Developing Green Leadership in Schools: A Principal's Journey Through Biographical Narrative Analysis for Environmental Sustainability

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Info Artikel	Abstract

This study identifies the successful green leadership practices of a primary school principal, serving as a reference for other educational leaders in responding to the global environmental crisis. The Biographical Narrative Interpretive Method (BNIM) was employed to explore the principal's leadership journey through narrative inquiry, with data collected through interviews, observations, and document analysis. Findings were analysed using BNIM procedures, presented thematically, and visualised using NVivo software. The study reveals patterns of green school leadership that contribute to the development of leadership Theory through three specific technical contributions. Methodologically, this research introduces BNIM as a novel approach to exploring environmental leadership development in educational sectors. Theoretically, it establishes an operational framework for green school leadership, comprising five personal values and six measurable leadership practices. It provides a proven implementation model for effectively addressing school environmental challenges. Research contributions are demonstrated through concrete solutions to school environmental problems, including the elimination of waste bins through the universal adoption of reusable containers by students and the transformation of the school into a pilot site for cultivating 60 horticultural trees, promoting sustainable ecological learning. Additionally, six measurable leadership strategies were implemented, encompassing the establishment of vision, sharing environmental knowledge, inspirational communication, stakeholder engagement, proactive behavior, and long-term commitment. These strategies effectively address waste management challenges, promote environmental awareness within the school community, and significantly contribute to the development of green leadership practices in educational institutions.

Abstrak
Penelitian ini mengidentifikasi praktik kepemimpinan hijau kepala sekolah di tingkat dasar untuk dijadikan referensi bagi pemimpin pendidikan lainnya. Urgensi penelitian ini muncul dari krisis lingkungan global dan menekankan pentingnya peran lembaga pendidikan dalam menjawab krisis tersebut. Metode Biographical Narrative Interpretive Method (BNIM) digunakan untuk mengeksplorasi perjalanan kepemimpinan kepala sekolah melalui pendekatan naratif dengan pengumpulan data melalui wawancara, observasi, dan studi dokumen. Temuan dianalisis menggunakan prosedur BNIM, disajikan secara tematik, dan divisualisasikan dengan aplikasi NVivo. Studi ini mengungkap pola kepemimpinan hijau yang berkontribusi pada pengembangan teori kepemimpinan melalui

tiga kontribusi teknis spesifik. Secara metodologis, penelitian memperkenalkan BNIM sebagai pendekatan baru dalam mengeksplorasi pengembangan kepemimpinan lingkungan di sektor pendidikan. Secara teoretis, menghasilkan framework operasional green school leadership yang terdiri dari lima nilai personal dan enam praktik kepemimpinan terukur. Secara praktis, menyediakan model implementasi yang terbukti efektif mengatasi isu lingkungan di sekolah. Kontribusi penelitian ini dipahami melalui solusi konkret terhadap permasalahan lingkungan sekolah, yaitu eliminasi tempat sampah melalui penggunaan wadah reusable oleh seluruh siswa, dan transformasi sekolah menjadi pilot site penanaman 60 pohon hortikultura untuk pembelajaran ekologi berkelanjutan. Di samping itu, implementasi enam strategi kepemimpinan terukur, meliputi penetapan visi, berbagi pengetahuan lingkungan, komunikasi inspiratif, pelibatan stakeholder, perilaku proaktif, dan komitmen jangka panjang. Strategi ini berhasil mengatasi tantangan manajemen limbah, meningkatkan kesadaran lingkungan komunitas sekolah, dan memberikan kontribusi penting bagi praktik kepemimpinan hijau dalam lembaga pendidikan.

INTRODUCTION

The global environmental crisis represents one of modern civilisation's most urgent challenges, manifesting through climate change, extreme weather events, pollution, biodiversity decline, and natural disasters. (Das et al., 2024; Podolskaya et al., 2021; Von Hagke et al., 2022). Educational institutions, particularly primary schools, play a crucial role in nurturing ecological awareness and environmental ethics among young learners. (Glavič, 2020). School principals emerge as key leaders who can integrate sustainability values into institutional culture, policies, and curricula through green leadership, a conceptual framework that directs leaders towards ecological responsibility by integrating environmental awareness, sustainability, and ethical principles into organisational governance. (Boeske, 2023; Zhong et al., 2025)This leadership approach is particularly significant as it develops environmentally responsible citizens, positions schools as proactive change agents, and creates a blueprint for sustainable practices that extend beyond school boundaries. (Afsar et al., 2020; Akinsemolu & Onyeaka, 2025).

Despite growing recognition of environmental challenges, significant research gaps persist in the field of green leadership within educational contexts. Most existing literature focuses on the industrial and corporate sectors, resulting in a considerable knowledge gap in educational settings. (Abourokbah et al., 2024; Ullah Khan et al., 2023; Zhong et al., 2025). Furthermore, discussions about green leadership in educational research predominantly focus on higher Education, neglecting school-level leadership perspectives and practices. (Aboramadan et al., 2024; Filho et al., 2020). This gap is particularly problematic as numerous school leaders feel uncertain about adopting green leadership principles, lacking concrete models and practical guidance for implementation. The absence of evidence-based approaches to environmental educational leadership creates a critical void that hinders the effective implementation of sustainability initiatives in primary education.

The Indonesian context presents unique opportunities to address these research gaps. Indonesia faces significant environmental challenges, including the annual deforestation of 115,459 hectares in 2022, urban air pollution, and waste management issues that generate 67.8 million tonnes of waste yearly. Government initiatives like the Adiwiyata Programme, launched in 2006, aim to enhance school environmental awareness, yet implementation varies widely across regions. (Djirong et al., 2024; Lithanta et al., 2024). Schools in West Java, particularly Bandung, demonstrate notably positive results, creating opportunities to study successful green leadership models in specific regional contexts where effective practices have emerged.

This study addresses substantive and methodological gaps by employing the Biographical Narrative Interpretive Method (BNIM) to capture principals' leadership journeys—an underutilised approach in educational leadership research. BNIM provides unique insights into identity evolution, decision-making contexts, and relationships between personal values and professional responsibilities through personal narratives that extend beyond self-reports to encompass social and temporal dimensions (Flynn, 2019b; Oliver & Fenge, 2025). This methodological innovation enables a deeper understanding of how school principals internalise, implement, and sustain green leadership principles within their professional practices, filling a critical methodological void in environmental educational leadership research.

