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Rethinking Age-Appropriateness: Action Learning, Biophilia and Environmental Citizenship Education in Bhutanese Primary Schools

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Abstract

Environmental education in Bhutanese primary schools is integrated across various subjects and is primarily guided by the framework of Education for Gross National Happiness (EGNH). It aims to cultivate environmental values to foster environmentally responsible citizens. Nonetheless, how these commitments are translated into meaningful environmental citizenship during the primary years remains insufficiently understood. This paper draws on the first author's doctoral qualitative research involving interviews with 12 in-service teachers from 12 schools, a three-month ethnographic case study, and a teacher workshop. This paper focuses on three interrelated analytical perspectives: age-appropriateness, action research and action learning, and biophilia. Age-appropriateness concerns aligning environmental learning experiences with children's cognitive, emotional and social development while recognising their existing knowledge and capabilities. The findings reveal a tension between teachers' assumptions about primary students' developmental readiness and the environmental knowledge and understanding that children demonstrate through their lived experiences. Although school conservation activities and experiences of nature help children develop environmental awareness, care and responsibility, these activities often provide limited opportunities for children to investigate environmental problems and participate in decision-making. The paper argues that environmental citizenship education should move beyond teaching children to follow prescribed environmental practices and instead create age-appropriate opportunities for them to question, investigate and contribute to addressing environmental concerns. The

paper brings Bhutanese spiritual ecological understandings into dialogue with participatory and scientific approaches. It advances an integrated perspective grounded in ecological belonging, critical inquiry and participatory responsibility, offering a culturally situated contribution to environmental citizenship education in primary schools.

Keywords: Environmental citizenship, age-appropriateness, action learning, biophilia, spiritual ecology, primary schools.

Introduction

Bhutanese schools visibly promote environmental care through clean-up campaigns, school gardening and conservation activities, such as participating in tree planting. Yet a significant pedagogical tension remains. Environmental activities may foster responsibility but often provide limited opportunities for children to investigate environmental problems and contribute to decisions. The issue is not simply whether children participate, but what participation enables them to understand, question and decide. The significance of this concern extends well beyond Bhutan. It raises a fundamental question about whether environmental education merely promotes responsible behaviour or empowers students to think critically and participate meaningfully in environmental decision-making.

Earlier Bhutanese scholarship has examined how school-based environmental routines relate to lived ecological responsibilities (Dorji & Flowers, 2026b) and has argued for recognising home-grown, place-based knowledge rather than relying exclusively on imported educational models (Dorji & Flowers, 2026a). These studies establish an important foundation for examining how environmental citizenship education in Bhutanese primary schools recognises students' capabilities, encourages inquiry and builds on their relationships with nature.

The literature offers competing perspectives. Sobel (1996) cautions against confronting young children with overwhelming ecological crises, while Strife (2012) and Pihkala (2022) examine the emotional implications of environmental anxiety. Conversely, Chawla and Cushing (2007) and Činčera et al. (2020) identify possibilities for meaningful childhood engagement. Developmental sensitivity, therefore, need not entail withholding opportunities for inquiry.

Children's experiences of nature add another dimension. Biophilia, understood as an affinity for living nature (Wilson, 1984), helps explain the significance of direct encounters with natural environments (Chawla, 2007). In Bhutan, such encounters may also carry spiritual, cultural, and communal meanings. Yet, neither affection for nature nor culturally embedded environmental responsibility necessarily produces participatory citizenship.

We examine tensions through three distinct but complementary perspectives. Age-appropriateness concerns whose capabilities teachers recognise and which questions they consider accessible. Action research and action learning illuminate the difference between completing assigned activities and investigating problems through reflection and action. Biophilia draws attention to relationships with nature that may motivate care, without presuming that attachment produces agency.

We do not argue that adult-organised conservation practices are inherently deficient. Collective responsibility has educational and cultural value, and primary school students require appropriate guidance. Rather, we ask whether children can bring knowledge from homes and communities into school inquiry, examine the purposes of

established practices and contribute to shared decisions. Environmental citizenship is understood here as informed judgement exercised within, rather than in opposition to, shared responsibilities.

Our use of environmental citizenship consequently emphasises neither unrestricted childhood autonomy nor the replacement of collective values with individual choice. Rather, it means providing children with opportunities to understand environmental problems, make informed decisions and take responsibility alongside others. This understanding allows us to ask how Bhutanese educational aspirations might be realised through developmentally sensitive practices that take children's existing capabilities seriously.

