

# Policy Brief

## Promoting Procedural Environmental Rights (PER) through Pre-Service Science Teacher Training: A Policy Brief for Teacher Training Institutions



**Zainun Mustafa**

Universiti Pendidikan Sultan Idris, Malaysia  
zainun.m@fsmt.upsi.edu.my

This policy brief is an outcome of the 2023 research grant program of SHAPE-SEA, developed as part of its commitment to advancing evidence-based policy and practice in the region.

### Executive Summary

In most countries in Southeast Asia, the existing environmental legal framework heavily relies on government regulation through administrative and criminal measures (Mustafa, 2020). However, the effectiveness of the traditional 'command and control' mechanism has been questioned (Memon, 2000).

Based on a general overview of the Southeast Asia context, **this policy brief recommends mainstreaming environmental rights in Southeast Asia through existing teacher training systems.** It proposes integrating procedural environmental rights (PER) into subject-based training curriculum of pre-service teachers while recognizing future science teachers' role in advancing environmental rights and justice.

### Problem Statement

The UN Transforming Education Summit (United Nations, 2022) addressed environmental challenges as a shared concern requiring proactive measures in the global education ecosystem.

A UNESCO (2021) survey found a major gap in PER teaching readiness of primary and secondary teachers:

- **less than 30% are ready to teach PER**
- **95% recognize its importance**

PER should be integrated into science education pedagogy through teacher training, strengthening future teachers' knowledge and using locally relevant, evidence-based approaches to support sustainability (United Nations Environment Programme, 2022).

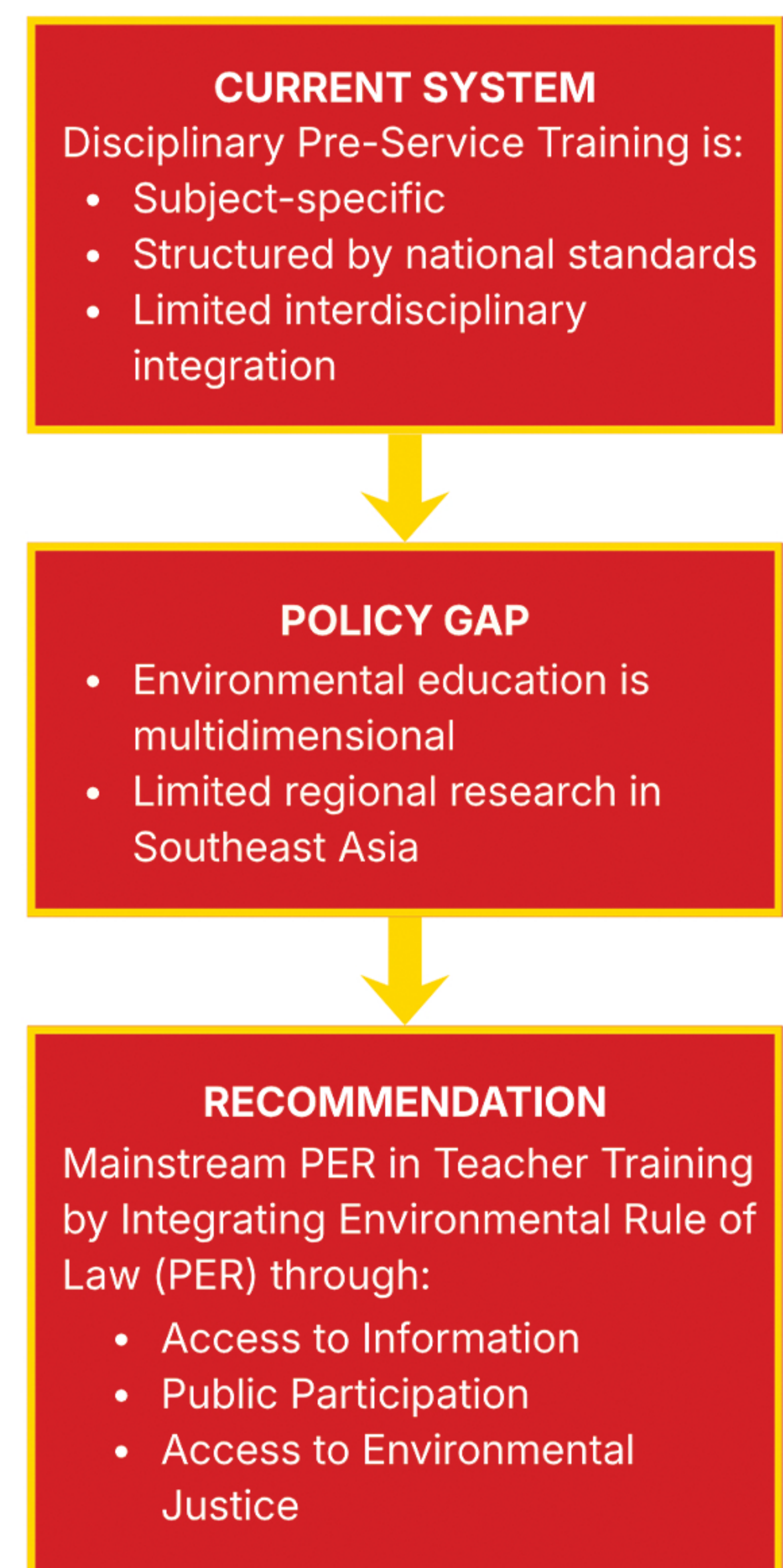
# Analysis of the current landscape of PER in Science Pre-Service Training in Southeast Asia

