



SUSTAINABILITY IN CURRICULUM: TRANSFORMATIVE GREEN PEDAGOGICAL APPROACHES IN HIGHER EDUCATION

Prakriti Ranjan Sarkar 

RESEARCH ARTICLE



Author Details:

Assistant Professor,
Department of Education,
Aliah University, Kolkata,
West Bengal, India

Corresponding Author:

Prakriti Ranjan Sarkar

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Abstract

Sustainability in Pedagogy and Curriculum aims to prepare learners as future citizens with an adequate level of intuition and sense of promises through their reflections and actions. The final goal is the learners' actions and commitments that will protect the environment, reduce degradation and ensure societies' sustainability. Active engagement with their immediate surroundings is thus a crucial means of learning about the environment as it makes them appreciate how many their commitments can make a difference in the society. The contemporary curriculum and pedagogical approaches make learners accustomed to mugging up information and throwing up it in writing examination papers. There is a need to explore new approaches to expose the learning communities through sustainability curriculum that has the potential to transform students' thoughts, actions and involvement. This article makes an epistemic examination of related literature to reorganize, outline, and deliver a holistic understanding of a transformative green pedagogy required in modern Higher Education setup. The main notion compares two pedagogical models that vary decidedly in their emphasis on the prerogative of the learner's prior knowledge and beliefs, the engagement of the learner, and the potential for critical thinking and transformative learning that included spiritual intelligence, mindfulness, reflection and scope for Knowledge co-creation through green initiatives. It is found that a transformative green pedagogy has the potential to reconnect to self, others and the nature – a shift from dialogue to trilogue style of teaching learning that can lead societies to become more sustainable.

Keywords: Sustainability, Curriculum, Transformative, Green, Pedagogy, Higher Education

Introduction

Today this is a fact that the whole world community is grappling with pressing environmental and climatic changes. Various ecological and environmental degradations, resource depletion, habitat destructions, global warming and several other similar factors have played a very crucial role which can be categorized as a very impending danger to the sustainability for development. Many international and national organizations are actively joining hands in policy making and its implementation through governmental, inter-governmental and NGO level actions on green initiatives. Green initiatives mean finding alternative means of actions in which our environment and that paves the way towards sustainability. Every sector in our society from business to engineering, from medical to education, from governance to political system, from healthcare to entertainment everywhere the need for sustainability is felt deeply. Educational institutions like schools, colleges, universities have, with so many curricular reforms to include Environmental education into their mainstream education through various modes of inclusion and integration. In this context higher education institutions can play a very important role in transforming the perception of the young students towards better sustainability and better economic development. Across the globe it is seen that a variety of pedagogical changes particularly in the teaching learning of higher studies that incorporate sustainability principles for ensuring natural resource conservation and social responsibility through their day-to-day learning experiences. Green pedagogy is one of the important transformational approaches which has greatly insured environmental sustainability.

Green Pedagogy

Green Pedagogy is a unique pedagogy. It was established at the University College for Agrarian and Environmental Pedagogy (UCEAP) in Vienna. Its aim was to foster a robust sustainability mindset among students. This approach was initially designed to integrate the strengths of agricultural, environmental, and pedagogical practices. The emphasis of Green Pedagogy lies in facilitating learning processes that empower individuals to engage with and develop sustainable solutions for the conservation and utilization of natural resources. Nevertheless, the initiation and dissemination of this pedagogical approach faced significant challenges. Only after 2016, world literature became popular on this topic and subject, in fact green pedagogy actually gives

emphasis on teaching awareness and good practices that will ensure environmental and ecological sustainability through the learning processes (Jorgenson, 2011). The primary notion of the green pedagogy is to initiate the process of teaching learning by connecting with the natural world and our natural surroundings. Green pedagogical approaches referred to teaching strategies that incorporate sustainability principles basically through active learning that will ensure engagement with the surrounding, secondly interdisciplinary learning it is also concerned with the relatedness all the subjects and ultimately creating a holistic understanding of sustainability and its challenges, thirdly imaging the ability to critically think and reflect upon our own actions and how this actions improve our degrade our environment.

There are six primary focus areas closely associated with the teaching and learning context of Green Pedagogy. According to Hochschule für Agrar- und Umweltpädagogik, 2018 these six areas include:

- Community collaboration,
- Reflective practices,
- Contingency planning,
- Practical operations and activities,
- Provocation, and
- Emotional engagement.