Rationale and Significance of the Study

Drawing on the first author's doctoral research, this paper examines how developmental assumptions, institutional environmental routines and relationships with nature interact. Its contribution is not to present inquiry or participation as newly discovered principles. It is to explain how education for environmental care can simultaneously enable and constrain children's agency in a setting where collective and spiritual ecological responsibilities carry particular significance.

The distinction also applies to children's experiences of nature. Encounters with forests, rivers and other places may nurture attachment, curiosity and ecological understanding, but these outcomes should not be conflated with agency. Moreover, Bhutanese spiritual ecological relationships may involve obligations and meanings that cannot be reduced to individual affection for nature.

The research gap is therefore more specific than a general shortage of studies of Bhutanese environmental education. Existing scholarship has examined developmental sensitivity, action competence and children's nature experiences, but these perspectives do not, by themselves, explain how their interaction shapes the educational meaning of environmental participation in this setting. A school may recognise children's need for protection, cultivate collective environmental action and encourage affection for nature, yet leave the questions and decisions largely in adult hands. This study examines that conjunction through teacher accounts and observed practices, rather than through an experimental comparison of pedagogical models.

A situational analysis of Global Citizenship Education in Bhutanese curricula identified opportunities for curricular integration as well as gaps requiring attention (Dorji W. et al., 2019). More recently, research on Bhutanese environmental citizenship has distinguished children's lived responsibilities from the routine activities through which schools often enact conservation commitments (Dorji & Flowers, 2026b). The present article revisits related doctoral material with a different analytical focus: the interaction of developmental expectations, action-oriented inquiry and experiences of nature in Classes IV–VI.

Three questions guide the paper: (1) How do teachers understand the age-appropriateness of environmental citizenship education for primary school students? (2) How are action research and action learning understood and incorporated into environmental practices involving primary school students? (3) How are children's experiences of nature understood and incorporated into education, and what possibilities do they offer for biophilia and environmental citizenship?

The study is significant in three respects. First, it questions the assumption that children's developmental readiness can be inferred primarily from age or school level. Second, it examines the educational meaning of participation rather than treating the number or visibility of environmental activities as a measure of citizenship. Third, it considers how relationships with nature are shaped through both formal instruction and the cultural worlds children inhabit. These issues are linked: teachers' expectations influence the activities offered, while those activities shape whether children's knowledge and experiences are recognised as resources for inquiry.

Literature Review

Age-Appropriateness and Children's Environmental Citizenship

Age-appropriateness is contested because it concerns both children's capabilities and the educational responsibility to protect their wellbeing. Sobel (1996, 2008), Strife (2012), Léger-Goodes et al. (2022) and Hickman et al. (2021) caution against environmental learning that generates fear, helplessness or excessive responsibility. Their concerns should not be dismissed: awareness of ecological crises does not necessarily equip children to respond constructively.

Other scholarship challenges the assumption that citizenship-oriented environmental learning must wait until adolescence. Činčera et al. (2020) and Monte and Reis (2021) identify possibilities for age-sensitive inquiry and participation; Otto et al. (2019) and Liefländer and Bogner (2014) examine environmental attitudes and behaviours during childhood. Evidence of positive attitudes is not, however, evidence of independent civic agency, and findings from other contexts cannot simply be transferred to Bhutan.
The issue is therefore not merely when children become ready, but how teachers construct appropriate opportunities. Familiar environmental problems may provide accessible entry points into wider ecological relationships. Teachers' interpretations of readiness can protect children from overwhelming material but may also narrow what they are invited to investigate. The competing perspectives are not necessarily contradictory. A teacher who avoids frightening narratives of ecological collapse may still encourage children to investigate the condition of a nearby stream. Conversely, an apparently simple conservation lesson can become emotionally burdensome if children are made to feel personally responsible for problems beyond their control. What matters is the relationship between the issue, the manner of its presentation, the available support and the possibilities for meaningful response.

Action Research, Action Learning and Environmental Citizenship

Action research and action learning connect experience with inquiry, reflection and action, although their traditions and purposes differ. Lewin (1946), Carr and Kemmis (1986), Revans (2011), Freire (1970) and Fals-Borda (1987) offer distinct resources for thinking about reflective and participatory practice. These approaches should not be equated with any activity simply because it involves practical work.