Currently, pre-service teacher training programs are predominantly subject-specific and disciplinary, structured to meet national standards and requirements. Considering that environmentalism is commonly approached as multidimensional and interdisciplinary at the school level, it opposes the existing pre-service training system, which is disciplinary based. Policies and research on pre-service science teachers addressing PER in Southeast Asia are also limited.

Instead of creating new policies, PER can be integrated into existing pre-service teacher training frameworks.

This approach focuses on three core principles:

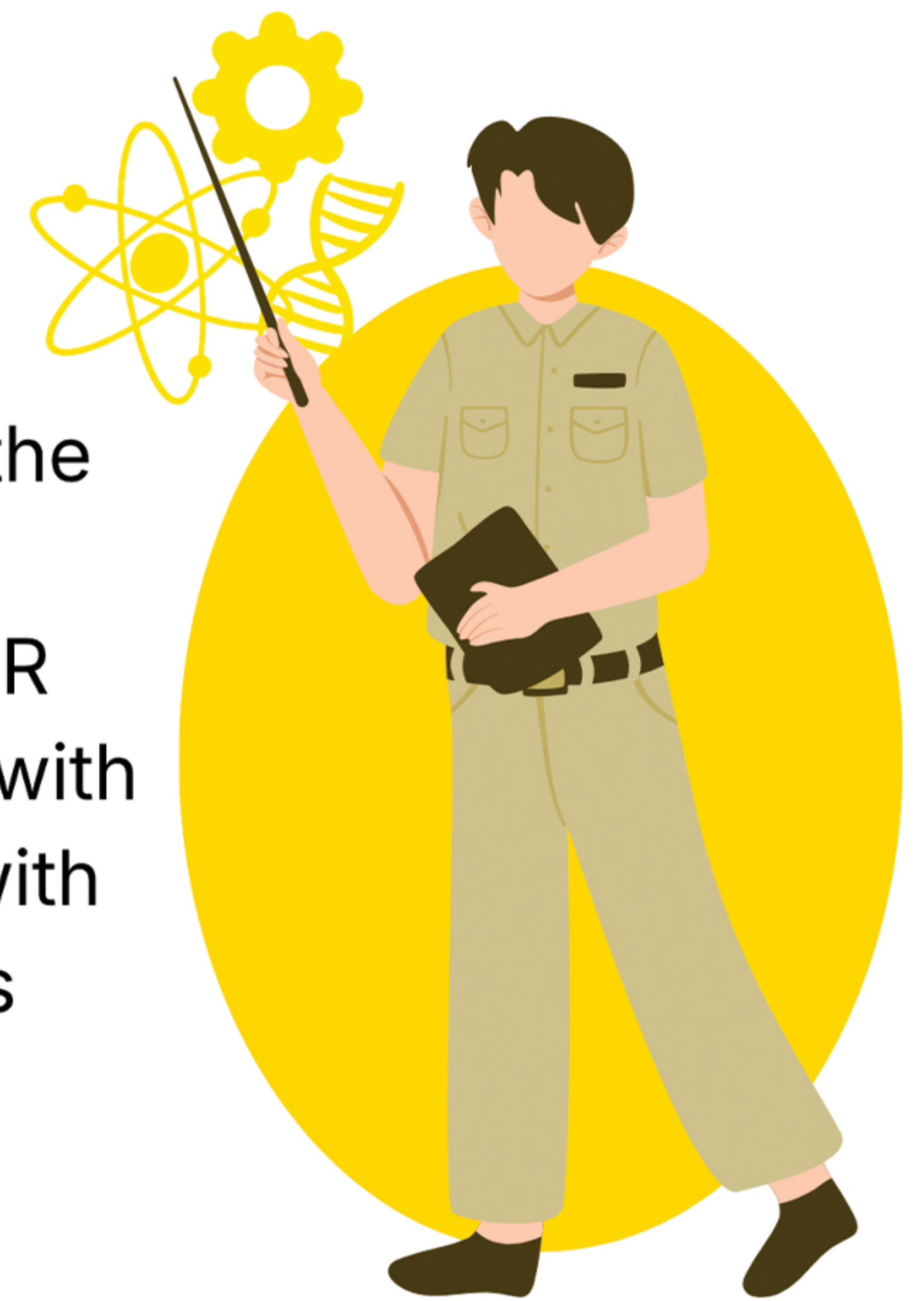
- Access to information
- Public participation in decision-making
- Access to environmental justice



## Policy Recommendations

### 1 Align with science epistemology

PER in the framework of pre-service training must align with the unique epistemological standpoint of the subject matter. Therefore, this policy recommendation suggests including PER into the pre-service training curriculum, ensuring conformity with subject-related considerations. Equipping science teachers with foundational PER frameworks and scientific concepts enables them to integrate PER into classrooms, supporting broader transformation in science education beyond the classroom.



### 2 Co-create a PER framework in science teacher training

The current gap in the readiness of primary and secondary teachers to address environmental challenges is rooted in the lack of specific training on PER. Therefore, a framework for implementation of PER should be developed by providing voices for the trainees themselves to co-create strategies. Rather than surface-level awareness, the module should include basic legal frameworks, scientific concepts, and practical strategies for integrating PER into classrooms, using local examples to promote critical thinking and environmental literacy.

- 
-  Legal frameworks
  -  Scientific concepts
  -  Classroom strategies
  -  Local environmental cases

### 3 Revisit the role of the teacher as environmental advocate

Teachers are always regarded as the policy implementer in an educational setting. Given that ASEAN is moving towards a people-centered policy, pre-service teacher training should coach teachers to voice and articulate their thoughts respectfully. By sensing ownership and responsibility through active participatory techniques and experiential learning, the voices of everyone will be heard and acknowledged, including the students, in a shared concern about environmental challenges.



Strategically, the teachers should look into other best practices, research findings and successful implementation of PER in education. Case studies from different teaching contexts would be helpful in understanding the process of integrating PER in science education. Teachers could utilize existing networking platforms through associations and intergovernmental institutions.

