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## Critical Pedagogy for Climate Action: Reviewing Transformative Educational Practices for Social and Environmental Justice

Meriyani W Tungoe

Research Scholar, School of Education, RIMT University, Mandi Gobindgarh, Punjab, India

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### ABSTRACT

There is widespread agreement that sustainable development should be completely integrated into planning. This is because planning is defined as “a means by which society decides collectively what urban [and rural] change should be like and tries to achieve that vision by a mix of means.” Despite the global nature of the climate catastrophe and the critical nature of the situation, many of the solutions put social prejudice and inequality at the forefront. Beginning with scientific education during the climate crisis, this article promotes a conversation on curricular integration as a radical pedagogy. A radical pedagogy for confronting the climate catastrophe, “an anti-oppressive curriculum integration practice” is proposed by bell hooks to transcend boundaries in teaching, and Paulo Freire's writings on “a radical form of emancipatory pedagogy” are woven throughout the review. The paper emphasizes the need for educators to cultivate a critical pedagogy that places community change and political activism at its core, and incorporates extracurricular activities in raising climate awareness among children and youth. By showing how critical pedagogy may change universities to make students more engaged in sustainability issues in a way that is both reflective and transformational, this research adds to the larger conversation about Education for Sustainable Development (ESD).

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## Introduction

British daily newspaper The Guardian's environment editor, Damian Carrington, alerted readers in May 2019 to a new style guide for modifying environmental references and the reasoning behind them (Carrington, 2019). Given the scientific consensus that climate change is a global disaster waiting to happen, the editorial article suggested that the phrase "climate crisis" would be more appropriate than "climate change." Scientists are attempting to convey the news of the sudden shifts in the world's climate and the social and environmental impacts of these changes, and this shift reflects that.

The triple crisis of climate change, biodiversity loss, and social-environmental injustices calls for new technologies that prioritize Earth, but it also necessitates a paradigm shift in human understanding of our role in the natural world and our interconnectedness with other forms of life. Conventional methods of environmental education do not cultivate the critical thinking and community organization essential for addressing the structural causes of environmental degradation and inequality. Phelps and Valler (2024) correctly assert that to facilitate sustainable transitions, we must consider and strategize beyond the present institutional requirements. According to Albrechts et al. (2020), sustainable development is a broad goal of planning that seeks to change not just where people live but also how they think and how institutions work through the use of different forms of communication and other skills.

Marx's critique states that the Frankfurt School was the first to bring critical pedagogy to Europe. Freire introduced the idea of critical pedagogy in the 1970s as a way to criticize how the current educational system relies on stories and formal rules (Chalaune, 2021). Freire's critical pedagogy caused a big change in the way schools worked. The purpose of story education was to give a voice to students and groups that weren't well-represented and were being oppressed.

## Radical pedagogies for the Climate crisis

As a result of the climate crisis's severity, the urgency of the need to address it, and the fact that students are not being taught about it in school, science teachers must adopt more radical and critical stances. Education for Sustainable Development has been taught using a variety of pedagogical techniques, each of which has helped students to engage more deeply and get a better grasp of the subject. Methods such as problem-based learning, participatory learning, and experiential learning fall within this category. Students may get practical, hands-on experience with sustainability issues via experiential learning, which prioritizes "learning by doing" (Dutra, 2025). Students' critical thinking, creativity, and teamwork abilities are bolstered by problem-based learning, which challenges them to solve actual problems.



According to Sterling (2011, pp. 27-28), "participatory learning" places an emphasis on classrooms that are student-centered and collaborative, where students take an active role in their own education while also interacting with teachers and classmates. Pedagogies like these play a vital role in ESD because they teach students to think critically, make sound decisions, and take decisive action—all of which are necessary for solving the world's sustainability problems.

