INTRODUCTION

In Sweden 2010 national tests for the purpose to promote learning were introduced for grade 3. Although it is unclear how the components of Baddeley’s (2000) working memory (WM) model contribute to different operations in mathematics, especially in children, WM is considered to influence scholastic development significantly.

AIM

Examine the contributions of three different components of the WM model of Baddeley (2000) to a range of mathematical skills in children aged 8-9 years taking the Swedish national tests, and to discuss the role of national assessment in primary education.

METHODS

PARTICIPANTS

40 Swedish pupils (20 female, 20 male) in grade 3 participated.

INSTRUMENTS

National tests in mathematics: Written arithmetic, Mental arithmetic, Time, Area and volume, Fraction, and Number understanding. WM tests: Listening span, Digit span, and Block span.

RESULTS

WM explained 41% of the variance for the total mathematical score, \( F(3,36) = 8.44, p < .001 \), with significant contribution driven of Block span and Listening span. Written arithmetic was the only test that was not explained significantly by WM, \( F(3,36) = 2.30, p > .05 \) (Table 1).

CONCLUSIONS

The most significant correlation for Listening span was with Time, \( \gamma = .0501, p < .01 \), whilst Digit span correlated most strongly with Number understanding, \( \gamma = .415, p < .01 \). Block span was found to be correlated with Area and volume, Number understanding, with \( \beta = .473 \) and \( p < .01 \) (Table 2).

REFERENCES


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