

Ecological Citizenship in Citizenship Education: Strengthening Awareness Environment in Secondary Education

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ABSTRACT

This study aims to explore the process of integrating ecological citizenship into Civic Education (PKn) learning in secondary schools, as well as identifying its impacts, challenges, and implementation strategies within the context of the Kurikulum Merdeka. Using a qualitative approach with a single-case study design, this study was conducted in a high school in Medan City with Adiwiyata status. Data were collected through multi-source techniques including in-depth semi-structured interviews with Civic Education teachers and the principal, non-interventional participant observation during six class sessions, critical analysis of curriculum documents, and three student Focus Group Discussions (FGDs). All qualitative data were analyzed interactively using the Miles, Huberman, and Saldaña model with open and axial coding techniques. The results showed that the integration of ecological citizenship through active-participatory strategies, the "Sustainable Lifestyle" project, and the Green Living Values (GLV) syntax significantly increased ecological empathy (moral feeling) and encouraged students' real actions (moral action), while reconfiguring their thinking paradigm from anthropocentrism to ecocentrism. However, the effectiveness of this implementation is still limited by structural challenges, including a civics curriculum heavily weighted toward formal state administration, teachers' limited ecopedagogical capacity, and limited green facilities in schools. This study concludes that strengthening ecological citizenship requires reform of national curriculum policies, ongoing ecopedagogy and postdigital literacy training for teachers, the implementation of a whole-institution approach, and multi-stakeholder collaborative synergy between schools and local communities.

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1. Introduction

The contemporary era marked by acceleration crisis global climate, pollution systemic, degradation land, and degradation diversity biological in a way drastic, sector education carry out not quite enough answer ethical and strategic for form awareness as well as not quite enough answer ecological among generation young. Various activity anthropogenic like burning material burn fossils and exploitation source Power natural in a way massive has bring earth approach damage threshold ecosystem that is not can restored (Sholihah, Herlambang & Yuniarti, 2026). Condition This demand reorientation radical in system global education. In

Indonesia itself, the crisis environment like deforestation forest tropical, pollution area flow river, damage ecosystem sea, and emergency rubbish plastic very use Keep going become threat real that degrades quality life public in a way directly (Kundariati, Ibrohim, Rohman, Nida, Fachrunnisa & Razak, 2025).

In respond challenge mentioned, curriculum education citizenship conventional generally assessed fail because too focus on aspects rigid formal law, state administration, social and political without enter perspective environment in a way deep. Paradigm classic patterned *Westphalian* and anthropocentric this give birth to gap significant epistemology, where students only prepared For become obedient citizens in a way law to his country, but ignore to not quite enough answer his morals as residents interconnected biosphere dependent (Dobson, 2003). Therefore that, concept ecological citizenship become very important for integrated to in eye lesson education citizenship.

Ecological citizenship, as articulated in a way in-depth by Andrew Dobson, emphasizing that obligation individual to environment is obligation non- territorial civil rights attached to every person based on impact ecological *footprint* it produces towards other people and generations future (Zubaidi, 2025). Different with draft citizenship *liberal* environmental citizenship that demands right environment life from country, ecological citizenship emphasize justice distribution source Power nature, responsibility personal moral responsibility, principles precautionary principle, as well as justice intergenerational (Akinsemolu & Onyeaka, 2025). Integration of concepts This to in learning Civics can develop awareness critical students, growing empathy ecological, and encourage action real for guard sustainability ecosystem.

In context curriculum in Indonesia, government has set direction policy new through implementation Kurikulum Merdeka that emphasizes Penguatan Profil Pelajar Pancasila (P5). Pancasila as philosophy life nation in fact own dimensions deep ecological, where harmony between humans, creators, and nature universe be the core of moral resilience of the nation (Alzena & Darmawan, 2024). In line with the opinion of Bria, Komalasari, Sundawa & Mahpudz (2025) who stated that through "Sustainable Lifestyle" theme in P5, school middle which is phase critical formation character, values, and identity social student own opportunity strategic for implant values ecological citizenship. Application This expected can practice student For No only just control ecoliteracy theoretical, but also has capacity for act in a way responsible answer in preservation nature (moral action) (Hiswara, Aziz & Pujowati, 2023).