This study uses Paulo Freire's (Garavan, 2010) work to build such radical alternatives; Freire is widely acclaimed for his work in recognizing and articulating "a radical anti-oppressive pedagogy." The study situates them in a conversation with critical viewpoints that seek to transcend limits in teaching and methods of comprehending experiences (hooks, 1994). In response to both the history and the present in Brazil, Freire launched a pedagogical-political initiative. It was a turning point for traditional Latin American cultures, and Freire saw it happening in Brazil as well. A shift in perspective and approach to teaching was necessary to facilitate such a transition. In light of our species' present predicament, the core idea remains fascinating, even if the specific diagnosis may have changed (Salinas et al., 2023). No plausible and workable solution to this problem seems to be on the horizon in today's educational system. A more collaborative, conversational, and all-encompassing approach to curriculum development may be gleaned from Freire's writings, which constitute a radical criticism of contemporary education. As Freire put it,

*"The current, real-world condition that reflects the people's hopes and dreams must be the beginning point for planning the subject of education or political activity. We must expose this existential, tangible, current condition to the people as a dilemma that confronts them and necessitates a response, not only intellectually, but also in terms of action by using specific fundamental contradictions." (Freire, 1970)*

Humans, according to Freire (1970), can only learn to envision better living situations and alter their actualities in this manner, and only on the foundation of a critical awareness. In a classroom setting, this implies that students may learn to identify the whys, hows, and whos of the people and forces that are impacting their environment and daily lives via the examination of certain themes and aspects of their own experiences. Below, we provide a model that lays out the steps necessary to carry out such an analysis, including how increasing awareness via a single action is necessary for the subsequent ones.



### **Eco-Pedagogy in Higher Education**

Ecopedagogy is a way of teaching and learning that takes a critical look at human perspectives on the planet and its natural resources via the work of Brazilian educator Paulo Freire and other critical pedagogues (Misiaszek, 2020). It stands for an all-encompassing method of teaching that aims to raise environmentally conscious individuals who can tackle complicated social and environmental problems from an Earth-centric viewpoint, one that does not center on humans but on all social and ecological systems (Misiaszek, 2020). One step toward eradicating ecological degradation and human control over the natural world is to take an ecopedagogical view of the Just Transition, which acknowledges the interdependence of environmental degradation with social, political, and economic inequities.

Misiaszek (2020) asserts that ecopedagogy, aligning with the United Nations Sustainable Development Goals (SDGs), particularly SDG 13, encourages students to critically examine the interactions among diverse societal, political, economic, and ecological systems. Ecopedagogy can reveal concealed power dynamics and disparities, providing enduring frameworks of resilience, adaptation, and mitigation rooted in justice (Rahman et al., 2023). This study employs an ecopedagogical framework within the context of Just Transition to analyze these narratives and illustrate their potential to reinforce the existing order. Koyama and Watanabe (2023) discuss climate change and its impact on values, knowledge systems, and social structures. They emphasize the broader objective of integrating climate change education into university curricula to foster positive transformation. Both pieces emphasize the necessity for profound planetary insights into sustainability and development, alongside a spectrum of essential local-to-global viewpoints.

### **Freirean Environmental education and the Climate emergency**

Education for Sustainable Development's focus on encouraging critical thinking and learning through experience is very similar to Freire's main ideas. Critical pedagogy, which emphasizes critical awareness and participatory methods, ensures that sustainability education transcends mere theory, thereby increasing the likelihood of transformative outcomes in Education for Sustainable Development. Freire stressed that teaching is hard without love and the will to keep trying until you give up (Freire et al., 2018). From this perspective, educators are required to invest personally and intellectually in their students, serving as both mentors and collaborators in the creation of transformative educational opportunities. Gadotti, on the other hand, takes a broader view when she talks about the importance of planetary citizenship. She says that a sustainable future can only be reached by fixing big problems like poverty, illiteracy, and prejudice (Gadotti, 2008).



Freire posits that education is optimally comprehended as a form of unencumbered practice (Freire, 1970). Because of this, teachers need to know how to give students space to move around while they study. This method allows teachers and students to work together in many different ways, which can lead to meaningful learning. Instructors and students alike may benefit from this. Therefore, the best approach for the instructor is to adopt a question-based approach when teaching. Inspire critical thinking by probing the student with questions about real-world issues. The premise that there is no universally applicable approach forms the basis of the curriculum development process. Hence, the curriculum is crafted with the learners' experiences and life realities in mind (Degener, 2002). According to Freire, the needs and goals of the learners should be the starting point for every curriculum development process. Curriculum development, he says, is something that teachers and students can work together on all the time. From this vantage point, everyone engaged in the learning and education process should do their part to ensure that educational planning is effective, and curriculum creation is not a top-down approach. From Freire's point of view, the process of curriculum formation begins with the provision of critical awareness.