This study makes significant contributions by identifying effective green leadership practices of a primary school principal, providing evidence-based guidance for educational leaders who promote environmental responsibility. The research addresses the urgent need for practical models in environmental educational leadership by answering the question: How has a primary school principal enacted green leadership within the Indonesian Education context? The study's novelty lies in three specific areas: (1) contextualising green leadership at the overlooked primary school level, (2) introducing BNIM as an innovative methodological approach for exploring leadership development journeys, and (3) providing actionable strategies through documented successful practices that principals can adapt for their contexts. Through biographical narrative inquiry, this research enhances understanding of environmental educational leadership and offers concrete guidance for school leaders committed to sustainability in their communities.
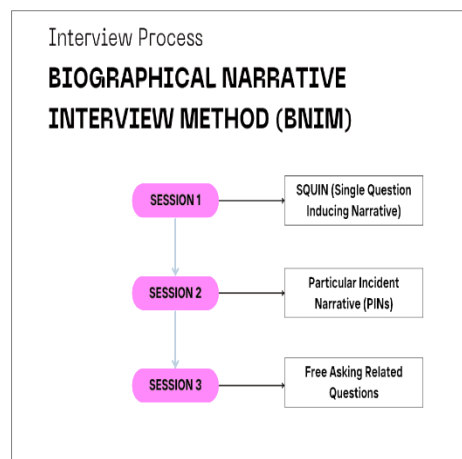
METHOD

This study employs a qualitative narrative methodology, using the Biographical Narrative Interpretive Method (BNIM), to explore the lived experiences of school principals in practicing green leadership. BNIM reconstructs an individual's biography through personal narratives, capturing the relationship between the lived life (chronological events) and the told story (narrated experiences) within social and temporal dimensions (Oliver & Fenge, 2025; Peta et al., 2018). The study adopts a social constructivist paradigm, recognising knowledge development's subjective and co-constructed nature through social interactions. (Pain, 2018).

The study was conducted at an Elementary School in West Bandung Regency, Indonesia, between February and April 2025. Participants were selected using BNIM principles, emphasising capturing lived experiences through detailed personal stories (Mooney, 2021; Oliver & Fenge, 2025).

Table 1. Research Participants with BNIM Codes

| BNIM Code	Pseudonym	Role	Selection Rationale	Data Contribution
P-GL-01	Jaka	School Principal	Key informant with proven success in cultivating an environmentally conscious school culture	Primary BNIM narrative interviews (3 sessions), observations
T-GL-02	Sani	Teacher	Additional perspective on the principal's leadership practices	Validation interviews, contextual insights
T-GL-03	Bulan	Teacher	Triangulation of findings and enrichment of understanding	Validation interviews, depth to narrative

Source: (Wengraf, 2001)

Figure 1. Interview Process with Biographical Narrative Interview Method (BNIM)

Complementary data sources**:** Direct observations of school activities and document analysis of environmental program reports and recognition certificates. All interviews were recorded and transcribed verbatim for accuracy.

The analysis followed BNIM's ten-stage process, focusing on two central elements: lived life (objective chronology) and told story (interpreted narrative). NVivo software was utilised to code narrative segments, visualise emerging themes, and support thematic interpretation. (Wengraf, 2001).
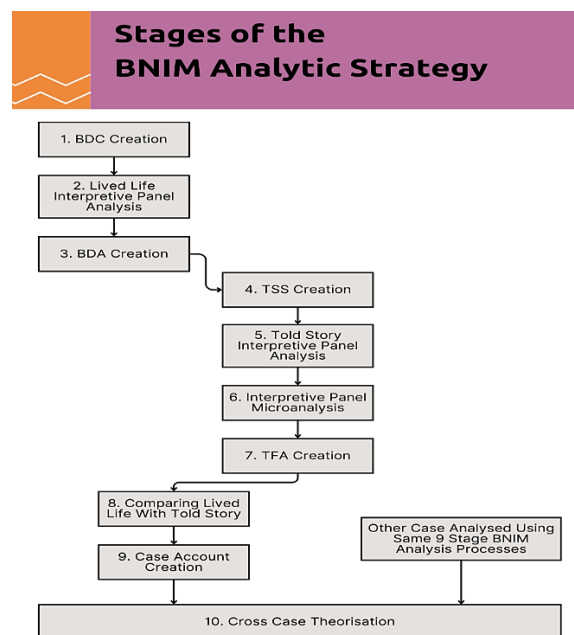
Source: (Wengraf, 2001)

Figure 2. Stages of the Biographical Narrative Interpretive Method Analytical Strategy

The process included:
1. Biographical Data Chronology (BDC) - organising life events chronologically
2. Biographical Data Analysis (BDA) - interpretive panel analysis
3. Text Structure Summary (TSS) - capturing narrative structure
4. Thematic Field Analysis (TFA) - microanalysis and thematic interpretation

5. Case synthesis - comparing lived life with a told story for theoretical insights

RESULT AND DISCUSSION
Result
The Journey of Becoming A Green School Principal

The biographical account reveals the principal's transformative journey from classroom teacher to environmental leader. P-GL-01 (Jaka, School Principal) spent over a decade as a dedicated classroom teacher, establishing a strong foundation of professional expertise. In 2021, driven by a growing interest in school leadership, he intentionally enrolled in the principal preparation program. After completing the program, Jaka was appointed headteacher in 2023.

Jaka's initial awareness of the environmental crisis emerged while participating in the Guru Penggerak program. Throughout this initiative, he engaged with educators from diverse regions and actively participated in discussions about innovative school programs. One area of interest that deeply resonated with him was the Tatanen di Bale Atikan (TdBA) program implemented in Purwakarta Regency. During the biographical narrative interview, P-GL-01 (Jaka, School Principal) spoke about this inspiration:

> "I was also active at the Guru Penggerak programme. I got some inspiration from Purwakarta Regency, where the local government had already implemented this green initiative. It is called TdBA." (Jaka)

Field observations revealed that Jaka's engagement in the Jabar Masagi programme significantly influenced his environmental awareness. Direct classroom observations revealed that he effectively facilitated discussions about ecological values with students, demonstrating the practical applications of environmental concepts through hands-on activities. Observational data indicated that these experiences shaped his identity as a principal dedicated to environmental concerns.

