

With board games, it's how children count that counts

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Teachers and parents like to use board games to teach skills that range from fair play to counting. When it comes to improving early number skills, a new report by Boston College and Carnegie Mellon University researchers finds that how children count is what really counts.

Games like Chutes & Ladders require players to count out the spaces along which they move their tokens at each turn. Earlier studies have pointed to the benefits to young children of playing games that require counting.

The new study suggests the simple act of playing a [number](#) game may not yield the benefits earlier studies have detailed. What matters is how children count while they play, Boston College Assistant Professor of Education Elida Laski and Carnegie Mellon Professor of Psychology Robert S. Siegler report in the journal *Developmental Psychology*.

"We found that it's the way that children count – whether the counting procedure forces them to attend to the numbers in the spaces of a board game – that yields real benefits in the use of numbers," said Laski, a developmental psychologist. "What's most important is whether you count within a larger series of numbers, or simply start from one each time you move a piece."

The researchers tested two counting methods in a study of 40 children who played a 100-space board game designed by the researchers to mimic products like Chutes & Ladders. In the first method, referred to

as "count-from-1", children started counting from the number one each time they moved a piece. In the other method, students would "count on" from the actual numerical place of their latest landing spot in the game. So a child who had moved her piece 15 spaces would "count-on" from 16 during her next move.

The process of counting on allows children to develop their ability to encode the relationship between numbers and spaces, Laski and her colleagues report in the journal article "Learning From Number Board Games: You Learn What You Encode." That, in turn, improved their abilities to estimate the size of numbers on number lines, identify numbers and to count-on.

Playing the same game, the standard "count-from-1" method led to considerably less learning, the researchers found. In a second experiment, the researchers found that students who practiced encoding numbers 1 through 100 via methods beyond a [board game](#) showed no appreciable gain in number line estimation.

The new results suggest that simply playing board games may not yield improvements in counting skills. Instead, parents and teachers need to direct children's attention to the numbers on the game boards to realize those benefits.

"Board games help children understand the magnitude of numbers by improving their abilities to estimate, to count and to identify numbers," said Laski. "But the benefits depend on how children count during the game. By counting-on, parents and their children can see some real benefits from board games. It's a simple way to enhance any game they have at home and still have fun playing it."

Provided by Boston College

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