The instructor, in Freire's view, poses problems to the students. In order to foster learning habits that benefit their students and the classroom as a whole, he suggests that educators actively participate in the ongoing reconstruction of their own curiosity-driven paths. Actually, students are given more agency in shaping their own learning experiences and social roles when they solve problems and apply what they've learned in real-world contexts (Dewey, 2011). Teachers may help their students gain agency by drawing attention to the replicability of status inequality in schooling and providing resources for social institutions. Hence, educators need to be well-versed in the issues of inequality and have the capacity to challenge and change the status quo. This is how they are thinkers who bring about transformation. This intellectually transformational function is associated with taking part in the conversation, learning from students, and appreciating their perspectives.

For students to establish legitimacy, assist in evaluating justice, and rights within their educational and life circumstances, Freire et al. (2018) argue that instructors should facilitate classroom experiences that foster relationships in which students can take an active role in their own learning and cultivate a critical awareness. Educators should focus on helping students develop critical thinking skills and a desire for reciprocal humanization, as pointed out by Freire (1970). The role of the instructor is to ensure that the pupils grasp the reasoning behind the facts in this regard. Teachers also want to give students power by making the classroom a place where they can connect with people who are oppressed and learn how power and privilege affect society.



Even so, these problems offer a lot of chances for research and new ideas. Removing the barriers to integrating critical pedagogy into Education for Sustainable Development could lead to more effective and inclusive educational practices. Barth and Rieckmann (2011) say that the rules and cultures of colleges and universities could make it hard to bring in the new ideas that ESD needs. They emphasize the necessity for curricular reforms that foster collaborative, interdisciplinary learning and challenge traditional pedagogical approaches (Barth & Rieckmann, 2011, pp. 28-29). There are systemic shortcomings that make it hard to incorporate student-centered and dialogic techniques into teacher development.

### Conclusion

A pedagogy that gets people ready to learn, think, and act on social and environmental issues may help make the transition to low-carbon societies easier. “Freire's Pedagogy of the Oppressed” is an important book to read if you want to learn how to fight against psychological defense mechanisms like climate denial, silence, and skepticism, as well as other forms of resistance to climate change. In this case, his focus on conscientization is very important. Collective action must confront significant challenges at micro, meso, and macro levels; therefore, it is essential to emulate Freire by transcending oppression through collaboration, compassion, and humility. A key part of radical climate action that can be encouraged in non-formal educational programs is how he defines praxis as “reflection and action upon the world to transform it.” His work on co-intentional, problem-posing education is also helpful for developing strategies for teaching and learning that promote socio-ecological transformation. The process of developing a Freire curriculum is horizontal. The way in which parents, students, and educators all need to be included in the process of creating lesson plans. The libertarian ideals held by Freire should inform the curriculum's development in light of the historical and cultural milieu in which it will be implemented. According to their perspective on curriculum development, schools are interdependent on political systems, productive institutions, and the economy. Changes to our system of education and curriculum development at all levels, from elementary school to college, may benefit from this strategy.

