

An Examination of the Long Writing Pauses in Children with Developmental Coordination Disorder using Eye and Pen Movements

Melissa Prunty

Brunel University London, London, UK

Background: Difficulties with handwriting are reported as one of the main reasons for the referral of children with Developmental Coordination Disorder (DCD) to healthcare professionals. Previous research has found that children with DCD produce less text than their typically developing (TD) peers as a result of long pauses during writing. However the nature of these long pauses (>10 seconds) are poorly understood. It is not known for example whether the long pauses occur due to cognitive processes such as planning and revision, or physical reasons such as fatigue. The aim of this exploratory study was to characterise the long pauses observed in the handwriting of English children with and without DCD using eye and pen movements.

Methods: Twenty 8-15 year-old children participated in the study, 10 with a diagnosis of DCD and 10 aged-matched control peers. Participants completed the 10 min free-writing task from the Detailed Assessment of Speed of Handwriting (DASH) on a LCD digitising writing tablet. Eye gaze behaviour was captured during the writing task using eye-tracking technology. The location of eye movements during the long writing pauses were coded to describe cognitive processes during long pauses such as reviewing the text, planning content or distraction from the task.

Results: A description of the handwriting and eye movement measures will be reported. The analysis adds to the literature by being the first to describe eye movements during writing in children with DCD. Discussion will centre on both the theoretical and practical implications of these findings.