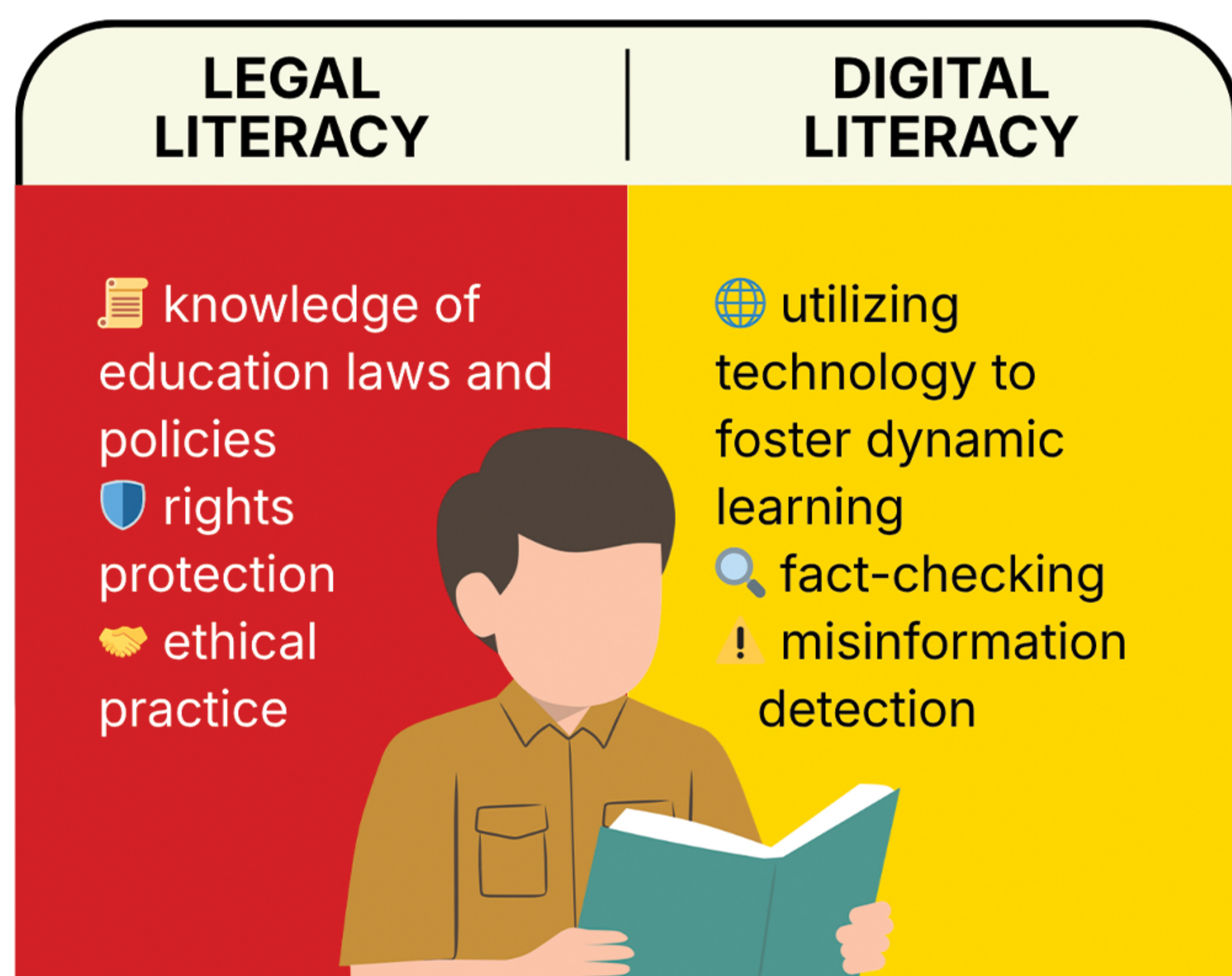


### 4 Legal literacy and digital literacy for the pre-service teacher

Legal and digital literacy is important for preparing the future teacher to navigate the abundance of easily accessible information and the complexities of the modern educational landscape. As misinformation proliferates, digital literacy enables teachers to evaluate online information and teaches the students to do the same. At the same time, teachers should utilize advances in technology to foster the dynamic and interactive learning environments that a digital technology could offer.