Jensen and Schnack (1997) distinguish action competence from behavioural compliance. A clean-up campaign can cultivate care and cooperation but becomes a stronger opportunity for environmental citizenship when children can examine why waste accumulates, discuss alternatives and assess responses. Gruenewald's (2003) critical pedagogy of place likewise connects local experience with inquiry into the relationships shaping particular environments.

In the Bhutanese context, earlier analysis has questioned whether established environmental routines consistently connect children's lived responsibilities with critical reflection (Dorji & Flowers, 2026b). Research on why Fridays for Future did not spread to Bhutan similarly cautions against assuming that a globally prominent model of environmental action adequately represents culturally situated forms of participation (Dorji W. & Flowers, 2023). That research concerned wider youth climate activism, not the primary pupils examined here; its relevance is conceptual rather than direct evidence of children's classroom capabilities.

Studies of participatory and project-based learning identify both possibilities and constraints (Aldabbus, 2018; Mironesco, 2021; Paredes-Chi & Viga-de Alva, 2020). The crucial issue is the quality of participation: whether children can influence questions and decisions, rather than simply complete assigned tasks. In this paper, action research and action learning serve as conceptual perspectives, not interventions experimentally evaluated by the study.

This distinction also guards against methodological confusion. Action research is a particular approach to systematic inquiry and change, while action learning commonly emphasises learning through engagement with problems and reflection on action. Neither term should be assigned retrospectively to an activity solely because students did something practical. This study examines how teachers understood such approaches and what their existing activities made possible; it does not claim that children conducted formal action research.

Biophilia, Nature Experience and Spiritual Ecology

Childhood encounters with nature may nurture curiosity, attachment and environmental concern (Chawla, 2007, 2015; White & Stoecklin, 2008). Informal family experiences and structured programmes can both contribute to these relationships (Asah et al., 2018; Hoover, 2021). Yet, affection for nature, responsible behaviour and environmental citizenship remain conceptually distinct.

This distinction matters in Bhutan. Relationships with forests, mountains and water sources may also be shaped by spiritual ecological knowledge, community practice and ethical obligations. Biophilia illuminates human affinity with nature; spiritual ecology can encompass culturally situated understandings of interdependence and responsibility. Neither automatically creates opportunities for children to investigate ecological problems or influence decisions.

The educational possibility lies in bringing lived experience, scientific inquiry and spiritual ecological understandings into dialogue, without treating them as interchangeable or assuming that any one knowledge tradition guarantees responsible action. Bhutanese scholarship on home-grown place-based education emphasises that ecological learning is shaped by agricultural, spiritual and community relationships with place (Dorji & Flowers, 2026a). This argument complicates any account of biophilia based only on individual affection for nature, without presuming that cultural knowledge necessarily produces environmental agency.

Spiritual ecology also requires careful interpretation. It should not be used as a general label implying that all Bhutanese children share identical beliefs or relationships with place. Nor does it imply that cultural understandings and scientific accounts always agree. Their educational encounter may be productive precisely because they prompt questions about evidence, values, responsibility and the consequences of human action. This complexity strengthens rather than weakens the case for bringing different forms of knowledge into dialogue.

Bringing the Three Perspectives Together: An Analytical Lens

Taken separately, the three perspectives make different contributions. Developmental scholarship asks how environmental issues can be made intellectually and emotionally accessible. Action competence and participatory traditions ask whether learners can investigate and influence responses, rather than simply comply with instructions. Biophilia and scholarship on nature experience help explain why children may care about places, while leaving open how care becomes public judgement. Their integration is analytically necessary because neither capability, participation nor attachment alone establishes environmental citizenship. Together, they direct attention to the conditions under which children are recognised as knowledgeable, invited to inquire and permitted to share responsibility for decisions. This is an interpretive lens, not a validated causal model.

These perspectives direct attention to three questions: what children are considered capable of understanding, how participation is organised, and how relationships with nature become educationally meaningful. The framework does not presume that knowledge, outdoor experience or conservation activities produce citizenship automatically. It examines the conditions under which environmental care may develop into informed judgement and participatory responsibility within Bhutanese schooling.

