


# Chapter 3

## The Cultural Calculus: Renegotiating Mathematical Identity Crossing Mainland China–Hong Kong Educational Boundaries

**Yijing Chen**


 <https://orcid.org/0009-0004-9519-1256>

*Universiti Brunei Darussalam, Brunei*

**Nor Azura Abdullah**

*Universiti Brunei Darussalam, Brunei*

**Masitah Shahrill**

 <https://orcid.org/0000-0002-9395-0798>

*Universiti Brunei Darussalam, Brunei*

### ABSTRACT

*Cross-border education has become an essential aspect of higher education as student mobility across regions continues to grow. Thus, students are expected to navigate not only academic challenges but also complex sociocultural differences shaped by diverse educational systems. Using an autoethnographic approach, the author reflects on her lived experiences as a mathematics education student from Mainland China studying in Hong Kong. It specifically examines the reconstruction of mathematical identity through three interrelated stages of inception, engagement, and integration, framed by Bloom's Taxonomy. This narrative highlights how contrasting traditions in pedagogy, language, and culture shaped her beliefs*

DOI: 10.4018/979-8-3373-4212-2.ch003

Copyright © 2026, IGI Global Scientific Publishing. Copying or distributing in print or electronic forms without written permission of IGI Global Scientific Publishing is prohibited. Use of this chapter to train generative artificial intelligence (AI) technologies is expressly prohibited. The publisher reserves all rights to license its use for generative AI training and machine learning model development.

*and practices in mathematics. The study provides insights into how international students' transitions can inform educators and policymakers seeking to foster more inclusive cross-border education environments.*

## **INTRODUCTION**

In Higher Education (HE), globalization gave rise to cross-border education (CBE) as an essential component in the rapid growth of international student mobility (Knight, 2011; Van der Wende, 2010). CBE, as an expression of internationalization, can provide a matrix of basic skills to cope with the future world for the knowledge economy (Knight, 2011; Van der Wende, 2010). However, research indicated that there were various challenges in the effectiveness of CBE programs, which slowed their integration and implementation successfully (Lamers-Reeuwijk et al., 2019; Yue et al., 2025). When transitioning into the CBE environment, a growing number of international students worldwide reported encountering much more difficult tasks outside academic adaptation. Specifically, they are under additional pressures like social isolation, financial strain, pedagogical challenges, inadequate institutional support, and cultural adjustment (Akanwa, 2015; Bethel et al., 2020; Duan, 2023; Khanal & Gaulee, 2019), particularly in foreign language as the medium of instruction contexts.

In mainland China, promoting internationalization is a mandated priority across all universities and colleges (Petruk, 2018), closely tied to the strategic expansion of CBE initiatives designed to enhance the nation's global competitiveness and innovation capacity. Over the past two decades, Hong Kong's higher education institutions (HEIs) have been renowned for their high-quality education and serve as stepping-stones for 'non-local students', particularly in postgraduate programs (Fu & Zhu, 2015; Li & Bray, 2007). This reputation attracts many students in mainland China seeking superior educational opportunities.

Despite the geographical proximity, mainland China and Hong Kong exhibit marked divergence due to the unique political and sociocultural relationships (Yu & Zhang, 2016). In turn, two educational systems were catalysed within different philosophies and pedagogical approaches. Mainland China's system, deeply rooted in Confucian traditions, tends to prioritize rote learning, standardized assessments, and examination-driven curricula (Fu & Zhu, 2015). This highly structured environment contrasts sharply with Hong Kong's system, which reflects a strong British colonial influence, emphasizing student-centred learning, critical inquiry, and English-medium instruction (Li & Bray, 2007). These differences suggest potential motivations for mainland Chinese students choosing Hong Kong as their academic destination, a subject frequently explored in previous research. However, the multidimensional

34 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/the-cultural-calculus/400497](http://www.igi-global.com/chapter/the-cultural-calculus/400497)

## Related Content

---

### Materials Development: A Constituent Element of Teacher Training for EMI in Higher Education

Javier Ávila-López (2020). *Teacher Training for English-Medium Instruction in Higher Education* (pp. 298-319).

[www.irma-international.org/chapter/materials-development/250033](http://www.irma-international.org/chapter/materials-development/250033)

### The Effect of Psychological Safety on the Performance of Students in Graduate-Level Online Courses

George Hanshaw and Jacob Hanshaw (2023). *International Journal of Innovative Teaching and Learning in Higher Education* (pp. 1-21).

[www.irma-international.org/article/the-effect-of-psychological-safety-on-the-performance-of-students-in-graduate-level-online-courses/333864](http://www.irma-international.org/article/the-effect-of-psychological-safety-on-the-performance-of-students-in-graduate-level-online-courses/333864)

### Work-Integrated Learning Assessment Rubric Development: Global Framework

M. Dileep Kumar, Manisha Semwal and Normala S. Govindarajo (2024). *Design and Implementation of Higher Education Learners' Learning Outcomes (HELLO)* (pp. 52-77).

[www.irma-international.org/chapter/work-integrated-learning-assessment-rubric-development/335865](http://www.irma-international.org/chapter/work-integrated-learning-assessment-rubric-development/335865)

### A Cost-Effective Model to Address Student Readiness Through the Lens of a College Physics Course

Rebecca Forrest, Donna Pattison, Jacqueline Hawkins, Monica Martens, Laura Taylor Jacobs and Shuo Chen (2021). *International Journal of Innovative Teaching and Learning in Higher Education* (pp. 1-17).

[www.irma-international.org/article/a-cost-effective-model-to-address-student-readiness-through-the-lens-of-a-college-physics-course/289945](http://www.irma-international.org/article/a-cost-effective-model-to-address-student-readiness-through-the-lens-of-a-college-physics-course/289945)

### Teaching Accompaniment: A Learning Journey Together

Steve Reifenberg (2023). *International Journal of Innovative Teaching and Learning in Higher Education* (pp. 1-10).

[www.irma-international.org/article/teaching-accompaniment/335497](http://www.irma-international.org/article/teaching-accompaniment/335497)