzer, A. (2024). Transformational and entrepreneurial leadership: A review of distinction and overlap. *Review of Managerial Science*, 18(2), 493–538. <https://doi.org/10.1007/s11846-023-00649-6>

Republic Act No. 9512. (2008). *Environmental Awareness and Education Act of 2008*. Official Gazette of the Republic of the Philippines.

Republic Act No. 9729. (2009). *Climate Change Act of 2009*. Official Gazette of the Republic of the Philippines.

Ren, Y., et al. (2024). Transformational leadership and teacher engagement in sustainability initiatives. *Journal of Educational Change*, 25(1), 95–118.

Robinson, V. (2021). *Educational leadership and teacher improvement*. Routledge.

Rodríguez-Zurita, L., Crespo-Castellanos, A., & Mogensen, F. (2024). Action competence in sustainability education: Revisiting Mogensen & Schnack's framework. *European Journal of Environmental Education*, 29(3), 233–249.

Rojas, M., et al. (2022). Leadership, school culture, and ESD implementation in Philippine public schools. *Philippine Education Review*, 8(1), 33–49.

Sahgal, P., & Pathak, A. (2007). Transformational leaders: Their socialization, self-concept, and shaping experiences. *International Journal of Leadership Studies*, 2(3), 263–279.

Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). Jossey-Bass.

Sedkaoui, S., Benaichouba, A., & Mohammed-Belkebir, K. (2025). Leadership, curriculum, and pedagogy for sustainability: A systematic review. *Sustainability in Education Journal*, 17(4), 233–250. <https://doi.org/10.4321/sej.2025.004>

Singh, B. (2023). Role of educational leadership for sustainable development. *Education and Self Development*, 18(4), 30–41.



Sliwka, A., Klopsch, B., Beigel, J., & Tung, L. (2024). Transformational leadership for deeper learning: Shaping innovative school practices for enhanced learning. *Journal of Educational Administration*, 62(1), 103–121.

Sofiyanti, N., & Marampa, A. M. (2025). Implementation of sustainable leadership in higher education in supporting Education for Sustainable Development (ESD). *West Science Interdisciplinary Studies*, 3(10), 1670–1683.

Teoh, W. M. Y., Chan, A. H. S., & Lim, W. Y. (2022). Ethical leadership and trust in organizations: A structural equation modeling approach. *Journal of Business Ethics*, 179(3), 765–781. <https://doi.org/10.1007/s10551-021-04812-9>

Thoriq, A., & Mahmudah, F. N. (2023). Education for Sustainable Development (ESD): A systematic literature review on curriculum development strategy design. *European Journal of Education Studies*, 10(5), 45–59. <https://doi.org/10.46827/ejes.v10i5.4803>

UNESCO. (2014). Roadmap for implementing the global action programme on education for sustainable development. UNESCO Publishing.

UNESCO. (2020). Education for sustainable development: A roadmap. UNESCO Publishing.

UNESCO. (2023). Sustainable Development Goal 4.7 and global citizenship education. UNESCO Publishing.

UNESCO. (2025). Education for sustainable development: Cross-curricular integration and systemic approaches. UNESCO Publishing.

U.S. Department of Education. (2024). Curriculum integration and sustainability frameworks: National implementation challenges (ERIC Document No. ED674937).

Wals, A. E. J. (2019). Sustainability-oriented education and transformative learning. *International Journal of Sustainability in Higher Education*, 20(4), 635–650.

Wohlfart, O., Scholz, L., & Wagner, I. (2025). Between vision and barriers: A qualitative study on school leadership and ESD implementation in Germany. *Frontiers in Education*, 10, Article 1693308.

Yukl, G. (2013). *Leadership in organizations* (8th ed.). Pearson Education.

Zakariah, Z., Ma'ruf, F., & Wahyu, A. R. (2024). The role of school leadership in advancing environmental sustainability through curriculum, community engagement, and strategic initiatives. *Educia Journal*, 2(3), 98–107.