

Bridging Classrooms and Communities: A Case Study of Integrating Problem-Based and Community-Based Service Learning in Bangladeshi Elementary Science Education

Sabiha Sultana*

Abstract: In this study, I explore how integrating problem-based learning with community-based service learning fosters 21st-century skills—specifically communication, collaboration, and critical thinking—among Bangladeshi elementary students. Drawing on a multi-stakeholder, participatory learning design process involving teachers, students, parents, teacher trainers, and education policymakers, I investigate the impact of a community engagement learning model developed and implemented across rural and urban public schools in Bangladesh. Using case study methodology, I analyzed data from classroom observations, student-led community projects, interviews, focus groups, and over 288 self-assessment survey responses. Findings demonstrate that embedding experiential, socially relevant learning activities into science curriculum enhanced students' ability to articulate ideas, work collaboratively, and critically engage with socioscientific issues. The study provides empirical evidence of how localized service learning grounded in students' lived experiences can challenge epistemic injustice and support educational transformation in Global South contexts. Implications are discussed for curricular innovation, teacher development, and educational policy in resource-constrained environments.

Keywords: problem-based learning, service learning, Bangladeshi elementary education, community-based learning

Introduction

Over the past decade, Bangladesh has made remarkable strides in expanding access to primary education, achieving near-universal enrollment with approximately 98% of children of primary school age attending school. This progress reflects a significant step toward educational equity, with gender parity in access now largely realized. However, improved accessibility has not yet translated into equitable educational quality for all learners—a persistent and pressing challenge (USAID, n.d.). In response, the Government of Bangladesh has adopted a multi-dimensional strategy to transform its educational ecosystem (a2i.gov.bd), aiming not only to broaden access but also to enhance the substance and relevance of learning. Central to this effort is the cultivation of 21st-century competencies—critical thinking, communication, collaboration, and creativity (Partnership for 21st Century Learning, 2019)—that empower students to critically engage with their social contexts and become agents of change. To achieve this, education must extend beyond the confines of traditional classrooms and engage students in real-world, experiential learning through after-school programs, service learning, summer camps, and community-based education. These extended learning opportunities are

* **Corresponding Author:** Illinois Wesleyan University, School of Educational Studies ssultana@iwu.edu

essential for helping students meaningfully connect formal instruction with the social realities they navigate daily.

Several studies around the world have investigated community based expansive learning (Schuetze et al., 2015) or extended education (Kerr, 2022) or service learning or experiential education in relation to teaching citizenship education, environmental education, increasing scientific understanding, and improving language and literacy skills (Cincera et al., 2020; Hyland, 1994; Rauschert & Byram, 2017). Scholars also studied problem-posing critical pedagogy in the context of Bangladesh to investigate ways to empower students (Talukder & Samuel, 2017). Students' extended learning is interrelated to their experiences with the physical, social, political, cultural, and economic environments within their community that includes their peers, other students from different grades at schools, teachers, parents, neighbours, and other community members. It is also important to recognize that every student operates within a structured social environment that is governed by its unique regulations and available resources. Echoing Giddens' structuration theory (Giddens, 1984) and Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1979), Boeren (2019) states that "...the individual and society are interdependent, and thus both perspectives should ideally be included in research. This allows for the consideration of critical perspectives that go beyond the level of the individual" (pp. 281–282). As learning of an individual does not occur in isolation, therefore, learning design research in the 21st century should account for the community engagement and assets that students encounter in their everyday social life.

Elementary education in Bangladesh is offered without cost at public schools, welcoming all children from the age of six. The disciplines include arts and crafts, music, physical education, islam/hindu/christian/buddha (based on a student's own religious belief) religion and moral education, science, Bangladesh and global studies, mathematics, English, and Bangla at elementary level. We need to rethink the strategies for explicit utilization of students' experiential learning experiences and support from their immediate social networks during their educational journey in Bangladesh because these contextualized service learning experiences are the foundation of formal and informal learning as well as 21st century skills. So, how can the elementary education system leverage students' social experiences, like out-of-school service learning experiences in communities, in their formal schooling that would benefit their knowledge, skills, and abilities development of different content areas (i.e., life science, agriculture, environment, etc.)? How can students', their families', and communities' voices be explicitly tied with students' experiential learning designs that prioritize their localized needs and also support their 21st century skills? How can students' epistemic perspectives that they bring to the classroom from their lived surroundings be valued while also preparing them to navigate in this competitive industrial world?

In this study, I employed a case study design (Stake, 1995) to explore how integrating community-based service learning with Problem-Based Learning (PBL) can foster 21st century skills—specifically, critical thinking, collaboration, and communication—among Bangladeshi elementary students. Integrating PBL with a community-based service learning approach here includes making formal in-school content learning connections with the localized out-of-classroom civic responsibility through discussion with teachers, peers, students from other grade levels in schools, family members, neighbors, and other relevant community members. Data sources included descriptive field notes from four classroom observations, student presentations at conferences and fairs, images of community-based projects, student-created artifacts, 96 pre- and 192 post-self-assessment survey responses from students, in-