However, success integration this is very much determined by how the teacher transforms values sustainability through approach innovative and critical pedagogical approach. *ecopedagogy* offer framework work that is not treat education environment as delivery message conservation neutral (Sholihah, et al. 2026). On the other hand, *ecopedagogy* challenge student for analyze relation power, injustice social, assumptions economy extractive, as well as connection between humans and non-humans embedded behind crisis environment. Therefore that, strengthening aspect ecological citizenship through Civics at school medium expected become solution sustainable for form character generation young people who are pro-environment for sustainability earth in the future (Markauskaite, Carvalho & Fawns, 2023).

2. Method

This study use approach qualitative with design studies case single - *case study* refers to Yin (2009) for explore in a way in-depth integration process ecological citizenship in Civics Education at one of the high schools with the status of Adiwiyata which has apply Kurikulum Merdeka. Data is collected through semi- structured interviews with the Civics teacher and the principal school, observation participatory on the learning process, analysis document curriculum and tools learning, as well as *focus group discussion* (FGD) with students. Data analyzed in a way interactive using the Miles, Huberman & Saldaña (2014)

model through stages data reduction, data presentation, and withdrawal and verification conclusions, which are supported by the coding process thematic. Data validity is guaranteed through triangulation sources and methods, *peer debriefing*, and *member checking* for increase credibility and accuracy findings study.

3. Result and Discussion

3.1 Teachers' Understanding of Draft Ecological Citizenship

Based on results interview deep with four civics teachers were found that majority educator understand ecological citizenship as form not quite enough moral responsibility of citizens to preserve environment through action practical daily. The action identified like sorting garbage, greening yard school, efficiency energy, and involvement passive in campaign environment school. As expressed by one of Civics teacher informant:

"Ecological citizenship that is expansion from education Pancasila character. We teach student For No only be a good person to fellow humans, but also towards natural around. The way simple, start from discipline No throw away rubbish careless and guard beauty class".

Findings this reveal that even though the teacher shows high enthusiasm, understanding they generally Still trapped in a dimension individual morality that is cosmetics-practical and yet touch dimensions structural politics citizenship more ecological deep. There are variations level understanding conceptual influenced by the lack of training ecopedagogy and limitations access to authoritative teaching materials. This in line with Tilbury and Wortman's (2004) affirmative view that education for sustainability demand strengthening capacity educator in a way systemic through training based competence sustainability so that they capable learn issues complex socio - ecological in a way effective.

The teacher has role tactical in transform values sustainability to student through approach critical and dialogical pedagogical. However, according to Alazena & Darmawan (2024) data analysis revealed that part big civics teacher Still understand ecological citizenship limited to draft theoretical additional that is not become priority main compared to with constitutional and formal legal material. Phenomena This strengthen Sterling's findings regarding existence wide gap between theory sustainability with practice instructional in the room class. Without clear view, adequate time, and access to source Power relevant theoretical, teachers tend to depoliticize crisis environment and present it as problem technical management rubbish solely.

For bridge gap In this case, *the Green Living Values* (GLV) model developed by Komalasari, Abdulkarim & Sopianingsih (2025) presents framework Work relevant integrative, the GLV model combines principle *Living Values Education* (LVE) with draft sustainability ecological for guide student internalize universal values (such as work same, simplicity, honesty, love love and responsibility answer) to in action preservation environment. Teachers who start exposed with approach contextual based projects and studies case local proven more succeed interesting interest students and grow awareness critical they to relatedness between action local with global impact.

More far again, according to Markauskaite, et al (2023) in the postdigital era moment this, the teacher's understanding must be evolve beyond literacy ecology conventional going to understanding "capability postdigital". Ecopedagogy contemporary demands teachers to understand how digital technology, activities humans and ecosystems natural each other linked. The teacher does not only sued teach preservation natural physical, but also to criticize impact ecological from dense digital infrastructure energy (such as use intelligence artificial and giant data servers) against environment (Akinsemolu & Onyeaka, 2025). With Thus, the teacher's

understanding is comprehensive and multidimensional become foundation main for implementation curriculum transformative green.

3.2 Implementation Ecologica Citizenship in Citizenship Education Learning

Analysis towards the learning process Civics through six session observation class show that the teacher is trying integrate ecological citizenship use various active-participatory strategies. These strategies covering discussion group focused about policy prohibition plastic very use, project collaborative manufacturing infographics campaign climate, studies case conflict agrarian consequence deforestation, as well as assignment journal reflection weekly about footsteps carbon personal students. Analysis results RPP and Teaching Module documents emphasize objective learning this, namely "building awareness student will not quite enough answer they to sustainability environment as an integral part of identity Pancasila citizens".