After becoming a headteacher, he faced a significant challenge with waste management. Observations during school visits documented the initial state of the school environment, including areas with scattered waste and limited environmental awareness among students. Rather than avoiding it, he saw it as a chance for meaningful change. P-GL-01 (Jaka, School Principal) noted that this commitment was vital for aligning leadership with ecological responsibility:

> "Well, when I first arrived here, one of the first things I did was help shape the school's vision and mission, yeah, and one of the goals was to support the creation of a healthy environment." (Jaka)

Document analysis of school records revealed that Jaka had served as a school principal for two years during this study. Environmental program reports and recognition certificates documented his impactful environmental changes. Observational evidence confirmed that waste bins became unnecessary as students adopted sustainable habits, bringing reusable containers instead of single-use plastics. Documentary evidence from the Department of Education showed that the school was chosen as a pilot site for a tree-planting initiative, receiving 60 horticultural fruit trees for hands-on environmental learning activities.

Practical Implementation of Green Leadership in Schools

P-GL-01 (Jaka, School Principal's) strategy for green leadership began with establishing a school vision and mission centred on fostering awareness of the environmental crisis. Observational data from staff meetings revealed that he worked with his teaching staff to initiate eco-friendly programmes. Direct classroom observations showed how he demonstrated his

leadership by imparting ecological knowledge to the school community, providing guidance, and enhancing awareness of environmental concerns.

This approach successfully inspired teachers to develop creative, environmentally-focused learning activities, as affirmed by T-GL-02 (Sani, Teacher), who backed Jaka's account:

> "We, the teachers at this school, often try to link things to love for the environment in our lessons. For example, if the classroom and the school are clean, the kids will feel more comfortable learning, you know?" (Sani)

Sustained field observations over three months documented Jaka's environmentally conscious leadership aimed at cultivating collective awareness and lasting commitment to addressing environmental challenges. Observational records showed his dedication to sustainability through consistent daily actions, including personal modelling of eco-friendly behaviours and regular environmental education sessions. However, interview data revealed significant challenges in fostering shared awareness, creating commitment, and ensuring long-term consistency. T-GL-03 (Bulan, Teacher) corroborated this in a separate interview, emphasising Jaka's difficulties while striving to maintain environmental leadership within the school community:

> "…Maintaining that commitment, yeah, and then ensuring ongoing consistency—that is the direction a headteacher needs to take in their leadership, but honestly, it is not an easy thing to do…" (Bulan)

The analysis shows that P-GL-01 (Jaka, School Principal's) green school leadership focuses on creating a clear vision, sharing environmental knowledge, motivating and involving the school community, displaying proactive behaviour, encouraging collaboration among stakeholders, and advocating for a long-term commitment.

Figure 3 visually represents these practices, created with NVivo, emphasising essential elements of his green leadership within the school environment. Documentary evidence further supports these findings, including photographs of environmental initiatives, waste management systems, and tree-planting activities.
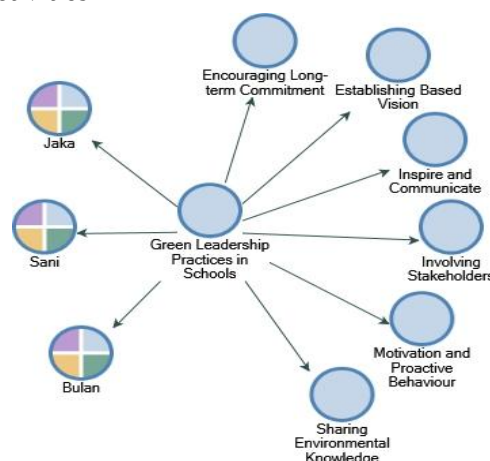
Source: Data Processed

Figure 3. Visualisation of Green Leadership Practices in Schools

Conceptualising the Green Leadership Framework for School Principals

This analysis compares P-GL-01 (Jaka, School Principal's real-life experiences with his narrative, leading to comprehensive case studies and theoretical insights. Biographical data analysis

examined significant events from his tenure as a green school principal for recurring patterns, providing a basis for generalisations and new theoretical insights.

P-GL-01 (Jaka, School Principal) views green school leadership as more than administrative tasks; it embodies an ecological mindset and a moral commitment to environmental protection. Extended field observations confirmed that his leadership aligns personal values with the institution's vision, transforming daily practices into sustainability initiatives. Observational evidence demonstrated that Jaka sees green leadership as fostering collective environmental responsibility rather than imposing top-down directives.

Interview analysis revealed that he acts as an instructional leader, role model, community collaborator, and catalyst for change. Documentary analysis of school policies and environmental program reports supported these perspectives, which are rooted in personal stories and challenges, creating a unique concept of green school leadership that integrates vision, collaboration, and transformative action.

Table 1 presents the school's principal green leadership conceptualisation based on a comprehensive analysis and reconstruction of Jaka's experience, supported by triangulated data from interviews, observations, and document analysis.

Table 2. The conceptualisation of The Principal Green Leadership

Aspects	Conceptualisation for the Study
Definition	Green school leadership refers to a principal's intentional and values-driven approach to integrating environmental sustainability into school culture, policies, and practices by modelling eco-conscious behaviour, encouraging collective responsibility, and fulfilling a moral obligation to inspire transformative change within the educational community.
Personal Values	Self-Transcendence Green Altruism Moral Obligation Openness to Change Integrity
Leadership Practices	Establishing a Vision Sharing Environmental Knowledge Inspiring and Communicating Involving Stakeholders Motivating and Proactive Behaviour Encouraging Long-term Commitment

Source: Data Processed from Multiple Sources (Interviews, Observations, Documents)

DISCUSSION

Critical Analysis of Green Leadership Development

The biographical narrative of Jaka's transformation reveals a critical paradox in green leadership development that warrants further examination. While the study demonstrates successful individual transformation from teacher to environmental leader, the findings expose a fundamental tension between personal ecological awakening and institutional constraints that

existing literature fails to adequately address. Jaka's journey highlights how the emergence of green leadership is neither linear nor predictable, challenging conventional leadership development models that assume a systematic progression through defined stages.

