

Abstract

There are several purposes of this study that are to discuss the mathematical literacy performance (MLP) of students in Macao, explore the relationship between the school factors and MLP, and examine the relationship between family factors and MLP.

To fulfill these research purposes, hierarchical linear modeling (HLMs) was employed to investigate the effects of the school factors and the family factors on students' mathematics achievement. The data consisted of 1250 15-year old students from 39 schools in Macao, from the 2003 Programme for International Student Assessment (PISA).

The findings of this study were summarized as the follows: (1) Macao students performed substantially better than the 41 participating countries or regions, not only in overall mathematical literacy, but also in space and shape, uncertainty, quantity and change and relationships; (2) the MLP of schools was found significant differences among schools; (3) schools with high MEAN SES had high math achievement; (4) there were seven school factors as school type, number of assessment per year, teacher participation, school autonomy, resource autonomy, student morale and teacher morale are found significantly related to student achievement; (5) Socio-Economic and Cultural Status (ESCS) significantly predicted the MLP of

Macao students; (6) computer facilities, educational resource, and cultural possessions were significantly associated with the MLP among the family characteristics; (7) MEAN ESCS and SES were not associated with MLP.

According to the findings, there were several recommendations made for the parents, school administrators and the local government toward educational policy-making.