Approach learning based project-based learning, study cases and discussions interactive proven to be very effective for increase involvement cognitive and emotional students. Findings This consistent with findings of Ha & Thoa (2025) which emphasize that pedagogy participatory-contextual allows student act as agent change agents in solve problem environment in the community they alone. Under shade Kurikulum Merdeka, P5 project with the theme "Sustainable Lifestyle" is implemented through concrete programs like "SMANSA Nyaman " project which focuses on the arrangement room class low emissions, savings energy, and creation climate safe and inclusive learning.

Students involved active in project real, such as processing programs rubbish organic become fertilizer liquid or campaign subtraction plastic in the canteen school, shows improvement pro- environmental attitudes and skills system significant systems thinking. Learning based project help student understand connection causality between action consumption daily they are at the level local with crisis ecologically at the global level (Ha & Thoa, 2025). In line with Alzena & Darmawan (2024) who stated that matter mentioned can trigger a sense of responsibility answer global citizenship that transcends national administrative boundaries.

For give description comprehensive theoretical about difference orientation learning post-integration dimensions ecological, Table 1 presents comparison paradigm between Civics in a way general with education ecological citizenship (green civics).

Table 1. Comparison Citizenship Education Paradigm Traditional and Civics Ecological (Green Civics)

Dimensions Analysis	General Civics			Civics Ecological (Green Civics)
Territorial Boundaries	Bound strictly on nation-state boundaries (<i>westphalian</i>).			Non-territorial in nature; includes global biosphere and community local.
Focus on Rights & Obligations	Legal-political rights individual and compliance law towards the country.			Individual moral obligations For minimize impact ecological footprint towards other parties.
Orientation Pedagogical	Transmission theoretical passive, memorization material constitution, and indoctrination mark.			Learning based project (project-based learning), action real, and reflection critical (ecopedagogy).
Human-Nature Relationship	Anthropocentric; placing natural as instrument fulfillment need man solely.			Ecocentric / Biocentric; view man as an integral part of nets life.
Dimensions of	Justice	distributive	socio-	Justice environmental justice and

Justice	economic intergroup social in the justice intergenerational equity. country.
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Learning Quality civics tall for strengthen ecological citizenship can optimized with adopt Syntax of the GLV Activities learning model. Syntax this designed in a way systematic for facilitate transition student from understanding cognitive shallow going to involvement deep and sustainable ecology. Operationalization GLV syntax in learning civics along with impact competencies produced detailed in Table 2.

Table 2. Syntax of the GLV Activities and Target Outcomes Learning Model

Stages GLV Syntax	Description Activity Learning	Dimensions Character & Competence Ecological Formation
1. Preparation	Student do internal reflection of universal values, identifying, analyzing, and reflecting issue environment local (such as accumulation trash around school)	Moral Knowing: Ecoliteracy critical, awareness systemic, and understanding deep about interdependence human-nature.
2. Project Design	Student collaborate in group for designing project ideas environment creative, composing timeline implementation, and determining the target solution.	Skills Social & Democratic: Work The same team, leadership participatory, problem solving problem in a way creative, and decision making decision collective.
3. Project Action	Student execute projects in the field (such as manufacturing compost, recycling repeat waste, or arrangement room green school).	Moral Action: Not quite enough answer personal, agency ecological active, skills psychomotor green, and persistence.
4. Demonstration	Group student presenting results works, exhibiting product recycling repeat, or serve report impact project to community school.	Skills: Accountability public, ability articulation of sustainability ideas, as well as appreciation to contribution colleagues.
5. Reflection	Student together educator evaluate program effectiveness, identifying the obstacles, and reflect mark life internalized green during the process.	Moral Feeling: Empathy ecological, sensitivity to right creature life other, sense of belonging nature, and commitment sustainability.
6. Publication	Student documenting the entire learning process in video/ infographic form and distribute it through school digital media.	Green Digital Citizenship: Use technology in a way ethical for spread campaign global sustainability in general inclusive.

