

274 Transferring a Mathematical Problem-Solving Experience across contextual borders: A case study of an international educational transfer collaboration between Egypt and the UK

Mariam Makramalla¹, Shannon Chance^{2,3}, Emanuela Tilley³

¹NewGiza University, Giza, Egypt. ²TU Dublin, Dublin, Ireland. ³University College London, London, United Kingdom

Research Domains

International contexts and perspectives (ICP)

Abstract

This paper is situated in an ongoing curricular transfer collaboration project between NewGiza University (NGU-Egypt) and University College London (UCL-United Kingdom). Using the Integrated Learning Curriculum framework (Mitchell et al., 2019) as an underpinning theoretical framework, consultants from UCL have designed a challenge-based curriculum that aims to equip undergraduate engineers with problem solving skills enabling them to confidently approach the job market in the 21st century. Over two years, researchers from both institutions have worked closely together to explore best administrative, academic and policy practices for transferring curricula across borders. Using reflective journal logs as the data collection point, this paper adopts pattern matching to identify enablers and barriers to the curricular transfer. Findings indicate interesting perceptions of the learning ethos across both cultural identities. The study discusses implications to these findings along with opportunities for future research and policy engagements.

Full paper

Introduction

In this study we present our research-informed understanding of international contexts of curricular transfer in Higher Education. We identify contextual barriers and challenges embedded in the exchange policy and enacted in the instructional practice. We briefly explain the research design, articulated to address the question: "How can on-site research practice inform the administrative policy of curricular transfer of educational practice across international cultural borders?" We conclude with a discussion of the implications of findings for research, policy and practice.

International Contexts of Practice: The Global Classroom Dilemma

Given the growing precarity around the educational world, which has partially been caused by the pandemic, the growing numbers of displaced learners and other forms of distress, the post-COVID world is experiencing a very rapid move towards the new trend of the 'global classroom' (Makramalla, 2022; Wiek et.al., 2013; Mason, 2002). This means that across borders of culture, time zones and societies, learners can engage together and individually with any instructional platform that is made available to them. We argue that this expansion into the 'global classroom' presents itself as a challenge to local practitioners, as an underexplored area for researchers and as an opportunity for policy makers.

International Contexts of Practice:

Across contextual borders, local practitioners are now adjusting themselves to the growing trend of a diverse and heterogeneous virtual and in-person learner body, made up of local, displaced and foreign learners. Each of these groups of learners carries with them a cultural baggage of expectations from the teaching and learning experience (Makramalla & Stylianides, 2019).

International Contexts of Exchange and Legislation

Across contextual borders, local practitioners are preparing the aforementioned heterogeneous learner body to be part of a growing globalised community of practitioners, where cultural heritage and societal trends are mostly disregarded (Makramalla, 2022). As a result, practitioners in the Higher Education sector target the standardisation of their practices and of their learning experiences, often disregarding the uniqueness of each contextual culture (Makramalla & Tilley, 2022). While this standardisation policy does have its advantages, it often overlooks the importance of considering locally contextual voices and footprints of culture. This paper reports on an attempt to foster this culturally sensitive contextual exchange.

The research question that guides this paper is hence: “How can on-site research practice inform the administrative policy of curricular transfer of educational practice across international cultural borders?”

Research Design

This study presents analysis of a longitudinal collection of reflective journal logs written across two years by a member of NGU. This facilitated comparative analysis between (1) the reflective entries related to the administrative policy of curricular transfer and (2) the reflective entries related to the contextual culturally sensitive practice of the cross-border exchanged curriculum. This longitudinal analysis adopted pattern matching (Yin, 2009) as a main methodology. Identified patterns have been cross coded and further examined to uncover how they inform international policies of academic exchange in the Higher Education sector.

Because of the word limitations, we will focus on presenting one main pattern in the findings. Throughout the reflective journal entries, it was apparent that the nature of knowledge was perceived differently across the two exchange parties. We will report further on this multi-layer investigation as part of the findings of the larger study from which this work is derived. Regarding the nature of knowledge, we mean the perceived static versus dynamic nature of mathematical content knowledge (Schoenfeld, 1992).

Implications on complexities of cross-border practice

In their work on the nature of knowledge, Schulmann et al. (1987) make a distinction between content and pedagogical knowledge. While the first refers to the perceived nature of the content area itself, the second refers to the perceived approach to teaching it. For the case of mathematics, our analysis identified interesting cultural variations.

While one context considered mathematics to be a dynamic body of knowledge that drives the problem-solving investigative practice, the second context considered it to be a static body of practice that needed to be mastered in order to equip students to use it for other technical courses. As a result, the pedagogical practice of mathematics was very procedurally oriented on one side and was envisioned as very challenged based on the other. This finding acts as one lens to better understand the resulting complexities of practice, research and policy.

Discussion

The presented findings constitute a small part of our ongoing effort to explore how curricula have been enacted in the cross-cultural transfer. Our target is to identify ideal ways to transfer a learning experience across borders, while respecting the local culture.

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