Critically, this research unveils three methodological limitations in current green leadership scholarship: first, the over-reliance on corporate-derived frameworks that inadequately capture educational contexts; second, the absence of temporal analysis in understanding leadership identity formation; and third, the neglect of biographical factors that shape environmental consciousness. Jaka's case demonstrates that green leadership is fundamentally an identity work process rather than a skill acquisition endeavour, requiring leaders to reconcile personal values with institutional demands in ways that conventional leadership theories do not anticipate.

The study's most significant critical insight concerns the sustainability of individual-driven change within systemically unsupportive environments. While Jaka achieved remarkable local transformation, the research raises uncomfortable questions about scalability and replicability without broader institutional reform. This tension between micro-level success and macro-level sustainability challenges optimistic assumptions about green leadership as a universal solution to environmental challenges in education.

The research identifies a trend in green school leadership that aids in developing green leadership theory. This insight highlights key elements such as the evolution into a green leader, daily practices, personal values, and the essential role of school principals in promoting sustainability within the community. The study indicates that the journey to becoming a green leader starts with an awareness formed by both personal experiences and external factors. These insights are consistent with earlier studies suggesting that green leadership often follows a path akin to the Buddhist narrative, where leaders respond to an inner calling that ignites their commitment to adopting environmentally responsible leadership. (Heizmann & Liu, 2018). Furthermore, the findings support previous research on Petra Kelly's biography, a notable green leadership figure whose dedication stemmed from both intrinsic belief and external influences. (Richter, 2015).

Self-awareness is essential for effective leadership, especially in tackling pressing environmental challenges. (Carden et al., 2022; Gómez-Leal et al., 2022). Self-awareness is a leader's ability to reflect on their values, motivations, and behaviours. (Carden et al., 2022). Green leadership involves recognising the broader ecological consequences of one's choices and fostering a mindset centred on responsibility and sustainability. Internal elements influence self-awareness, such as personal experiences, ethical beliefs, value systems, and external factors, such as institutional demands, regulatory structures, and community involvement. (Jaakkola et al., 2022). Leaders who nurture self-awareness are more likely to drive significant change, steering their organisations towards a culture that respects and safeguards the environment. (Constantia et al., 2022).

The findings suggest that becoming a green leader in a school setting involves having a forward-thinking vision firmly rooted in a dedication to tackling environmental challenges. This journey starts with articulating a robust vision focused on environmental stewardship. A collective green vision is a definitive strategic compass for achieving the shared environmental objectives and aspirations that the organisation's staff embraces. (Ma et al., 2023; Younas et al., 2023). Principals who effectively communicate this vision to teachers, students, and the wider school community play a vital role in cultivating a mutual dedication to sustainable practices. (Alkaher & Gan, 2020). When adopted by everyone in the school, a collective green vision fosters a unified

approach, promotes eco-friendly behaviours, and enhances the school's capacity to confront environmental issues. (Akinsemolu & Onyeaka, 2025). Furthermore, this vision provides direction and establishes a moral framework for fostering a culture of ecological awareness and accountability throughout the educational environment.

Jaka's evolving leadership identity showcases a process of identity work in which professional identities develop through significant experiences and reflective practice. His environmental awakening mirrors findings from a study on sustainability leadership development, highlighting how leaders often encounter "trigger events" that ignite their environmental awareness. (Heizmann & Liu, 2018). For Jaka, the Guru Penggerak and Jabar Masagi programs served as transformative experiences, aligning with the development of a "sustainability mindset development" through experiential learning. Additionally, Jaka's account illustrates the relationship between personal values and professional obligations, a crucial tension in authentic leadership development. By framing ecological awareness as a "moral obligation," he emphasises the ethical aspect of sustainability leadership, viewing environmental stewardship as a fundamental ethical duty rather than just an organisational approach.

The findings additionally highlight the practical aspects of green leadership implemented by the school principal. As mentioned earlier, this leadership style commenced with developing a school vision and mission that explicitly incorporates environmental education. Furthermore, the principal exhibited leadership by providing clear direction and consistently disseminating environmental knowledge, which supports and builds upon previous research. (Al-Husseini et al., 2019; Chen et al., 2023; C. Liao & Li, 2019; Malik et al., 2024; Suriyankietkaew et al., 2022; Ullah Khan et al., 2023). This knowledge-sharing process is vital for instilling ecological values throughout the school community, enabling teachers and students to participate effectively in sustainability initiatives and adopt environmentally responsible behaviours.

This study reveals that the green leadership practices of the school principal inspire and effectively communicate with the entire school community. The principal consistently promotes environmental values, seizing every opportunity to advocate for ecological awareness and collective responsibility. Beyond communication, the principal regularly motivates students and staff by recognising their efforts, offering practical support for sustainability initiatives, and fostering collaboration. These actions enhance environmental engagement and nurture a shared culture of care and responsibility, which is essential for the long-term success of green education in schools. (Gericke & Torbjörnsson, 2022).

The school's green leadership, driven by the principal, is rooted in collaboration and active partnerships with all stakeholders, including teachers, students, parents, and the wider community. This inclusive strategy transforms environmental initiatives from top-down orders into shared responsibilities everyone embraces (Rushton et al., 2025). The principal fosters a collective sense of ownership regarding the school's environmental objectives by promoting open dialogue, collaborative planning, and mutual support (Griffiths et al., 2020; Haiyan & Allan, 2020). Such teamwork is essential for fostering long-term commitment as it enhances regular participation, strengthens shared values, and incorporates diverse perspectives and resources. Ultimately, this collaborative approach improves the school's ability to achieve meaningful and sustainable progress in fostering environmental awareness (Griffiths et al., 2020).

Based on the research findings, the study defines the concept of green school leadership as a principal's intentional and values-driven approach to integrating environmental sustainability into school culture, policies, and practices by modelling eco-conscious behaviour, encouraging

collective responsibility, and fulfilling a moral obligation to inspire transformative change within the educational community. This definition aligns with previous studies that characterise green leadership as encompassing core elements such as moral values, transformative processes, empowerment, inclusivity, environmental advocacy, and long-term commitment. (Aboramadan et al., 2022, 2024; Alam, 2025; Y. Liao, 2022; Sanusi et al., 2023; Su et al., 2020; Zhong et al., 2025). This study's formulation indicates that green leadership encompasses a broad and generalised definition. As a result, other academic works have introduced more precise terms to identify specific leadership styles or models related to the environmental field. Table 2 highlights several conceptual terms derived from established leadership frameworks created by experts to enhance the understanding and articulation of the theoretical framework of green leadership.