Research Methodology

The empirical materials analysed in this paper originate in the first author's doctoral study (Dorji W, 2025). This manuscript presents a focused reanalysis for primary Classes IV–VI and should be read alongside, rather than as an independent replication of, related publications drawn from that research (Dorji & Flowers, 2026a, 2026b).

Research Approach and Design

We revisit the first author's doctoral research using an interpretive qualitative approach informed by phenomenological perspectives and ethnographic fieldwork. The analysis draws on a three-month school case study, interviews with teachers from 12 additional schools and a Delphi-informed workshop. The original study investigated environmental citizenship across broader school contexts; this article focuses analytically on implications for primary Classes IV–VI.

Site, Participants and Data Collection

The case study took place at Karmic Middle Secondary School (pseudonym) in Paro, selected purposively for its engagement with Education for Gross National Happiness, inclusion of primary and lower secondary classes, and feasibility for sustained observation. The first author observed 20 social studies lessons across Classes IV–VI involving four teachers, alongside field excursions, assemblies, environmental programmes and school activities. Field notes, interviews with the teachers and principal, and informal student conversations informed the analysis.

About 12 in-service teachers from 12 other schools were interviewed. Purposively selected from a postgraduate social studies cohort, they represented six rural and six urban schools and had five to 23 years of teaching experience. A three-hour Delphi-informed workshop brought together these 12 teachers and the four case-school teachers to discuss preliminary interpretations. These sources offered contextual comparison rather than statistical representation.

The interviews with teachers beyond the case school broadened the range of perspectives available for interpretation, while the prolonged ethnographic engagement made it possible to examine discrepancies between educational intentions and routine practice. The workshop provided a further occasion for teachers to respond to emerging interpretations. These elements were complementary, but they did not constitute independent replications of the case study.

Analysis, Ethics and Limitations

The first author's interview and ethnographic materials were interpreted iteratively, comparing participants' accounts with observed practices and workshop discussions. For this paper, evidence relevant to primary schooling was examined through the three

conceptual lenses. Observations from Classes IV – VI and broader teacher accounts inform context but are not represented as primary-only data.

The doctoral project received University of Technology Sydney (UTS) ethical approval and relevant permissions in Bhutan. Participation was voluntary; school and teacher pseudonyms protect identities. The first author's professional position required reflexive attention to research relationships. The single-school ethnography limits generalisation, and the research did not directly measure biophilia or test action research or action learning as interventions.

Findings

Age-Appropriateness: Readiness and Capability

Teachers generally recognised the importance of environmental education during the primary years. However, teachers expressed concerns that primary school students might struggle to understand complex global environmental issues. Bunor, a social studies teacher from a rural school, explained that *"we must consider the age of the children in primary school, where only basic concepts of environmental education must be taught."* Zawa, with two decades of teaching experience, similarly maintained that primary school students should first learn about their immediate surroundings, including the importance of forests and the causes of forest degradation. More complex global environmental issues, Zawa argued, should be introduced in later grades. Minlu, a teacher from an urban school, expressed a comparable concern, stating that younger learners might become confused when environmental problems were presented through a global perspective. Across these interviews, teachers distinguished between environmental knowledge considered suitable for primary school students and more complex issues reserved for later schooling. Familiar local environmental concerns were emphasised as appropriate starting points, while global environmental problems were generally associated with older students.

Evidence from the ethnographic case study provided a different perspective on students' existing environmental knowledge. During informal conversations with Class VI students engaged in daily school cleaning activities, some explained how plastic waste could adversely affect soil fertility. Their explanations connected waste disposal with environmental consequences rather than simply describing cleaning as a school responsibility. The same students also spoke about their respect for local spirits and deities. They explained that this understanding came from their parents and elders, demonstrating familiarity with spiritual beliefs associated with the natural environment. Their conversations included both explanations of environmental degradation and accounts of cultural and spiritual relationships with nature.

Further evidence emerged during a field excursion to forests, water sources and river watersheds. In informal conversations, students aged approximately 11 and 12 discussed the importance of forests and their role in maintaining environmental conditions. They also identified edible wild fruits, vegetables and plants with medicinal uses. Some drew on knowledge acquired through everyday experiences and interactions with family

and community members. However, the field observations also revealed distinctions in how students understood different forms of environmental knowledge. Although students demonstrated familiarity with traditional ecological practices and cultural beliefs, they did not explicitly connect this knowledge with contemporary environmental challenges. Similarly, classroom observations showed that teachers generally addressed environmental degradation through local examples, with comparatively limited attention to connections between local practices and global environmental problems.

