

Emergent Modelling: From Traditional Indonesian Games to a Standard Unit of Measurement

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In this paper, we describe the way in which traditional Indonesian games can support the learning of linear measurement. Previous research has revealed that young children tend to perform measurement as an instrumental procedure. This tendency may be due to the way in which linear measurement has been taught as an isolated concept, which is separate from children's daily experiences. Consequently, a set of experience-based activities was designed to help grade 2 students to connect their learning of linear measurement to their daily experiences. Design research was chosen as a means of designing and analysing the hypothetical learning trajectory. Theoretical development is driven by a cyclical process of designing instructional activities, teaching experiments and retrospective analysis. The main design heuristic that was used is the principle of emergent modelling. The analysis of the teaching experiments showed that conflicts of fairness while playing the game could be used to help students to acquire the concept of a standard unit of measurement.

Key words: Linear measurement; Traditional Indonesian games; Design research; Emergent modelling