### References

1. Sterling, S. (2011). Transformative Learning and Sustainability: Sketching the conceptual ground. *ResearchGate*.



- [https://www.researchgate.net/publication/266184629\\_Transformative\\_Learning\\_and\\_Sustainability\\_Sketching\\_the\\_Conceptual\\_Ground](https://www.researchgate.net/publication/266184629_Transformative_Learning_and_Sustainability_Sketching_the_Conceptual_Ground)
2. Abo-Khalil, A. G. (2024). Integrating sustainability into higher education challenges and opportunities for universities worldwide. *Heliyon*, 10(9), e29946. <https://doi.org/10.1016/j.heliyon.2024.e29946>
  3. Albrechts, L., Barbanente, A., & Monno, V. (2020). Practicing transformative planning: the territory-landscape plan as a catalyst for change. *City Territory and Architecture*, 7(1). <https://doi.org/10.1186/s40410-019-0111-2>
  4. Barth, M., & Rieckmann, M. (2011). Academic staff development as a catalyst for curriculum change towards education for sustainable development: an output perspective. *Journal of Cleaner Production*, 26, 28–36. <https://doi.org/10.1016/j.jclepro.2011.12.011>
  5. Carrington, D. (2019). Why the Guardian is changing the language it uses about the environment. *The Guardian*. <https://www.theguardian.com/environment/2019/may/17/why-the-guardian-is-changing-the-language-it-uses-about-the-environment>
  6. Chalaune, B. S. (2021). PAULO FREIRE’S CRITICAL PEDAGOGY IN EDUCATIONAL TRANSFORMATION. *International Journal of Research -GRANTHAALAYAH*, 9(4), 185–194. <https://doi.org/10.29121/granthaalayah.v9.i4.2021.3813>
  7. Degener, S. (2002). Making sense of critical pedagogy in adult literacy education. *ResearchGate*. [https://www.researchgate.net/publication/2409967\\_Making\\_Sense\\_of\\_Critical\\_Pedagogy\\_in\\_Adult\\_Literacy\\_Education](https://www.researchgate.net/publication/2409967_Making_Sense_of_Critical_Pedagogy_in_Adult_Literacy_Education)
  8. Dewey, J. (2011). Experience and education. In *Experience and Education*. <https://www.schoolofeducators.com/wp-content/uploads/2011/12/EXPERIENCE-EDUCATION-JOHN-DEWEY.pdf>
  9. Dutra, A. (2025). *Critical Pedagogy for a Sustainable Future Investigating Paulo Freire’s Influence on Education for Sustainable Development*. <https://uu.diva-portal.org/smash/get/diva2:1932306/FULLTEXT01.pdf>
  10. Freire, P. (1970). *Pedagogy of the Oppressed*. New York Continuum Books. - References - Scientific Research Publishing. (n.d.). <https://www.scirp.org/reference/referencespapers?referenceid=2059960>



11. Freire, P., Macedo, D., & Freire, A. M. A. (2018). *Teachers as cultural workers*. <https://doi.org/10.4324/9780429496974>
12. Gadotti, M. (2008). Education for Sustainability: A Critical Contribution to the Decade of Education for Sustainable Development. *Green Theory & Praxis: The Journal of Ecopedagogy*, 4(1), p. 15-p. 64. <https://doi.org/10.3903/gtp.2008.1.3>
13. Garavan, M. (2010). Paulo Freire's Pedagogy of the Oppressed. *ResearchGate*. <https://doi.org/10.2307/30023905>
14. hooks. (1994) *Teaching to Transgress: Education as the practice of freedom*. (1994, December 1). Routledge & CRC Press. <https://www.routledge.com/Teaching-to-Transgress-Education-as-the-Practice-of-Freedom/hooks/p/book/9780415908085>
15. Koyama, D., & Watanabe, T. (2023). Why a dispositional view of ecological literacy is needed. *Teaching in Higher Education*, 28(5), 1108–1117. <https://doi.org/10.1080/13562517.2023.2198637>
16. Misiaszek, G. W. (2020). Ecopedagogy. In *Bloomsbury Publishing Plc eBooks*. <https://doi.org/10.5040/9781350083820>
17. Phelps, N. A., & Valler, D. C. (2024). 'What planners don't do is plan': recovering the English strategic spatial planning imagination. *Planning Practice and Research*, 39(5), 876–891. <https://doi.org/10.1080/02697459.2024.2385227>
18. Rahman, M. F., Falzon, D., Robinson, S., Kuhl, L., Westoby, R., Omukuti, J., Schipper, E. L. F., McNamara, K. E., Resurrección, B. P., Mfitumukiza, D., & Nadiruzzaman, M. (2023). Locally led adaptation: Promise, pitfalls, and possibilities. *AMBIO*, 52(10), 1543–1557. <https://doi.org/10.1007/s13280-023-01884-7>
19. Salinas, I., Fernández, M. B., Johnson, D., Bastías, N., & The Author(s), under exclusive licence to Springer Nature B.V. 2023. (2023). Freire's hope in radically changing times: a dialogue for curriculum integration from science education to face the climate crisis. *Cultural Studies of Science Education*, 18, 21–39. [https://pmc.ncbi.nlm.nih.gov/articles/PMC9938953/pdf/11422\\_2023\\_Article\\_10157.pdf](https://pmc.ncbi.nlm.nih.gov/articles/PMC9938953/pdf/11422_2023_Article_10157.pdf)