Environmental Participation and the Limits of Agency

Environmental activities were firmly established in school life. Teacher interviews and ethnographic observations documented waste management, school gardening, tree planting, conservation programmes and community clean-up campaigns. One particularly significant activity involved approximately 500 students, including primary school students, participating in a community clean-up campaign. Zamring, a teacher from an urban school, also described replacing packaged birthday gifts with flowers grown in the school garden. These practices reflected the prominence of collective environmental responsibility in school activities.

However, observations revealed differences between students' participation in environmental activities and their involvement in determining how those activities were undertaken. Three patterns were particularly evident: environmental activities were generally planned and organised by teachers or school authorities; students predominantly carried out assigned tasks rather than investigating environmental problems or considering alternative responses; opportunities for students to participate in environmental decision-making were less consistently evident.

One teacher reported that students sometimes brought waste from home to fulfil litter-collection expectations. This account illustrated how students responded to the requirements of school environmental activities, although it did not establish whether such practices were widespread. Another finding concerned teachers' understanding of action research and action learning. Some teachers used these terms when describing practical environmental activities. However, classroom and school observations provided limited evidence of the processes commonly associated with inquiry-oriented environmental learning, including: identifying and investigating environmental problems; gathering evidence and examining possible responses; reflecting on the outcomes of environmental actions.

The large-scale clean-up campaign also demonstrated the importance of organised collective participation in school environmental programmes. Students contributed to activities that required cooperation and shared responsibility. Nevertheless, the available observations documented participation in established activities more clearly than students' involvement in identifying problems or deciding how they should be addressed.

Biophilia and Experiences of Nature

Outdoor learning provided opportunities for students to engage directly with their natural surroundings. During a watershed excursion and other outdoor activities, students encountered forests, insects, plants and water resources. Their accounts revealed different ways of experiencing and understanding nature, extending beyond the activities formally organised by teachers. Students described experiences that included: expressing emotional attachment to natural surroundings, with one student explaining, *"Being in nature makes me feel very peaceful";* observing unfamiliar insects, photographing them and using the internet to identify them; learning about the importance of watersheds and their relationship to safe drinking water. These accounts revealed emotional connections with nature alongside curiosity and emerging ecological understanding. Students' interest in identifying unfamiliar insects was particularly noteworthy as their observations prompted them to seek additional information beyond what they encountered outdoors.

Family and community experiences also formed part of students' relationships with nature. Their familiarity with local environments and knowledge acquired outside school provided additional contexts for understanding forests, plants and water resources. These experiences were not confined to scientific knowledge but could also involve cultural and spiritual understandings of the natural environment. However, ethnographic observations indicated that outdoor learning activities were largely structured around objectives determined by teachers. While students demonstrated curiosity and shared their observations, opportunities for them to shape the direction of environmental inquiry were less consistently evident. In particular, the observations provided limited evidence of students: developing their own questions from encounters with nature; pursuing systematic investigations based on their observations; participating in decisions concerning the care and protection of local environments.

The findings document students' emotional connections with nature, curiosity about living organisms and developing understanding of ecological relationships. They also reveal a distinction between students' direct experiences of nature and their opportunities to extend those experiences into sustained inquiry and environmental decision-making.

Discussion

Age-Appropriateness as a Pedagogical Responsibility

Teachers' caution about introducing complex environmental problems to primary children reflects concern about wellbeing. Sobel (1996), Strife (2012) and Pihkala (2022) caution against environmental education that overwhelms young learners. Yet, protecting children from distress is not equivalent to excluding them from environmental inquiry. Monte and Reis (2021) support participation during childhood.

Our Class VI lesson and field excursion observations do not establish that children can independently interpret or resolve complex ecological crises. They show that some understand relationships among waste, soil, forests and water, drawing partly on

experiences beyond school. Such knowledge is incomplete, but it offers a starting point for examining how familiar practices connect with wider environmental processes. Age-appropriateness should, therefore, concern how environmental inquiry is framed and supported, with attention to children's emotional wellbeing. It should not impose a rigid boundary between local environmental issues for younger children and global concerns for older students. Teachers can make complexity discussable without transferring responsibility for systemic problems onto children.