Table 3. Theoretical Framework of Green Leadership

Theoretical Framework	Definition
Green Transformational Leadership	Green transformational leadership, first conceptualized within the framework of transformational leadership introduced by Burns and expanded by Bass, refers to a leadership style that inspires and motivates followers to adopt pro-environmental values, behaviors, and sustainability-oriented organizational practices (Sanusi et al., 2023).
Green Servant Leadership	Initially introduced by Robert K. Greenleaf in his 1970 essay *The Servant as Leader*, green servant leadership is defined as an environmentally centred leadership approach that emphasises serving and empowering employees while fostering sustainability, voluntary pro-environmental behaviour, and green creativity to enhance organisational environmental performance (McQuade et al., 2021; Zafar et al., 2025).
Green Inclusive Leadership	First introduced in 2006, green inclusive leadership is a leadership approach that integrates environmental values into inclusive practices by encouraging participation, fairness, and shared responsibility to promote pro-environmental behaviours among employees (Aboramadan et al., 2022; Veli Korkmaz et al., 2022).
Environmental Leadership	Initially introduced by Berry and Gordon in 1993, environmental leadership refers to a leader's capacity to inspire and mobilise individuals or organisations toward long-term ecological

	sustainability through values-driven actions, environmental vision, and proactive green innovation practices that address ecological challenges and stakeholder expectations (Kim et al., 2020; Su et al., 2020).
Sustainability/Sustainable Leadership	Sustainability/Sustainable leadership is a leadership style that integrates economic, social, and environmental goals to create long-term value for stakeholders while fostering organisational resilience and sustainability (Eustachio et al., 2023; Iqbal & Ahmad, 2021; Liao, 2022).

Source: Data Processed

This study emphasises that the connection between school principals' values and the school community's values regarding the environment significantly influences their green leadership. Value congruence indicates how closely a leader's personal beliefs align with the organisational context. (Asante, 2023). When principals possess strong ecological values, such as a commitment to nature, long-term responsibility, and intergenerational fairness, these principles naturally impact the degree of sustainability integrated into the school's operations. (Bouman et al., 2021; Yasir et al., 2023). The results indicate that aligning personal and institutional values fosters a collective dedication to environmental initiatives. (Yasir et al., 2023). These values start with the leader and extend outward, cultivating a shared perspective among staff, students, and stakeholders. Consequently, the school embraces green initiatives and nurtures a culture where ecological responsibility is integral to its identity.

The values exhibited by the school principal, as revealed in this study, include self-transcendence, green altruism, moral obligation, openness to change, and integrity. These values align with previous studies, indicating that leaders in the industry 4.0 era, especially those focused on environmental concerns, should possess traits such as a willingness to innovate, priorities centred on conservation, kindness, universalism, and a solid grounding in general self-transcendence (Alam, 2025). These values influence leadership styles and are essential for fostering ethical and sustainable organisational cultures. The findings provide valuable insights for human resource development in forward-looking institutions and enhance understanding of key personal traits characterising environmentally aware leadership.

A deeper insight into the personal values embodied by school principals as green leaders reveals several important dimensions. Self-transcendence indicates a leader's dedication to goals that surpass personal interests, showcasing a strong connection to the larger ecological and social fabric (Theissen et al., 2024). Green altruism reflects a genuine concern for the well-being of our environment and future generations, evidenced by consistent actions that prioritise ecological harmony over convenience and profit (Mansoor & Paul, 2022). Moral obligation and integrity highlight the leader's internalised ethical guidelines, steering decisions towards what is beneficial for the environment and ensuring honesty in their leadership practices. Additionally, openness to change demonstrates a readiness to welcome new ideas and modify existing systems to promote environmental sustainability. These values are crucial in fostering green school leadership,

empowering principals to exemplify environmental responsibility, motivating collective action, and weaving sustainable practices into the school's culture and daily activities.

The impact of green leadership in schools, as demonstrated by the principal's actions, fosters a culture of ecological responsibility among students, staff, and the entire school community. This study makes a practical contribution by offering a concrete model for sustainable leadership practices in primary education. Theoretically, it enriches the dialogue on educational leadership by integrating environmental values into leadership narratives and expanding the application of the Biographical Narrative Interpretive Method (BNIM) in the study of ecological leadership.

Table 4. Theory Reconstruction and Research Gap Closure

Aspect	Previous Research Gap	How This Study Addresses the Gap	Theory Reconstruction Achieved
Sectoral Focus	Green leadership research concentrated on industrial/corporate sectors	Explicitly focused on the primary education context with biographical methodology	Green school leadership framework adapted for educational institutions
Educational Level	Discussions primarily focused on higher education, with a notable neglect of primary school leadership.	Examined primary school principals' practices through lived experiences	Primary-level green leadership practices and implementation strategies
Methodological Approach	Quantitative surveys and corporate case studies dominated the field	Introduced BNIM for capturing leadership development journeys	Biographical narrative as a tool for understanding leadership identity formation
Implementation Models	Lack of concrete, evidence-based implementation models for school leaders	Provided an actionable 6-strategy framework with documented success	Operational model with measurable leadership practices and personal values
Values Integration	Limited understanding of personal values in environmental leadership development	Identified five core personal values through biographical analysis	Personal-institutional value alignment framework for sustainable leadership

Source: Research Analysis

Table 5. Research Novelty and Innovation Contributions

Innovation Area	Novelty Contribution	Significance for Field	Future Research Implications
Methodological Innovation	The first application of BNIM in green educational leadership research	Opens a new avenue for biographical inquiry in sustainability leadership	Can be replicated across different educational contexts and leadership types
Theoretical Innovation	Integration of biographical identity work with green leadership development.	Challenges to Linear Leadership Development Models	Provides the foundation for identity-based leadership theories in environmental education
Empirical Innovation	Documentation of successful waste elimination and environmental transformation	Provides measurable outcomes of green leadership implementation	Enables evidence-based policy development for environmental education programs
Conceptual Innovation	A framework linking personal values with institutional environmental practices	Bridges individual psychology and organisational sustainability	Informs leadership development programs and recruitment strategies
Practical Innovation	6-strategy actionable model with documented implementation success	Provides a replicable model for other principals and schools	It can be adapted for various educational institutional contexts
Cultural Innovation	Contextual adaptation within the Indonesian educational and environmental policy framework	Demonstrates cultural sensitivity in leadership research	Encourages culturally-grounded approaches to environmental leadership studies