Introducing Sustainability in Curriculum

Introducing sustainability into curriculum refers to provide interesting context among the students to develop the power of numeracy, literacy, self-learning and critical thinking skills on environmental issues. The significance of sustainability in curriculum is actually to provide opportunity to the students to explore their local environment and development attitude towards they are on local environment. Students can also be involved in some active engagement by participating in debates on social and environmental challenges. It is to provide a conducive learning environment to develop their own ideas for conservation of the nature and natural resources in an innovative and unique manner. They can use their own ideas to act and contribute in the society and community. It paves to way for Knowledge co-creation.

Creating sustainability Mindset

Sustainability mind sets is a way of thinking where individuals, communities or organisations think about long term preservation and other considerations regarding environmental social and economic sustainability. When students adopt sustainability mind set, they actually develop long-term thinking patterns with special consideration to the impact of their actions on the coming generations. Sustainable mind sets provide scope for recognition to the fact that each and everything in this world is interconnected and any eruptive action could lead to ripple effects. So, sustainability is not a case of isolated issue it is about the enter system. Sustainable mindset is also about resource conservation. The importance of conserving resources both natural and human made to minimise waste and maximize efficiency. Sustainable mindset also talks about social equity and equality higher actions and their impact Such as promoting fair labour market improving Clean Energy enhancing sustainable agriculture reducing high carbon transportation and caring about the environment for next generation. Sustainable mindset also talks about collaborative and cooperative mindset in workplace. It is about manifestation of partnership, collaboration, collective and shared efforts. For this purpose, pedagogical approaches need to be changed.

Models of Transformative Pedagogical Approaches

Two models of transformative pedagogical approaches are presented below.

Sustainability Teaching in Dialogue Style

A dialogue style in teaching comprises a back-and-forth exchange between a teacher and students, where both parties actively contribute to constructing knowledge and understanding on the concept, nature and dynamics of sustainability. This approach focuses on engaging students in kinds of interactions like discussions, debates, and critical mental activities. The teacher acts as a facilitator, encouraging students to explore and reflect on ideas rather than delivering information directly as it happens in lecture method. Both the stakeholders have the opportunity to have scope for observations; representation and explanation; actions by the student; as well as actions by the community that is the human race. Teacher has the scope to initiate open-ended deliberations on sustainability issues, moral catches between balancing economic development with environmental safety, and at the same time finding remedies like green technologies, sustainable agriculture etc. One of the major strengths of this teaching style is that it can help students to develop their collaboration, cooperation and communication skills.

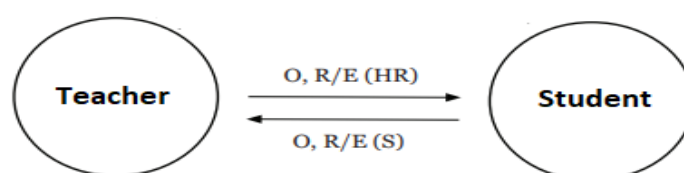


Fig: 1 The Dialogue style (source: Roberts, 1996).

Code: O = observation(s); R/E = representation and/or explanation; S = by the student;
HR = by the human race.

Sustainability Teaching in Trialogue Style

Triologue style of teaching precisely refers to a discussion involving three distinct parties, often including a teacher, a student, and a community or a group of representatives, allowing for more extensive exploration of concepts. Sometimes it can be referred as an in-depth interaction among learner, teacher, and the domain of study. Students' engagement can increase to such a level that the student creates knowledge, a kind of judgment about what they simply opine and what they simply believe. This approach goes in line with constructivist learning theory where students are co-creator of knowledge. A typical example is Project-Based Learning (PBL) where hands-on, inquiry-driven approach engages students on real-world scenario for an extended period of time. They work together in close contact with the community to research, design a plan, and find solutions to complex problems. As for example a project on sustainable community can be a good example in this regard. It gives scope to the students to co-create knowledge on creating a zero-waste school initiative, evolving a plan for sinking the carbon release of a local industry.