From Participation to Environmental Citizenship

Our earlier study (Dorji & Flowers, 2026b) identified tensions between environmental routines and meaningful learning. The present analysis specifies how developmental expectations and adult-directed organisation may constrain opportunities for primary students to investigate and influence environmental responses. School clean-up campaigns, gardening and conservation programmes cultivate cooperation and collective responsibility; their educational value should not be dismissed because adults coordinate them. Nevertheless, environmental citizenship cannot be inferred from participation alone. Dobson (2007) emphasises obligations and justice, while Jensen and Schnack (1997) distinguish action competence from compliance.

The report of students bringing waste from home to meet litter-collection expectations is especially revealing. It does not prove that clean-up campaigns fail but illustrates how completing a visible task can become detached from examining its purpose. Students may learn to collect litter without asking why waste accumulates, how packaging enters the school or which responses are effective. This is a question of educational design, not simply student motivation.

Action learning and action research can help connect participation with inquiry, provided these terms denote more than practical activity. Primary students need not conduct formal research: they might record waste patterns, compare explanations, propose changes and assess results. Gruenewald's (2003) critical pedagogy of place strengthens this approach by relating local care to the social practices shaping environmental conditions.

We, therefore, distinguish environmental participation; contributing to established activities, from participatory environmental citizenship, which also involves examining problems and influencing collective responses. This distinction does not privilege individual autonomy over Bhutanese traditions of shared responsibility. Agency can be exercised collectively when children have opportunities to question purposes, deliberate about alternatives and contribute to decisions. A clean-up campaign becomes more educationally substantive not through greater attendance alone, but through the quality of inquiry and deliberation it permits.

Biophilia, Spiritual Ecology and Critical Understanding

Students' descriptions of peace in nature, curiosity about insects and interest in watersheds resonate with research on the significance of childhood nature experiences

(Asah et al., 2018; Chawla, 2007, 2015). However, emotional attachment and ecological observation should not be treated as evidence of environmental citizenship. The watershed excursion offered rich encounters with nature, but its questions and outcomes remained largely teacher directed or top-down initiatives. Curiosity, including students' attempts to identify insects online, indicates an opening for inquiry rather than proof of sustained agency.

Bhutanese spiritual ecology introduces an important qualification to interpretations centred on an individual's affinity with nature. Forests and waterways may also be understood through relationships, cultural meanings and ethical obligations. Such understandings are not interchangeable with biophilia, and neither cultural attachment nor spiritual belief automatically produces environmentally responsible action. Nor should every student be presumed to share the same worldview.

The pedagogical opportunity lies in bringing distinct forms of knowledge into serious conversation. A watershed inquiry might examine water quality and ecological processes alongside community accounts of the significance of water and students' own observations. This is not an uncomplicated reconciliation of science and tradition: their claims, methods and purposes may differ. Rather than treating cultural knowledge as decoration or accepting it without examination, teachers could enable students to consider what different explanations illuminate, where they diverge and what responsibilities arise. The educational significance of nature experience depends, in part, on whether attachment and curiosity are developed through interpretation, questioning and participation.

Towards a Contextually Grounded Pedagogy

Read alongside earlier work on Global Citizenship Education in Bhutanese curricula (Dorji W et al., 2019) and home-grown place-based education (Dorji & Flowers, 2026a), these findings suggest three interconnected dimensions for primary environmental citizenship education: ecological belonging, critical inquiry and participatory responsibility.

Ecological belonging recognises children's lived, emotional and culturally situated relationships with local environments. Critical inquiry concerns their opportunities to investigate environmental problems, examine evidence and consider different explanations. Participatory responsibility involves contributing to shared decisions and assessing the consequences of collective responses. These are interpretive dimensions, not variables measured or an intervention tested in this study.

Their relationship matters most. Belonging without inquiry can remain appreciation; inquiry without attention to place can become abstract; and participation without deliberation can become compliance. Together, they suggest a way to retain Bhutanese commitments to collective responsibility while widening children's opportunities to reason about environmental action. The contribution is not a claim to have invented inquiry or citizenship pedagogy. It is to identify how developmental caution, institutional routines and culturally embedded ecological relationships intersect in this

context, making environmental responsibility highly visible while leaving student agency less consistently evident.