Source: Research Analysis

CONCLUSION

Through three key contributions, this study successfully addresses how a primary school principal enacted green leadership within the Indonesian education context. Methodologically, it introduces BNIM as an innovative approach to exploring environmental leadership development in educational settings. Theoretically, the research develops a comprehensive framework comprising five core personal values (self-transcendence, green altruism, moral obligation, openness to change, and integrity) and six measurable leadership practices (establishing a vision, sharing environmental knowledge, inspiring communication, involving stakeholders, proactive behaviour, and long-term commitment). Practically, the study demonstrates concrete solutions, including successful waste bin elimination, school transformation into a pilot site for cultivating 60 horticultural fruit trees, and enhanced environmental awareness throughout the school

community, providing actionable guidance for educational leaders seeking to implement sustainable practices.

This study acknowledges three key limitations: a single-case design within the West Bandung context limits generalizability, a two-year temporal scope may not capture long-term sustainability, and individual principal focus overlooks broader systemic factors. Future research should expand to multi-stakeholder perspectives, conduct cross-cultural comparative studies across different educational systems, pursue longitudinal investigations of leadership sustainability, and integrate local wisdom values with green leadership strategies across various educational levels. Additionally, researchers should explore technology-enhanced environmental education programs and develop policy frameworks that support green leadership implementation in diverse educational contexts.

REFERENCES

Aboramadan, M., Barbar, J., Alhabil, W., & Alhalbusi, H. (2024). Green servant leadership and green voice behaviour in Qatari higher education: does climate for green initiative matter? *International Journal of Sustainability in Higher Education*, *25*(3), 539–555. https://doi.org/10.1108/IJSHE-03-2023-0112

Aboramadan, M., Crawford, J., Türkmenoğlu, M. A., & Farao, C. (2022). Green inclusive leadership and employee green behaviors in the hotel industry: Does perceived green organisational support matter? *International Journal of Hospitality Management*, *107*(103330). https://doi.org/10.1016/j.ijhm.2022.103330

Abourokbah, S., Bajaba, S., & Yaqub, M. Z. (2024). Leading the green wave: How and when green transformational leadership cultivates employee green creativity. *Acta Psychologica*, *250*, 104503. https://doi.org/10.1016/j.actpsy.2024.104503

Afsar, B., Maqsoom, A., Shahjehan, A., Afridi, S. A., Nawaz, A., & Fazliani, H. (2020). Responsible leadership and employee's proenvironmental behavior: The role of organisational commitment, green shared vision, and internal environmental locus of control. *Corporate Social Responsibility and Environmental Management*, *27*(1), 297–312. https://doi.org/10.1002/csr.1806

Ahsan, M. J. (2024). Green leadership and innovation: catalysts for environmental performance in Italian manufacturing. *International Journal of Organizational Analysis*. https://doi.org/10.1108/IJOA-04-2024-4450

Akinsemolu, A. A., & Onyeaka, H. (2025). The role of green education in achieving the sustainable development goals: A review. *Renewable and Sustainable Energy Reviews*, *210*, 115239. https://doi.org/10.1016/j.rser.2024.115239

Alam, M. N. (2025). Generation Z and Green Leadership: Shaping Sustainable Hospitality Practices in Bangladesh. *Journal of Culinary Science & Technology*, 1–46. https://doi.org/10.1080/15428052.2025.2481931

Albadarneh, A. M., Daradkah, A. M., Telfah, E. A., AlKhatib, F. Y., Mahmoud, A. M., Altaha'at, E. S., Al-Shunnaq, Y. A., Tawalbeh, M. S., & Ali, S. A. (2024). Green transformational leadership as an approach to achieving sustainable environmental development in Arab Universities. *Pakistan Journal of Life and Social Sciences (PJLSS)*, *22*(1), 3016–3048. https://doi.org/10.57239/pjlss-2024-22.1.00220

Al-Husseini, S., El Beltagi, I., & Moizer, J. (2019). Transformational leadership and innovation: the mediating role of knowledge sharing amongst higher education faculty. *International Journal of Leadership in Education*, *24*(5), 670–693. https://doi.org/10.1080/13603124.2019.1588381

Alkaher, I., & Gan, D. (2020). The role of school partnerships in promoting education for sustainability and social capital. *Journal of Environmental Education*, *51*(6), 416–433. https://doi.org/10.1080/00958964.2020.1711499

Asante, K. (2023). Hotels' green leadership and employee pro-environmental behaviour, the role of value congruence and moral consciousness: evidence from symmetrical and asymmetrical approaches. *Journal of Sustainable Tourism*, *32*(7), 1370–1391. https://doi.org/10.1080/09669582.2023.2229534

Boeske, J. (2023). Leadership towards sustainability: A review of sustainable, sustainability, and environmental leadership. *Sustainability*, *15*(16), 12626. https://doi.org/10.3390/su151612626

Bouman, T., van der Werff, E., Perlaviciute, G., & Steg, L. (2021). Environmental values and identities at the personal and group level. *Current Opinion in Behavioral Sciences*, *42*, 47–53. https://doi.org/10.1016/j.cobeha.2021.02.022

Carden, J., Jones, R. J., & Passmore, J. (2022). Defining Self-Awareness in the Context of Adult Development: A Systematic Literature Review. *Journal of Management Education*, *46*(1), 140–177. https://doi.org/10.1177/1052562921990065

Chen, X., Chen, Y., Zhang, X., & He, Q. (2023). Green transformational leadership and green innovation in megaprojects: Is green knowledge sharing a missing link? *Engineering, Construction and …*. https://doi.org/10.1108/ECAM-02-2023-0117

Constantia, C., Christos, P., & Papademetriou, A. Y. (2022). The Teacher as a Leader in Creating Environmental Awareness. *International Journal of Educational Reform*. https://doi.org/10.1177/10567879221139448

Črešnar, R., & Nedelko, Z. (2020). Understanding future leaders: How are personal values of generations Y and Z tailored to leadership in industry 4.0? *Sustainability*, *12*(11), 4417. https://doi.org/10.3390/su12114417