#### THE PRE-SERVICE TEACHER'S TOOLKIT



Legal literacy ensures that the teachers operate within ethical and legal boundaries, fosters a safe and conducive learning environment, safeguards the rights of both teachers and students, and could shape the minds of future generations. Therefore, both forms of literacy should operate in parallel while teachers address global issues transparently and responsibly, fostering an informed and critically thinking citizenry, especially when they engage with external organizations, by ensuring ethical and legal considerations are met.

## Conclusion



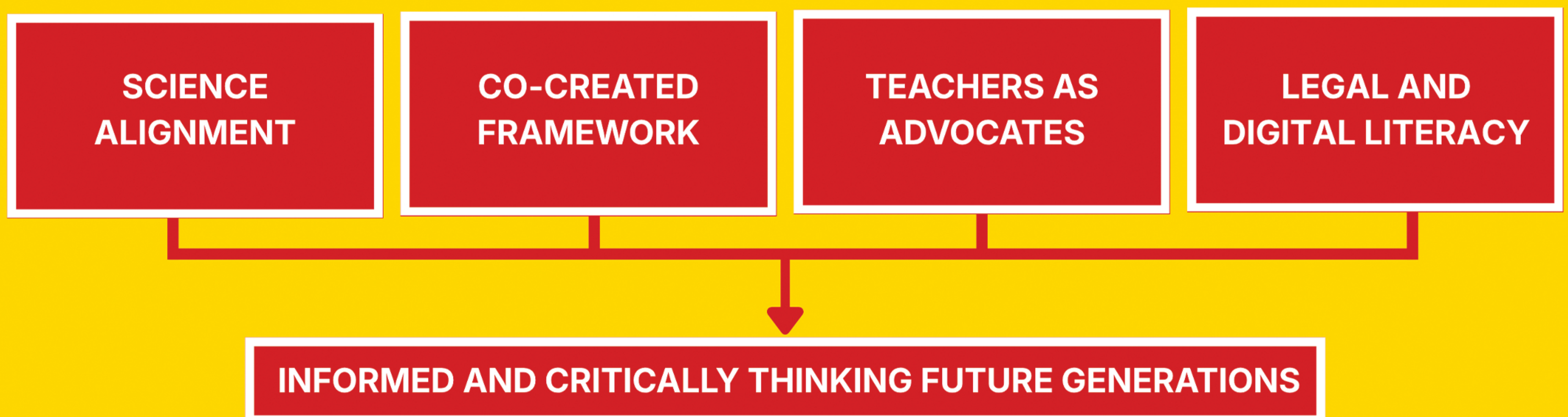
The Global Report emphasizes the urgency of tackling environmental challenges, revealing a significant readiness gap among teachers. The gap could be filled by embedding PER in pre-service teacher training. Recognizing the mismatch between the current disciplinary based training and the multidisciplinary approach in environmentalism in school-level education, this policy highlights the strategy of embedding PER in the existing framework of pre-service teacher training.

### The key recommendations:

- Align PER with science epistemology.
- Co-create a PER framework in pre-service science teacher training to address readiness gaps.
- Strengthen teachers' role as environmental advocates through participatory and experiential learning.
- Integrate legal and digital literacy into pre-service training.
- Mainstream PER to develop informed, critically thinking science teachers.



## The Four Pillars in Mainstreaming PER in Pre-Service Teacher Training



### Acknowledgements

This policy brief is based on the author's ongoing work on her PhD thesis: "Visualizing Sustainability: Participatory Discourse to Promote Pro-Environmental Attitudes Among Science Pre-Service Teachers"

This research is funded by SIDA through the Strengthening Human Rights and Peace Research and Education in Southeast Asia (SHAPE SEA) Program.

During the preparation of this work the author used Chat GPT in order to identify areas of contextual bias. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.