This synthesis also implies a feasible pedagogical shift: redesign existing activities rather than necessarily add programmes. A clean-up campaign could include student documentation of waste sources, discussion of alternatives and evaluation of changes. A watershed excursion could combine scientific observations, community knowledge and questions generated by students. These are implications, not interventions whose effectiveness the research has established.

The ethnographic case and purposively selected teacher interviews cannot establish the prevalence of these patterns across Bhutan or demonstrate long-term citizenship outcomes. The study, instead offers a contextually grounded analytical distinction between participation and agency, and a basis for examining how primary learners might contribute more meaningfully to shared environmental decisions within their own school communities.

Conclusion

The study has examined how developmental judgements, organised environmental participation and experiences of nature shape possibilities for environmental citizenship in Bhutanese primary education. Its central finding is a tension rather than a simple failure. Schools can cultivate care and collective responsibility while offering children limited influence over the questions and decisions that define environmental action. Teachers' caution about age, school conservation programmes and outdoor experiences all have educational value. None, however, guarantees opportunities for critical environmental judgement.

Reading age-appropriateness, action-oriented inquiry and biophilia together make this tension more intelligible. The proposed relationship among ecological belonging, critical inquiry and participatory responsibility suggests that children's agency can develop within shared obligations rather than through their rejection. Bhutanese spiritual ecological relationships may enrich that process when brought into critical dialogue with lived experience and scientific explanation without assuming that different knowledge traditions are interchangeable.

These are interpretive implications of a bounded qualitative study, not demonstrated effects of a pedagogical intervention. Further classroom research should examine how students respond when they can formulate environmental questions, investigate causes and contribute to decisions. The educational challenge is, therefore, not simply to organise more conservation activities but to ask whose understanding and judgement those activities cultivate.

References

Aldabbus, S. (2018). Project-based learning: Implementation & challenges. *International Journal of Education, Learning and Development, 6*(3), 71–79. https://eajournals.org/wp-content/uploads/Project-Based-Learning-Implementation-Challenges.pdf

Asah, S. T., Bengston, D. N., Westphal, L. M., & Gowan, C. H. (2018). Mechanisms of children's exposure to nature: Predicting adulthood environmental citizenship and commitment to nature-based activities. *Environment and Behavior, 50*(7), 807–836. https://doi.org/10.1177/001391651771802 1

Carr, W., & Kemmis, S. (1986). *Becoming critical: Education, knowledge and action research*. Falmer Press.

Chawla, L. (2007). Childhood experiences associated with care for the natural world: A theoretical framework for empirical results. *Children, Youth and Environments, 17*(4), 144–170. https://www.jstor.org/stable/10.7721/chilyoutenvi.17.4.0144

Chawla, L. (2015). Benefits of nature contact for children. *Journal of Planning Literature, 30*(4), 433–452. https://doi.org/10.1177/0885412215595441

Chawla, L., & Cushing, D. F. (2007). Education for strategic environmental behavior. *Environmental Education Research, 13*(4), 437–452. https://doi.org/10.1080/13504620701581539

Činčera, J., Romero-Ariza, M., Zabic, M., Kalaitzidaki, M., & del Consuelo Díez Bedmar, M. (2020). Environmental citizenship in primary formal education. In A. C. Hadjichambis, P. Reis, D. Paraskeva-Hadjichambi, J. Činčera, J. Boeve-de Pauw, N. Gericke, & M.-C. Knippels (Eds.), Conceptualizing environmental citizenship for 21st century education (pp. 163–177). Springer. https://doi.org/10.1007/978-3-030-20249-1_1 1

Dobson, A. (2007). Environmental citizenship: Towards sustainable development. *Sustainable Development, 15*(5), 276–285. https://doi.org/10.1002/sd.344

Dorji, S., & Flowers, R. (2026a). Beyond Global North models: Centring Bhutan's home-grown place-based education. *Bhutan Journal of Research and Development, 15*(1), 1–21. https://doi.org/10.17102/bjrd.rub.15.1.001

Dorji, S., & Flowers, R. (2026b). From ritual to responsibility: Rethinking environmental citizenship in Bhutanese schools. RABSEL, 26(2). https://journal.pce.edu.bt/index.php/rabsel/article/view/250

Dorji W., S. (2025). *Transforming social studies education in Bhutan: Blending spiritual ecological and modern sustainability knowledges for environmental citizenship* [Doctoral dissertation, University of Technology Sydney] (Under embargo until 2027).

