

**Gender differences in predicting students handwriting performance and achievement in first grade based on kindergarten assessments of performance and participation.**

Naomi Weintraub<sup>1</sup>, Kineret Sharafi<sup>1</sup>, Yael Tamir-Lang<sup>1</sup>, Rivka Illovitz<sup>2</sup>, Efrat Zahavi<sup>3</sup>  
<sup>1</sup>Hebrew University and Hadassah, Jerusalem, Israel, <sup>2</sup>Achiya Institute, Elad, Israel, <sup>3</sup>Messilot, Ashdod, Israel

Introduction: Occupational therapists in Israel are often called upon to evaluate children's school readiness, in general, and handwriting readiness in particular. Reliable identification of children at risk for developmental delays depends essentially on how effectively the assessment 'tools' can predict the children's performance. Moreover, various studies have shown that girls' school readiness skills are often more developed than those of boys. It is therefore questionable whether the same school readiness assessments tools should be used for boys and girls alike.

Objectives: (a) To examine gender differences of kindergarten children in terms of skill performance, occupational performance and participation level, as well as handwriting performance and achievement of these same children in first grade, and (b) to examine whether the same measures are equally effective in predicting handwriting performance and achievement of girls and boys alike in first grade, based on their performance in kindergarten.

Methods: The study included 78 children (30 boys, 48 girls). In kindergarten, the children underwent a battery of tests assessing finger- and hand-functioning, visual-motor integration, and motor coordination. In addition, occupational performance levels, and participation in activities were investigated through use of a teacher questionnaire. In first grade, the same children were assessed for handwriting performance. In addition, teachers completed questionnaires regarding the children's achievements.

Results: In kindergarten, the girls' participation levels, motor coordination, and in-hand manipulation were significantly higher than that of the boys. This was also true for first grade children in terms of handwriting legibility. Furthermore, for girls, the strongest predictors of handwriting and school performance were the levels of occupational performance and participation in kindergarten. In contrast, for boys, the strongest predictors were finger and hand functioning.

Conclusions: These findings indicate the importance of assessing school readiness and handwriting skills in terms of skill performance, occupational performance as well as participation levels of the child in the kindergarten setting.

Contribution: It appears that in evaluating boys' and girls' school readiness, it is important that occupational therapists select the most appropriate assessment tool taking in to account the individual's gender rather than using a uniform evaluation battery.