



Patterns of Young Children's Number Sense Development as Assessed by How Many Hidden Game

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ABSTRACT

Using games as a context for assessing children's mathematical abilities is not unusual, but this study investigated the potential of games designed specifically for the purpose of assessment. Children in prior-to-school settings in Sabah, Malaysian Borneo, were exposed to a range of such games, including the how many hidden game, which focuses on number sense, which is the subject of this paper. Children's responses while playing the game were recorded, and we report the range of successful responses to the game, as well as the age of the children involved.

Keywords: How many hidden; assessment; mathematical abilities; number sense; game

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INTRODUCTION

The data for this paper are drawn from a larger study of the usefulness of a games-based approach for assessing children's abilities in mathematics. The focus of this paper is on the how many hidden game, which has a focus on number sense. This game originated in Australia and known as Gumnut

game, and used readily available nuts from eucalyptus trees as playing pieces. However, researchers in Malaysian Borneo modify this game and name it as How many hidden. Any small objects can be used, and in Sabah, plastic counters were used as the playing pieces. The development of children's prior-to-school number sense is important, as Aunola *et al.*, (2004), Claessens *et al.*, (2009), Romano *et al.*, (2010), have shown that number sense proficiency is beneficial to a child's school mathematics learning. Davydov (1976) too, in his work on quantities, and their relationships, while eschewing number, points out that the basic relationships between quantities is a foundation for problem solving in the later years of children's mathematics learning.

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