

Thematic issue on ‘Values in East Asian Mathematics Education—The Third Wave’

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In some ways, conducting (mathematics) education research is like the situation of having a few persons trying to describe an elephant in the dark. Depending on the approach taken by each person, a different part of the huge animal is felt. Inferences about what the animal looks like were thus made based on these incomplete ‘views’ of the animal.

Likewise, in looking for more effective ways of understanding and facilitating the learning and teaching of mathematics in school, we adopt a variety of approaches. The cognitive and affective approaches have been two dominant ones. A third, volitional approach may also be utilised. This approach focuses on an individual’s motivation and will to act in particular ways. Its relation to cognition and affect can be seen in Andrew Tallon’s (1997) book title ‘Affection, cognition, volition as triune consciousness’, and is reflected in Benjamin Bloom’s well-known three taxonomies of educational objectives, namely cognitive, affective and psychomotor. This third approach to educational research thus emphasises teachers’ and learners’ motivations and dispositions to teach and learn, respectively. The construct of the socioculturally-based values in mathematics education, first proposed by Alan Bishop (1988), reflects this approach.

This ZDM issue has the theme, ‘Values in East Asian Mathematics Education—The Third Wave’. The wave metaphor not only encapsulates the energy for change that

is generated by the values approach, but it also implies the ongoing relevance of the previous two waves (i.e. cognition and affect) since waves overlap. Collectively, the articles in this issue present the reader with a complementary approach to understanding the dominance of East Asian education systems in the various international comparative studies of student achievement in mathematics. The first article by Bishop traces the growth of the values construct in mathematics education. It sets the scene for this issue through telling a personal story that began some 20 years ago with the introduction of the values construct to the mathematics education research and professional communities. In the next article, Wong, Wong and Wong describe how the values embedded in the major Chinese schools of thought (namely, Confucianism, Daoism and Buddhism) have impacted on school mathematics pedagogy in the Chinese culture. We will also be looking at the relevant Japanese values, as Baba et al. trace the development of these values in a historical context.

Seah and Wong’s article then provides an overview of the Third Wave project, an international consortium of research teams which undertake studies relating to the harnessing of relevant values in mathematics pedagogy. This is followed by two country reports of a study undertaken by the Third Wave project. Law, Wong and Lee identify and discuss the values espoused by students and their teachers when mathematics was learnt particularly effectively (from the students’ perspectives) in Hong Kong classrooms. Lim and Kor, on the other hand, report on the values underlying effective mathematics lessons as espoused and enacted by teachers who had been professionally recognised as excellent in Malaysia.

Seah and Peng’s article which follows these country reports is aimed at better situating the values that would have been reported in the East Asian mathematics classrooms. It

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discusses the corresponding values that were documented in two non-Asian cultures.

Two commentaries follow these articles. Hannula (re-)visits and theorises the values construct based on his reading of the articles, proposing values as being separate from the cognitive and emotional dimensions. This article also interprets the East Asian researchers' perspectives with a set of European lenses, as intended by us with an aim of bringing out culturally-perceived differences. Cai and Garber have organised their comments of the articles in two levels, that is, the values that are inherent in mathematics education, and the ways in which these are optimally taught in mathematics lessons. The writers emphasise how the latter, which they call valued teaching, can be interpreted differently by students, teachers and researchers. Cai and Garber also pointed out the methodological issues and future directions of research in the area.

Back to the elephant analogy, these two commentaries highlight how we also have culturally different ways of

interpreting what we feel of the object before us. And yes, we do more than describe, for we also facilitate our elephant to dance and even fly! May the articles in this issue stimulate more relevant discussions, research and innovative practice. There has never been a better time for us all to appreciate one another's strengths, to understand our differences (e.g. the related terminologies and vocabulary), and to work together for the well-being, development and growth of the elephant before us!

References

- Bishop, A. J. (1988). *Mathematical enculturation: a cultural perspective on mathematics education*. Dordrecht: Kluwer Academic Publishers.
- Tallon, A. (1997). *Head and heart: affection, cognition, volition as triune consciousness*. Bronx: Fordham Univ Press.