Dahinine, B., Laghouag, A., Bensahel, W., Alsolami, M., & Guendouz, T. (2024). Modelling the combined effect of green leadership and human resource management in moving to green supply chain performance enhancement in Saudi Arabia. *Sustainability*, *16*(10), 3953. https://doi.org/10.3390/su16103953

Das, S., Choudhury, M. R., Chatterjee, B., Das, P., Bagri, S., Paul, D., Bera, M., & Dutta, S. (2024). Unraveling the urban climate crisis: Exploring the nexus of urbanisation, climate change, and their impacts on the environment and human well-being – A global perspective. *AIMS Public Health*, *11*(3), 962–1001. https://doi.org/10.3934/publichealth.2024050

Djirong, A., Jayadi, K., Abduh, A., Mutolib, A., Mustofa, R. F., & Rahmat, A. (2024). Assessment of student awareness and application of eco-friendly curriculum and technologies in Indonesian Higher Education for supporting Sustainable Development Goals (SDGs): A case study on environmental challenges. *Indonesian Journal of Science and Technology*, *9*(3), 657–678. https://doi.org/10.17509/ijost.v9i3.74385

Eustachio, J. H. P. P., Caldana, A. C. F., & Leal Filho, W. (2023). Sustainability leadership: Conceptual foundations and research landscape. *Journal of Cleaner Production*, *415*, 137761. https://doi.org/10.1016/j.jclepro.2023.137761

Filho, W. L., Eustachio, J. H. P. P., Caldana, A. C. F., Will, M., Salvia, A. L., Rampasso, I. S., Anholon, R., Platje, J., & Kovaleva, M. (2020). Sustainability leadership in higher education institutions: An overview of challenges. *Sustainability*, *12*(9), 3761. https://doi.org/10.3390/su12093761

Fry, L. W., & Egel, E. (2021). Global leadership for sustainability. *Sustainability*, *13*(11). https://doi.org/10.3390/su13116360

Gericke, N., & Torbjörnsson, T. (2022). Supporting local school reform toward education for sustainable development: The need for creating and continuously negotiating a shared vision and building trust. *Journal of Environmental Education*, *53*(4), 231–249. https://doi.org/10.1080/00958964.2022.2102565

Glavič, P. (2020). Identifying key issues of education for sustainable development. *Sustainability*, *12*(16), 6500. https://doi.org/10.3390/su12166500

Gómez-Leal, R., Holzer, A. A., Bradley, C., Fernández-Berrocal, P., & Patti, J. (2022). The relationship between emotional intelligence and leadership in school leaders: a systematic review. *Cambridge Journal of Education*, *52*(1), 1–21. https://doi.org/10.1080/0305764X.2021.1927987

Griffiths, A. J., Alsip, J., Hart, S. R., Round, R. L., & Brady, J. (2020). Together We Can Do So Much: A Systematic Review and Conceptual Framework of Collaboration in Schools. *Canadian Journal of School Psychology*, *36*(1), 59–85. https://doi.org/10.1177/0829573520915368

Haiyan, Q., & Allan, W. (2020). Creating conditions for professional learning communities (PLCs) in schools in China: the role of school principals. *Professional Development in Education*, *47*(4), 586–598. https://doi.org/10.1080/19415257.2020.1770839

Heizmann, H., & Liu, H. (2018). Becoming green, becoming leaders: Identity narratives in sustainability leadership development. *Management Learning*, *49*(1), 40–58. https://doi.org/10.1177/1350507617725189

Iqbal, Q., & Ahmad, N. H. (2021). Sustainable development: The colors of sustainable leadership in learning organisation. *Sustainable Development*, *29*(1), 108–119. https://doi.org/10.1002/sd.2135

Iqbal, Q., & Piwowar-Sulej, K. (2022). Sustainable leadership in higher education institutions: social innovation as a mechanism. *International Journal of Sustainability in Higher Education*, *23*(8), 1–20. https://doi.org/10.1108/IJSHE-04-2021-0162

Jaakkola, N., Karvinen, M., Hakio, K., Wolff, L. A., Mattelmäki, T., & Friman, M. (2022). Becoming Self-Aware—How Do Self-Awareness and Transformative Learning Fit in the Sustainability Competency Discourse? *Frontiers in Education*, *7*. https://doi.org/10.3389/feduc.2022.855583

Kim, W. G., McGinley, S., Choi, H. M., & Agmapisarn, C. (2020). Hotels' environmental leadership and employees' organisational citizenship behavior. *International Journal of Hospitality Management*, *87*(102375). https://doi.org/10.1016/j.ijhm.2019.102375

Liao, C., & Li, H. (2019). Environmental education, knowledge, and high school students' intention toward separation of solid waste on campus. *International Journal of Environmental Research and Public Health*, *16*(9). https://doi.org/10.3390/ijerph16091659

Liao, Y. (2022). Sustainable leadership: A literature review and prospects for future research. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.1045570

Lithanta, A., Riniwati, H., Wahyudi, S., & Efani, A. (2024). Environmental education transformation: Sustainable technology model in Adiwiyata program. *Nongye Jixie Xuebao/Transactions of the Chinese Society for Agricultural Machinery*, *55*(10). https://doi.org/10.62321/issn.1000-1298.2024.10.1

Ma, X., Bashir, H., & Ayub, A. (2023). Cultivating green workforce: The roles of green shared vision and green organisational identity. *Frontiers in Psychology*, *14*. https://doi.org/10.3389/fpsyg.2023.1041654

Malik, M. S., Ali, K., Amir, M., Tariq, K., & … (2024). Green transformational leadership, environmental strategy, and green innovation: Mediated moderation of knowledge sharing and green absorptive capacity. *Pakistan Journal of* …. https://www.econstor.eu/handle/10419/301677

Mansoor, M., & Paul, J. (2022). Consumers' choice behavior: An interactive effect of expected eudaimonic well-being and green altruism. *Business Strategy and the Environment*, *31*(1), 94–109. https://doi.org/10.1002/bse.2876

Mcquade, K. E., Harrison, C., & Tarbert, H. (2021). Systematically reviewing servant leadership. *European Business Review*, *33*(3), 465–490. https://doi.org/10.1108/EBR-08-2019-0162