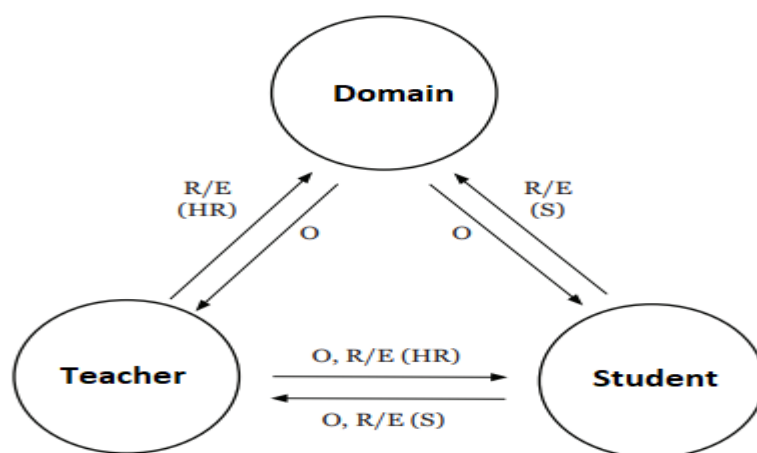


Fig: 2 The Trialogue style (source: Roberts, 1996).

Code: O = observation(s); R/E = representation and/or explanation; S = by the student;
HR = by the human race.

Topics like renewable energy, waste recycling, sustainable agriculture where students can observe and analyze real life sustainability practices are excellent examples where this triologue style of teaching can be very effective. So, this special constructivist learning style helps promoting collaboration, creativity, and critical thinking ability for real-life solicitation and problem-solving. Besides that, hands-on workshops are good examples where students can learn how to prepare compost, create eco-friendly products, how to create energy-efficient devices. Student friendly simulations or role-playing activities can also help students understand the impact of different actions on the environment.

Discussion

In today's world Green Pedagogy helps students to minimize their use of resources, including paper, energy, and water, thereby contributing the conservation of natural resources. Exposure to a field trip can foster a deeper appreciation for nature and highlight the significance of resource conservation. Green pedagogy emphasizes on sustainable practices such as recycling, composting, and common public transportation, to mitigate the environmental consequences of human activities. It helps creating awareness on climate change, helping students grasp the gravity of the issue and encouraging them to formulate potential solutions. Furthermore, Green Pedagogy can cultivate a stronger connection between students and the natural environment, leading to increased appreciation and a commitment to its protection.

Now coming to the transformative role of the dialogue style and the triologue style represent two interactive and participatory teaching methodologies that emphasize communication and active involvement among participants in the educational process. They possess commonalities, they diverge in terms of the number and nature of participants engaged, as well as the types of discussions they facilitate (Wals & Blaze 2006). The dialogue approach highlights the significance of reciprocal communication between educators and learners. It is founded on the principle that learning is an interactive endeavor, wherein knowledge is collaboratively developed through discussion and active participation. The dialogue method is employed in Socratic Seminars, facilitating structured and open-ended discussions among students. This approach includes group discussions or debates that allow students to engage with specific topics and gain knowledge through interaction. Additionally, inquiry-based learning places questions at the centre of the dialogue, enabling students to investigate various solutions (Levkoe, Brail, & Daniere 2014). On the other hand, the triologue style transforms the traditional educational model by incorporating three essential participants: the teacher, the student, and the subject domain matter or content from community. This method shifts the emphasis from a simple teacher-student interaction to a dynamic three-way engagement that recognizes the subject or topic of discussion as an active contributor. The triologue teaching style fosters a pedagogical focus on sustainability. In this model, the prior knowledge and existing ideas of students play a crucial role in the teaching and learning process; students actively engage as participants both in the classroom and during practical field experiences. It is a Three-Way Interaction. The dynamics among the teacher, the

student, and the content fosters a more profound investigation of the subject matter (Buckler & Creech 2014). The content – be it a text, theory, artifact, or concept – acts as an active participant in the discourse, with its intricacies and subtleties examined collaboratively. This model promotes deep interaction among the students, the teachers, fellow community members, and the subject matter, enabling students to discern between mere opinion and credible beliefs. Such engagement is a fundamental aspect of constructivist learning theory, where previous conceptions and beliefs are evaluated against the current knowledge being explored, leading to the development of new understandings (Alhussini, 2020).

Conclusion

By implementing transformative green pedagogical strategies, higher education institutions can significantly influence the development of a more sustainable future. These green pedagogies not only equip students with essential knowledge but also motivate them to become ethical and proactive leaders capable of addressing sustainability challenges through diverse and innovative approaches. The future of sustainability in higher education hinges on the capacity to revolutionize the teaching of sustainability, ensuring it becomes an integral component of every student's educational experience, irrespective of their chosen discipline.

Now a question can be raised that in the contemporary formal higher education system can adopt the transformative green pedagogies. If not in full partial or phase wise adoption and a gradual shift from dialogue to trialogue style teaching may be practiced.

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