Integration of GLV model in Civics in a way conceptual guide development character student in a way intact. Through syntax structured this, students experience internalization of morals gradually, which is academic can depicted as function accumulative from time to time:

$$ECC = \int_{t_0}^{t_f} (\gamma \cdot MK(t) + \delta \cdot MF(t) + \lambda \cdot MA(t)) dt + \epsilon \cdot \Phi_{\text{environment}}$$

In formulation conceptual above, Ecological Citizenship Competence (ECC) is an integral of the temporal accumulation of three dimensions of Lickona's moral character, namely Moral Knowledge (MK), Moral Feelings (MF), and Moral Actions (MA) which are each multiplied by a certain weight coefficient (γ, δ, λ), and are influenced simultaneously by the structural variables of the school's ecological learning environment ($\Phi_{\text{environment}}$) with factor error (ϵ). This model emphasizes that to realize strong ecological citizenship competencies, pedagogical interventions should not only touch on intellectual cognitive aspects (MK), but should be designed in an integrative manner involving emotional depth (MF) and the habituation of real action (MA) in a supportive school ecosystem.

3.3 Challenge Structural and Pedagogical in Implementation

Although potential impact positive integration ecological citizenship in Civics is very big, research this identify existence three obstacle main limiting factor effectiveness its implementation in schools medium.

Limitations Structure Curriculum and Core Competency Dominance

Civics teaching materials in curriculum national and books existing text moment This is still very dominated by issues formal law, rights basic man procedural, institutional politics and state administration. Very little space that is explicit dedicated for discuss crisis biosphere, justice ecological and ethical environment live. According to Nurdianti, Hotimah, Boontrac & David (2026) noted that formal curriculum often sidelines issue sustainability to marginal position because considered No including in competence core cognitive tested in assessment standard national.

In addition, there are challenge in the form of "inequality" implementation cross discipline science" (*uneven implementation*) (Castulo, De Vera, Buenaventura, Sebial, Aquino, Bua-Ay & Zanoria, 2025). Sustainability issues often charged in a way unilateral to the group teachers knowledge social (such as Civics or social science), while clump eye lesson exact isolate self from discussion dimensions socio-ethical environment and only focus on aspects technical. As a result, students fail get understanding interdisciplinary systemic about complexity global ecology.

The lack of Capacity Teacher Pedagogy and Ecoliteracy

The teacher who became subject this study in a way Honest confess limitations ecoliteracy they in explain aspects scientific crisis climate, justice distribution environment, and mechanisms economy green in a way in-depth. The majority of civics teachers no equipped with training special about ecopedagogy during education pre-service and certification programs profession they. Lack of self-confidence this make teachers tend to avoid discussion critical about issue sensitive environments such as corruption permission mine local or agrarian conflicts and more choose teach theory compliance law passive.

Beside that is ecopedagogy demand existence ability regulations adaptive teacher emotion regulation (Xu, Haratyan & Tian, 2026). The issue of teacher degradation environment and change climate often triggers emotion negative about oneself students, starting from anxiety climate, despair, to anger social. Teachers who do not own skills regulations good emotions will difficulty guide "emotional dialogue that is not comfortable" this, so that learning risky create skepticism or passivity ecological in oneself student.

Lack of Facility Schools and Inequality Learning Resources

Practice ecological citizenship need room learning that is not limited to the cement walls of the class, but touch direct with nature. However, some big school medium face constraint Serious in the form of limitations access to facility support like room open adequate green, tools modern composter, laboratory nature, and digital learning media based on environment.

Condition This exacerbated by the presence of gap geographic and socio-economic research. show that schools located in rural areas or outskirts city experience limitations source Power learning and access information ecologically distant more critical compared to with school urban areas. As a result limitations this facility, the teacher was forced serve material ecology verbally-theoretically, which in the end reduce essence from learning based experience direct (experiential learning).

3.4 Participation in Activity Ecological and Reconfiguration of Student Consciousness Involvement Practical Increase Awareness Environment

Findings empirical in studies case This confirm that involvement physique student in a way direct in activity ecological practical at school become trigger main improvement awareness environment they. Activities like manufacturing hole biopores, waste bank management school, planting trees, and campaigns restrictions rubbish plastic in the canteen school give experience concrete and meaningful learning. Learning based experience direct (experiential learning) kind of this proven produce change far-reaching pro-environmental behavior more lasting compared to with just transmission knowledge One direction inside class (Yemini, Engel & Ben Simon, 2025).

Through action practical, students can observe in a way direct impact ecological from behavior daily they. This is build awareness critical about connection between footsteps ecological personal with sustainability ecosystem local. As put forward by Andrew Dobson (2003), awareness ecological citizens started from confession that action private we are inside House or school own real material impact to right life other creatures beyond the boundaries of the space private.

