Transforming mathematics problems in Indonesian primary schools by embedding Islamic and Indonesian contexts


Abstract

The most recent version of the Indonesian national curriculum requires teachers to embed cultural and religious values into all subject areas, including mathematics. This requirement poses a great challenge for mathematics teachers and their advisors in a multicultural nation such as Indonesia. As a mathematics educator in an Indonesian university, one of my key roles is to advise teachers of primary school level mathematics how to meet this challenge. This thesis constitutes an investigation into the question of which values I can and should draw on given my complex religious and cultural identity as a Muslim and an Indonesian.

To address this research question, I designed an integrative autoethnography within a multiparadigmatic research design space. This approach enabled me to explore how my religious and cultural identity governs my professional praxis as a mathematics educator while excavating the history of mathematics curriculum and Islamic schools in Indonesia. During this inquiry, I conducted interviews with experienced teachers and other key education stakeholders in Indonesia. While writing stories of my participants’ experiences, the narrative method of writing as inquiry enabled me to make visible the process of my own critical self-reflection as a mathematics educator and to express my subjectivity through poems and imagery.

As a result of this inquiry I consider myself to be a mathematics educator who holds religious and cultural identities and am committed to taking action to continue this self-discovery in my professional praxis, as well as to empower others. As an Indonesian, I have come to realise that my cultural identity has been formed by acculturating religious and local cultures. As a Muslim, I no longer believe in the dichotomy of Islamic and mathematical knowledge; rather, I recognise their concepts as having a harmonious relationship. As a mathematics educator, I will enable my fellow mathematics teachers to reflect on their religious practices and understandings. I conclude that Islamic, Indonesian and International (3Is) mathematics can sit side-by-side as contexts for mathematics problems, without one being dominant over the others.

Keywords: Islamic and Indonesian contexts in mathematics, Indonesian mathematics curriculum, integrative autoethnography, multiparadigmatic research design.
How is assessment conducted in primary schools to identify pupils’ current knowledge and mathematical abilities? - What factors hinder pupils’ opportunity to learn in the context of primary schools? Call for contributions. The Problems and Challenges of Catering for the Range of Mathematics Abilities in Australian Primary Classrooms. (118.00 KB). Campos Tânia (UNIBAN), Gitirana Verônica (UFPE), Magina Sandra (PUC/SP) & Galvão Spinillo Alina (UFPE) - Brazil. Opyene Eluk Patrick, Islamic University in Uganda (Mbale, Uganda). Mathematics Content Required for Teaching in Primary Schools. (48.00 KB). Ozmantar Fatih & Bingolbali Erhan, University of Gaziantep (Turkey); Akkoç Hatice, University of Marmara (Turkey).