

A Call to Action for Leveraging Cultural Capital and Funds of Knowledge in Academic Integration of South Asian International Students in STEM Programs at Canadian Universities

Shuvo Chowdhury Rahul, University of Calgary, shuvo.rahul@ucalgary.ca

Abstract: The Internationalization of post-secondary STEM education enriches global knowledge exchange yet causes cultural, linguistic, and psychological challenges for South Asian international students. This discussion underscores the importance of implementing academic initiatives that recognize diverse cultural backgrounds and funds of knowledge. Incorporating asset-based strategies fosters inclusive participation, a sense of belonging, and better academic integration. Collaborative and systemic approaches can transform Canadian STEM programs into more equitable, innovative and engaging learning communities.

Introduction

Internationalizing higher education facilitates cross-cultural knowledge exchange and promotes social justice, global citizenship, and sustainable development (Handa, 2018). It presents cultural, linguistic, and pedagogical dynamics that enrich academic discourse and innovation in STEM programs (De Wit, 2019). STEM disciplines are critical in addressing global challenges like climate change, technological innovation, and sustainable energy (DeCoito, 2024). Statistics Canada (2023) revealed that international student enrollment in post-secondary STEM programs tripled between 2010 and 2020. Research highlights that transitioning to a new academic and cultural environment can lead to psychological issues, such as anxiety, depression, or homesickness (Chang et al., 2022; Russell et al., 2010).

Problem of Practice

South Asian (e.g., Bangladeshi, Indian, Pakistani) students who constitute a significant portion of the international student demographic face unique challenges such as culture shock, feelings of exclusion, or imposter syndrome when navigating the transition between new culture, pedagogy, and academic environment (Bai & Wang, 2024; Tavares, 2024). These challenges are further exacerbated by cultural and linguistic barriers, limiting their engagement in classroom discussions, collaborative projects, or extracurricular activities (Batty & Reilly, 2023). Financial constraints, language proficiency gaps, and social isolation are additional problems for them, unlike their peers in developed countries who adapt to strong educational infrastructures and support systems (Ali et al., 2021; Banjong & Olson, 2016). However, current interventions adopt a one-size-fits-all approach, focusing on general resources such as language support and orientation programs (Lorenzetti et al., 2023), address some immediate needs but fail to recognize intersectional challenges based on cultural backgrounds (Martirosyan et al., 2019). For instance, students with strong technical skills may struggle with oral presentations and group projects due to cultural norms surrounding assertiveness (Johnson, 1997), language barriers can further hinder their ability to grasp technical instructions (Bukhari et al., 2023; Lefringhausen et al., 2019). With practical institutional efforts to bridge cultural gaps, these students will be able to actively participate in a learning environment that brings academic success and a sense of belonging (Bai & Wang, 2024; Rienties et al., 2012).

A Call to Action

Internationalizing The 'Cultural Capital' (Bourdieu, 1986) recognizes that individuals and groups have different cultural resources, including knowledge, skills, and critical competencies, influencing their social mobility and access to resources. Similarly, 'Funds of Knowledge' (Moll et al., 1992) emphasizes understanding how cultural values influence an educational environment to address sustaining inequalities (Gonzalez et al., 2006). These theoretical constructs provide a foundation for designing culturally relevant and sustaining interventions (Ladson-Billings, 2014; Paris, 2012) while meaningfully supporting the diverse population to navigate the transition. Institutions should recognize the complexities of academic and socio-emotional transitions and commit to systemic, long-term, effective improvements. By adopting asset-based approaches and leveraging the rich cultural capital and funds of knowledge of South Asian students, universities can dismantle barriers, amplify diverse voices, and ensure sustainable academic success for all. Policymakers, educators, and administrators must collaborate to design

inclusive strategies, transforming Canadian STEM programs into a global learning hub that reflects the values of social justice, equity, and innovation.

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