Mooney, J. (2021). How adults tell: A study of adults' experiences of disclosure to child protection social work services. *Child Abuse Review*, *30*(3), 193–209. https://doi.org/10.1002/car.2677

Moran, L., Green, L., & Warren, S. (2021). 'Reconceptualising internationalisation through students' eyes': Findings from a biographical study of female, international doctoral students in an Irish University. *Irish Journal of Sociology*, *29*(2), 187–214. https://doi.org/10.1177/0791603521997249

Oliver, L., & Fenge, L. A. (2025). 'Don't tell anyone anything': How do family secrets influence child-to-parent violence and abuse? *Qualitative Social Work*, 1–16. https://doi.org/10.1177/14733250251326607

Pain, H. (2018). Reflection/Commentary on a Past Article: "A Literature Review to Evaluate the Choice and Use of Visual Methods." *International Journal of Qualitative Methods*, *17*(1), 303–319. https://doi.org/10.1177/160940691201100401

Peta, C., Wengraf, T., & McKenzie, J. (2018). Facilitating the voice of disabled women: the biographic narrative interpretive method (BNIM) in action. *Contemporary Social Science*, *14*(3–4), 515–527. https://doi.org/10.1080/21582041.2018.1450520

Podolskaya, T., Kravchenko, G. V., & Shatila, K. (2021). Environmental crisis effect on environmental costs. *IOP Conference Series: Earth and Environmental Science*, *937*(2), 022036. https://doi.org/10.1088/1755-1315/937/2/022036

Richter, S. (2015). Petra Kelly, international Green leader on biography and the peace movement as resources of power in West German politics, 1979-1983. *German Politics and Society*, *33*(4), 80–96. https://doi.org/10.3167/gps.2015.330407

Sanusi, I., Farida, I., & Sopiah. (2023). Green transformational leadership: Systematic literature review. *Asian Journal of Economics and Business Management*, *2*(2), 511–521. https://doi.org/10.53402/ajebm.v2i2.314

Sekechi, M. (2020). Encapsulated sadness: Iranian migrants and exiles in London. *British Journal of Psychotherapy*, *36*(1), 76–92. https://doi.org/10.1111/bjp.12512

Şemin, F. K. (2019). Competencies of principals in ensuring sustainable education: Teachers' views. *International Journal of Evaluation and Research in Education*, *8*(2), 201–212. https://doi.org/10.11591/ijere.v8i2.18273

Siangchokyoo, N., Klinger, R. L., & Campion, E. D. (2020). Follower transformation as the linchpin of transformational leadership theory: A systematic review and future research agenda. *Leadership Quarterly*, *31*(1), 101341. https://doi.org/10.1016/j.leaqua.2019.101341

Su, X., Xu, A., Lin, W., Chen, Y., Liu, S., & Xu, W. (2020). Environmental leadership, green innovation practices, environmental knowledge learning, and firm performance. *SAGE Open*, *10*(2). https://doi.org/10.1177/2158244020922909

Suriyankietkaew, S., Krittayaruangroj, K., & Iamsawan, N. (2022). Sustainable Leadership Practices and Competencies of SMEs for Sustainability and Resilience: A Community-Based Social Enterprise Study. *Sustainability*, *14*(10). https://doi.org/10.3390/su14105762

Theissen, M. H., Theissen, H. H., & Gümüsay, A. A. (2024). Self-transcendent leadership: A meta-perspective. *European Management Review*, *21*(4), 854–870. https://doi.org/10.1111/emre.12640

Ullah Khan, R., Saqib, A., Abbasi, M. A., Mikhaylov, A., & Pinter, G. (2023). Green Leadership, environmental knowledge Sharing, and sustainable performance in manufacturing Industry: Application from upper echelon theory. *Sustainable Energy Technologies and Assessments*, *60*(103540). https://doi.org/10.1016/j.seta.2023.103540

Veli Korkmaz, A., van Engen, M. L., Knappert, L., & Schalk, R. (2022). About and beyond leading uniqueness and belongingness: A systematic review of inclusive leadership research. *Human Resource Management Review*, *32*(4), 100894. https://doi.org/10.1016/j.hrmr.2022.100894

Von Hagke, C., Hill, C., Hof, A., Rinder, T., Lang, A., & Habel, J. C. (2022). Learning from the covid-19 pandemic crisis to overcome the global environmental crisis. *Sustainability (Switzerland)*, *14*(17), 10545. https://doi.org/10.3390/su141710545

Wang, X., Zhou, K., & Liu, W. (2018). Value congruence: A study of green transformational leadership and employee green behavior. *Frontiers in Psychology*, *9*(OCT). https://doi.org/10.3389/fpsyg.2018.01946

Wengraf, T. (2001). *Qualitative Research Interviewing: Biographic Narrative and Semi-Structured Methods*. SAGE Publications.

Yasir, N., Babar, M., Mehmood, H. S., Xie, R., & Guo, G. (2023). The Environmental Values Play a Role in the Development of Green Entrepreneurship to Achieve Sustainable Entrepreneurial Intention. *Sustainability*, *15*(8), 6451. https://doi.org/10.3390/su15086451

Younas, N., Hossain, M. B., Syed, A., Ejaz, S., Ejaz, F., Jagirani, T. S., & Dunay, A. (2023). Green shared vision: A bridge between responsible leadership and green behavior under individual green values. *Heliyon*, *9*(11). https://doi.org/10.1016/j.heliyon.2023.e21511

Zafar, H., Cheah, J. H., Ho, J. A., Suseno, Y., & Tian, F. (2025). How green servant leadership influences organisational green performance? The roles of employee green creativity, voluntary pro-environmental behavior and green psychological climate. *Personnel Review*. https://doi.org/10.1108/PR-10-2023-0843

Zaid, W. M. A., & Yaqub, M. Z. (2024). The prolificacy of green transformational leadership in shaping employee green behavior during times of crises in small and medium enterprises: a moderated mediation model. *Frontiers in Psychology*, *15*, 1258990. https://doi.org/10.3389/fpsyg.2024.1258990

Zhong, J., Shao, X., Xiao, H., Yang, R., & Xin, A. (2025). The research on the green leadership: a systematic review and theoretical framework. *Environment, Development and Sustainability*, *27*, 377–408. https://doi.org/10.1007/s10668-023-03960-0