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Do educational initiatives impact climate change mitigation and adaptation?

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Photo Credits to Mark Kevin L Olimba, YES-O Club Adviser, Sta. Lucia National HS, DepEd SDO Bulacan

The Philippines, in accordance with its Constitution and the Climate Change Act of 2009, integrates climate change education (CCE) into its educational system through the K to 12 program. A systematic review and key informant interviews were done to assess the impact of CCE on learners, focusing on their knowledge, awareness, capacity, and behavior. Key findings reveal challenges in students' knowledge of climate change but slight favorable attitudes potentially influenced by factors like water infrastructure provision in schools which notably catalyzed efforts related to mitigation and adaptation. However, there's a call for broader curricular integration to enhance engagement. While policies and activities enhance climate literacy among teachers and learners, challenges persist in altering cultural practices towards sustainability. The DepEd's efforts include partnerships with various stakeholders, emphasizing community action learning. Recommendations include institutionalizing immersion activities, recalibrating systemic practices, monitoring and evaluating programs, integrating environmental education across subjects, and providing leadership training.

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The Philippines, guided by the 1987 Constitution and the Climate Change Act of 2009, emphasizes the integration of climate change education (CCE) into its educational system. Mandated by the K to 12 programs, the Department of Education (DepEd) incorporates CCE to address the universal impact of climate change on students. This study systematically reviews climate mitigation and adaptation initiatives in basic education, assessing their impact on learners' knowledge, awareness, capacity, and behavior. To evaluate the efficacy of climate mitigation and adaptation initiatives in the basic education sector, this research employed a two-step data collection approach, consisting of a systematic review of literature and rapid assessment. The rapid assessment was accomplished through key informant interviews (KII) with experts in environmental education.

Key Findings

Targeting specific SDGs on climate change

Findings on the perceptions of educators and students on climate change about clean water and sanitation showed that knowledge of climatic change issues is slightly low among students, while their attitude is slightly favorable. It is worth noting that the schools' provision of water infrastructure and/or hygiene facilities were catalytic to something related to mitigation and adaptation. Water availability and unsafe drinking water, however, are still continuing challenges for schools in a changing climate, since these may result in food-borne diseases, among other latent effects.

Concepts related to climate change and its effects

Though DepEd's Youth for Environment in Schools Organization (YES-O) and similar or related programs are integral to increasing the awareness of learners on climate change and their predisposition towards environmentally sustainable behaviors, its school-based climate change initiatives still limit students' climate change engagement since these are co-curricular engagements. These initiatives are mostly done outside the required class hours and participation is not necessarily required across grades levels. For example, YES-O as a school organization holds tree-planting programs that are done once or twice in each school year. Moreover, participants of YES-O activities are mostly for their club members or interested students only. What is more encompassing is curricular integration of climate change adaptation and other related concepts in all subject areas so as to encourage a systems perspective among learners as well as instill in them that climate change adaptation is a primary concern of all sectors or units of society.

Changes in behavior, actions, and increased resiliency triggered by lived experiences on climate imbalance

Policies, curricular integration, and co-curricular activities on CCE in DepEd made school teachers and learners competent and climate literate. School activities and programs related to climate honed learners to be aware of climate imbalance and act for the climate. Meanwhile, the school and teachers develop practices highlighting sustainable consumption and climate-resilient measures. Outputs of these positively impact the environment, ecology, and public health. However, inculcation of behavior and actions on climate imbalance of schools and learners have not greatly overturned their culture and practice toward sustainability.

Contribution of education to changes in the perception of school children on the well-being of the environment

DepEd has proactively integrated CCE into the basic education curriculum, spanning from kindergarten to junior high school, with a focus on combating climate change and fostering sustainable development. While the senior high school curriculum includes a specialized subject in Disaster Risk Reduction and Management (DRRM) within the STEM strand, challenges in implementation have led to issues like insufficient information, confusion among students, and some misconceptions. Co-curricular activities, including YES-O and initiatives like Gulayan Sa Paaralan, complement the curricular challenges.

Interinstitutional Collaborations and Partnerships (e.g., LGU-school, HEI-school, industry-school, NGO/PO-school)

The development or formation of pro-environment competencies could not be developed by the education sector alone. Strategic collaboration among various stakeholders is a more effective means to educate the learners with DepEd as the lead agency. Aside from forging collaboration and partnerships with national agencies, DepEd could also seek the help of local government units (LGUs) to come up with contextualized community action learning activities. These activities are considered active and better efforts and are deemed more effective since they provide learners a chance to explore and experience what is around them. This local connection serves as a good foundation for moving outside into a larger system, broader issues, and better and deeper understanding of causes, connections, and consequences relative to the environment.