Dorji W., S., & Flowers, R. (2023). Why did Fridays for Future not spread to Bhutan and other parts of the Global South? A spiritual, ecological and middle path between global and local climate crisis education. *The Social Educator, 41*(2), 20–36.

Dorji W., S., Wangchuk, B., Wangpo, T., Karma, T., Dorji, S., Sonam, N., & Dawa, G. (2019). Situational analysis of global citizenship education in the curricula of Bhutan. *RABSEL: The CERD Educational Journal, 20*(2), 71–84. https://www.pce.edu.bt/wp-content/uploads/2020/06/Rabsel-Volume-XX-Issue-II.pdf

Fals-Borda, O. (1987). The application of participatory action-research in Latin America. *International Sociology, 2*(4), 329–347. https://doi.org/10.1177/026858098700200401

Freire, P. (1970). *Pedagogy of the oppressed*. Herder and Herder.

Gruenewald, D. A. (2003). The best of both worlds: A critical pedagogy of place. *Educational Researcher, 32*(4), 3–12. https://doi.org/10.3102/0013189X032004003

Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health, 5*(12), e863–e873. https://doi.org/10.1016/S2542-5196(21)00278-3

Hoover, K. S. (2021). Children in nature: Exploring the relationship between childhood outdoor experience and environmental stewardship. *Environmental Education Research, 27*(6), 894–910. https://doi.org/10.1080/13504622.2020.1856790

Jensen, B. B., & Schnack, K. (1997). The action competence approach in environmental education. *Environmental Education Research, 3*(2), 163–178. https://doi.org/10.1080/1350462970030205

Léger-Goodes, T., Malboeuf-Hurtubise, C., Mastine, T., Généreux, M., Paradis, P.-O., & Camden, C. (2022). Eco-anxiety in children: A scoping review of the mental health impacts of the awareness of climate change. *Frontiers in Psychology, 13*, Article 872544. https://doi.org/10.3389/fpsyg.2022.872544

Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues, 2*(4), 34–46. https://doi.org/10.1111/j.1540-4560.1946.tb02295.x

Liefländer, A. K., & Bogner, F. X. (2014). The effects of children's age and sex on acquiring pro-environmental attitudes through environmental education. *The Journal of Environmental Education, 45*(2), 105–117. https://doi.org/10.1080/00958964.2013.875511

Mironesco, M. (2021). Service-learning and civic engagement: Environmental awareness in Hawai'i. *Journal of Political Science Education, 17*(sup1), 583–598. https://doi.org/10.1080/15512169.2020.1777146

Monte, T., & Reis, P. (2021). Design of a pedagogical model of education for environmental citizenship in primary education. *Sustainability, 13*(11), Article 6000. https://doi.org/10.3390/su13116000

Otto, S., Evans, G. W., Moon, M. J., & Kaiser, F. G. (2019). The development of children's environmental attitude and behavior. *Global Environmental Change, 58*, Article 101947. https://doi.org/10.1016/j.gloenvcha.2019.101947

Paredes-Chi, A., & Viga-de Alva, M. D. (2020). Participatory action research (PAR) and environmental education (EE): A Mexican experience with teachers from a primary rural school. *Environmental Education Research, 26*(11), 1578–1593. https://doi.org/10.1080/13504622.2020.1788515

Pihkala, P. (2022). The process of eco-anxiety and ecological grief: A narrative review and a new proposal. *Sustainability, 14*(24), Article 16628. https://doi.org/10.3390/su142416628

Revans, R. (2011). *ABC of action learning*. Routledge.

Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart in nature education*. Orion Society.

Sobel, D. (2008). *Childhood and nature: Design principles for educators*. Stenhouse Publishers.

Strife, S. J. (2012). Children's environmental concerns: Expressing ecophobia. *The Journal of Environmental Education, 43*(1), 37–54. https://doi.org/10.1080/00958964.2011.602131

White, R., & Stoecklin, V. L. (2008). *Nurturing children's biophilia: Developmentally appropriate environmental education for young children*. White Hutchinson Leisure & Learning Group. https://www.whitehutchinson.com/children/articles/nurturing.shtml

Wilson, E. O. (1984). *Biophilia*. Harvard University Press.