Role of Activities Ecological in Formation Character and Green Skills

Participation active in project environment school No only increase ecoliteracy students, but also contribute fundamentally towards formation character responsible citizens answer. Through workmanship project ecological in a way collaborative, students trained for develop empathy social, responsibility answer collective, sense of ownership to facility public, as well as concern to justice environment (Woods & Berker, 2022). This process help student for beyond interest personal selfish and act for the good together (*common good*).

In addition to moral character, participation this also grows essential green *skills* for the future students. Different with competence generic, skills green covers ability analytical systemic, ability solve problem ecological local, capacity collaborate cross discipline, as well as readiness for take decision ethical based sustainability. Skills practical This equip student with capacity real for participate active in advocate policy friendly environment in society wide.

Influence Activity Ecological to Perception Students and the Internalization of Cultural Values

Joint FGD student reveal existence shift perception very significant subjective about connection between civilization man with natural universe. Before follow project sustainability, in part big student look at natural utilitarian-anthropocentric natural viewed just as commodities or background behind passive that can exploited without limits for support need humans. However, after through a process of action and reflection critical, students start adopt view ecocentrism or biocentrism which places man as equivalent integral parts in nets global life.

Internalization mark this become very sturdy when integrated with wisdom culture local. As example, introduction literacy culture river or wisdom local in guard traditional springs help student linking draft citizenship modern ecology with identity culture ancestors they. Experience direct touch with reality ecosystem local This open eye student to urgency preservation environment live and help they internalize values sustainability in a way deep to in structure belief personal they.

Synergy Collaborative between Schools and Local Communities

For overcome limitations time, curriculum, funding, and facilities physical, this research s find that school must brave demolish wall barrier conventional and constructive synergy close collaboration with community local, government regions, environmental non- governmental organizations (NGOs), and sector private sector. Synergy this external not only expand access student to expertise and resources power ecological, but also presents stage authentic action for student for actualize agency citizenship they are in the middle public real.

As example, partnership school with service cleanliness city or waste bank community local can facilitate management programs waste school in a way professional with system economy circular. Work The same with environmental NGOs allows student participate in conservation programs real, like restoration rivers, mangrove planting, or campaign anti-plastic social movement at the regional level. Multi- stakeholder partnership pattern this is very much in tune with Whole-Institution approach principle (approach) institutional comprehensive) recommended by UNESCO, where the values sustainability not only taught as material memorization in class, but rather seep in to in all governance institutional, operational physique school, culture inhabitant school, until relation partnership with public wide (Combes, 2026).

Several countries have show success of structured this programs. For example, the implementation of the national program "*Săptămâna Verde*" (National Green Week) in Romania or movement *Global Eco-Schools* (Vesely, Szövérfi, Hajdu & Hajdu, 2025), where formal curricula are integrated in total with action preservation environment based community and assessment impact measurable realities. In Indonesia, success initiative local such as the "Kampung Selo Beraksi" program (Fatmalasari, Yuliandari & Gunawati, 2019) which proves that that when school synergize in a way active with movement preservation environment based society, things the not only speed up formation character students, but also provide impact ecological positive in a way direct for recovery surrounding environment school.

4. Conclusion

Based on analysis results and Discussion research, can concluded that integration ecological citizenship in learning Civics in a way significant transform awareness environment student school medium. Involvement active student in project ecological practical, such as processing programs waste and reforestation school based on the GLV model, successfully grow empathy ecological (moral feeling) and triggers action real preservation nature (moral action) which is rooted in shift paradigm think from anthropocentrism going to ecocentrism. Although Thus, the effectiveness integration This still very limited by challenges structural in the form of curriculum Civics is full of formal content of state administration, minimal capacity ecopedagogy of civics teachers, limitations facility green in school, as well as gap source Power between school urban and rural.

For strengthen implementation education sustainability-oriented citizenship requires comprehensive policy reform. through integration ecological citizenship as achievements core learning in curriculum Civics, accompanied by update textbooks that emphasize justice environment and ethics ecocentric. This effort need supported by training sustainable for teachers to increase competence ecopedagogy, literacy postdigital, learning based projects, as well as ability manage anxiety climate students. In addition, the school need apply approach

whole institution with integrate values sustainability to in culture, governance, and operations school so that functioning as laboratory life for practice sustainability. All transformation the should strengthened through system assessment standardized sustainability, which is not only measure achievements knowledge, but also change pro- environmental behavior, formation character green, and impact real school programs to sustainability environment in the community around.

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