Key Recommendations for Policy and Practice

Institutionalization of immersion activities in environmental education

1. Clear elaboration of long-term expected outcomes is necessary in the observation of changed behaviors of each personnel based on institutionalized standards
2. Climate change mitigation and adaptation immersion activities should be a shared responsibility inclusive of all personnel and stakeholders.
3. There should be a well-defined linkage between institutional and community standards on climate change mitigation and adaptation.
4. Environmental/climate change education should also be provided to parents and broader communities to ensure consistency in the application of pro-environment competencies.
5. The program for capacity building within institutions could be further intensified, and research-based verification of members' altered behavior toward environmental wellness could be used to support section 7 of Republic Act No. 9512, also known as the National Environmental Awareness and Education Act of 2008.

Scrutiny and recalibration of systemic practices

1. Reexamination of the sustainability agenda the Philippines adheres to by a more pronounced adoption of the whole-of-nation approach in environmental/ climate change education.
2. Elaboration of the *makakalikasan* core value of DepEd with the inclusion of environmental justice paradigms.

Monitoring and evaluation of environmental education programs

1. Develop a national monitoring, evaluation, and learning (MEL) aimed at enhancing climate change mitigation and adaptation efforts. This national MEL framework should encompass the national, sub-national, and sectoral levels.
2. Address the usual challenges in monitoring and evaluating environmental education programs at the inception of a project and/or program, such as the lack of capacity of implementers, the reliability, availability, and management of data, and human resource constraints.
3. More than reporting what transpired and the impact of environmental education programs, the M&E must be able to provide understanding and learning from change;

inform strategic decisions of implementers; foster dialogue and exchange among stakeholders of the program/project; provide transparency and accountability of sectors involved in the success or demise of the program/project; establish new partnerships or collaborations; and realign the efforts toward international commitments.

Integration of environmental education in all subject areas

The following are examples on how to integrate environmental education in all subject areas: critical pedagogies, localized or contextualized learning, and thematic or topical approaches. Citizen science can also be utilized in different subjects as part of experiential learning. Such curricular interventions would help make environmental education normative in the curriculum.

Environmental education training of school leaders

Recognizing the pivotal influence of school leaders on the educational environment, prioritizing environmental education training in their professional development is crucial. By integrating modules on environmental sustainability, climate change, and ecological stewardship into leadership training, school leaders can promote a culture of environmental consciousness within their institutions. Implementing policies mandating continuous environmental education ensures a sustained commitment to ecological awareness, aligning educational practices with global environmental imperatives. This integrated approach aims to cultivate environmentally responsible leaders and contribute to the overarching goal of preparing students to be well-informed and environmentally conscious citizens.

The aim of the tailor-made environmental leadership/stewardship training is to emphasize the collaboration of schools, the local government, HEIs, and the national government in achieving the sustainable development goals at the institutional level. It also ensures that the programs and projects of each institution and the knowledge learned in schools and HEIs are strategically aligned towards concrete results and/or positive environmental behaviors among students and local constituents which will benefit schools and the communities. It seeks to ensure the continuity of the flow of environmental education from the cognitive to the behavioral level across institutions. A trainors' training program arising from the pilot training of this endeavor can be the next step if an assessment of the pilot training yields favorable results or positive feedback towards better environmental behavior.

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The PNU Educational Policy Research, and Development Office

The EPRDO is a specialized research center in the University focused on policy research and studies on teacher education. It is established to provide research-based policy recommendation to policy makers. It also serves as the clearing house for all data relevant to teacher education in the Philippines and beyond.

Vision

The Philippine Normal University through the EPRDO aims to be an innovation hub of teacher education research and educational policy studies.

Mission

To strengthen the culture of excellence in teacher education research and educational policy studies.

Objectives

The EPRDO shall manage the University's research production, enhance human resource capabilities, and share expertise to other Teacher Education Institutions (TEIs) in the area of teacher education research

Strategies

1. Establish and maintain a web-based university research portal that facilitates automated research management systems and which also serves as the database of teacher education policies and teacher education research in the country and Southeast Asia.
2. Share research expertise and competence in teacher education research with other TEIs throughout the country;
3. Develop and disseminate the University research agenda
4. Design and implement the research capability program for faculty and staff;
5. Manage University's research production particularly the conduct of educational policy studies in education and teacher education; and
6. Serve as the implementing arm for research incentives and research ethics review.

Values

SYNERGY (Working collaboratively as a team)

EFFICIENCY (Delivering research services efficiently)

EXCELLENCE (Achieving high quality research outputs)

PRODUCTIVITY (increasing research production of the University)

The **Policy Brief Series** aims to provide observations, analyses, and insights by PNU faculty and researchers on various educational policy issues. The views contained in the policy briefs are those of the authors and do not necessarily represent the official views of the University.

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