Climate Change Education in Pakistan: An Analysis of Public School Science Textbooks

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Purpose

The purpose of this study is to understand and describe how science textbooks used in Pakistani public schools describe and teach global climate change. The specific research question is:

How do middle and high school science textbooks present accepted scientific concepts related to climate change?

Background

According to the Environmental Performance Index Pakistan is ranked 169th in the world. Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators covering environmental health and ecosystem vitality. The EPI score provides a metric on how close countries are to their established environmental goals.

Current Environmental Challenges and Environmental Policy of Pakistan

Pakistan is facing a multitude of environmental challenges including air pollution, water pollution, noise pollution, climate change, pesticide misuse, soil erosion, natural disasters and desertification. Current environmental priorities include banning single use plastic bags, sustainability of water ways, human waste management, preserving forested lands. However, information on implementation strategies and evaluation metrics is lacking. Also, no current policies on connecting environmental conservation to education curriculum.

Methodology: Qualitative Document Analysis

The study will attempt to answer this question through the use of a modified analytical framework developed by the O'Keeffe (2013) for the analysis of mathematics textbooks. O'Keeffe’s framework is based on other foundational studies by Halliday (1973), Morgan (2004), Valverde et al., (2002) and Rivers (1990). Following O’Keeffe’s framework, this study will focus on four elements; Content, Structure, Expectation and Language used to communicate climate change concepts in science textbooks (O’Keeffe 2013).

Educational Policy of Pakistan

Current Educational policy of Pakistan (2018) has established the following priorities.

Priority 1: Decrease OOSC and Increase School Completion
Priority 2: Uniformity in Education Standards
Priority 3: Improve the Quality of Education
Priority 4: Enhance Access to and Relevance of Skills Training

Environmental education is missing from educational priorities.

Documents Reviewed

Review of Public School Books grades 6 through 8
Subjects Science, Geography, Social Studies
Topics covered include History of the people of Asia, Government, the Indus Valley Civilization, Skill Development.

Environmental and sustainability education not introduced in these subjects in these grades.

In addition to review of text books based on above framework. Interviewing to teacher so examine how the taught curriculum compares with the intended curriculum.

Case Study Samples

Main Findings

- Both the environmental policy and educational policy of Pakistan fail to address the importance of environmental, conservation, and climate change at the secondary school level in public school.
- No mechanism exists as yet to bridge this gap.
- Current efforts at sloving environmental deterioration will likely be short term solutions unless future generations are equipped with the knowledge and understand and the civic responsibility of caring for their environment.

References


Rivers, J., (1990), Contextual Analysis of Problems in Algebra 1 Textbooks, University of South Carolina, Presented at the annual meeting of the American Educational Research Association, April, Boston, Massachusetts.

