TEACHING MARK-MAKING AND LETTER FORMATION

Overview

This approach is closely linked to mark-making and letter formation in the Physical Development theme of the Early Years Evidence Store; we recommend you consider them together.

In this section of the Early Years Evidence Store we have focused on evidence related to transcription skills,[1] early handwriting, and wider literacy outcomes.[2] Gross motor skills,[3] fine motor skills,[4] and visual motor skills[5] are important building blocks for later writing proficiency, but these are explored in the evidence summaries in the Physical Development theme.

We found eight systematic reviews and 16 primary studies relevant to mark-making and letter formation.[6] Of these, six reviews and two primary studies had a focus on transcription skills and wider literacy outcomes. The evidence we found for 'mark-making' was located within fine motor skills interventions and early writing interventions; we could not find evidence on mark-making separate to these outcomes.

Main findings

The evidence shows that teaching mark-making and letter formation can have a positive impact on children's literacy outcomes (Hall, 2023; Ray, 2022). However, the evidence base is small so these findings should be treated with caution. Hall (2023) conceptualises approaches to early writing on a continuum: at one end there may be less direct educator input and educators might provide a stimulating environment and resources; approaches in the centre may include educator modelling; at the other end, educators might focus on direct instruction and feedback. Much of the evidence base focuses on in-depth educator input, concluding that social interaction, feedback, and direct instruction when teaching early writing are important determinants of positive literacy outcomes (Hall, 2023). For very young children, educators might first focus on resources and environment and then increase educator input towards teaching early handwriting.

Improvements were less pronounced in programmes that solely focused on targeting transcription skills rather than multi-component programmes also targeting literacy outcomes such as sentence construction and spelling. Thus, the evidence suggests that educators should consider embedding teaching letter formation within wider literacy instruction (Hall, 2023). Activities in effective interventions included sounding out words, using traffic light prompts to support direction and accuracy during letter formation, and the use of digital technology applications where children form letters and are given immediate extrinsic feedback (Hall, 2023).

A second review (Ray, 2022) looked more closely at the literacy outcomes that are improved by teaching mark-making and letter formation. Strong evidence was found for the impact of teaching letter fluency on writing composition and letter name and sound knowledge. There was also moderate evidence to suggest that improving letter writing fluency also improved spelling, word reading, and phonological skills.[7] In effective interventions, activities included modelling though explicit instruction, multi-sensory activities to promote letter writing such as writing with a finger in the air or tracing letters in sand, and cues such as auditory prompts or arrows to show directionality of letter shapes. Across the different intervention types, demonstration and feedback were deemed beneficial for the development of children's letter formation skills (Ray, 2022). It is worth noting that the evidence base is relatively small as much of the wider evidence on early writing looks at the correlation between early handwriting and literacy rather than seeking to test how different programmes might affect literacy outcomes (Ray, 2022; Hall, 2023).

[1] Transcription skills refer to children's ability use a writing tool to form legible letters and words with fluency.

[2] Literacy outcomes vary but include sentence composition, phonological awareness, orthographic skills (skills that relate to word recognition), and spelling.

[3] Skills developed using whole body.

[4] Fine motor skills involve small muscles working with the brain and nervous system to control movements in areas such as the hands, fingers, lips, tongue, and eyes.

[5] Visual motor skills refers to the ability to translate a visual image or plan into a motor action.

[6] In a systematic review, researchers summarise all of the research on a particular topic that meets predefined eligibility criteria in order to answer a specific research question. This gives an objective overview of the evidence for a particular topic or research question. The methods used must be reproducible and transparent.

[7] The ability to hear and manipulate sounds in spoken language.

Four reviews had a narrower focus, looking at interventions focused on improving handwriting and transcription skills such as legibility, fluency, and speed (Engel, 2018; Fancher, 2018; Lopez-Escribano, 2022; Santangelo, 2016). Activities in the interventions covered by these reviews included varying pencil size and grips, matching letters, tracing letters, the use of music to prompt writing, and digital technology applications (Santangelo, 2016). The evidence suggests that interventions focused on a single aspect of letter formation and handwriting skills, such as repeatedly tracing letters, were ineffective (Engel, 2018; Fancher, 2018; Lopez-Escribano, 2022; Santangelo, 2016). More positively, highly structured and explicit multi-component handwriting programmes were seen to bolster children's progress. In particular, multi-component interventions with a performance feedback element—such as educator or peer feedback—and encouragement through goal setting led to gains in children's handwriting fluency (Lopez-Escribano, 2022; Engel, 2018). Overall, interventions focused on a single skill may be less effective than multi-component programmes that involve educator guidance, feedback, and performance goal-setting.

We found two primary studies focused on literacy outcomes that were not included in the systematic reviews. Beech et al. (1994) looked at whether tracing letters improved children's knowledge of grapheme-phoneme correspondences (this refers to children's ability to match sounds to words). Two groups experienced some phonemic awareness training as well as a tracing activity, but one group traced letters while the other group traced letter-like shapes. Tracing letters rather than shapes did not improve knowledge of grapheme-phoneme correspondences. Lavoie (2020) used a multi-component alphabet training programme to improve children's handwriting and wider literacy skills. This included a multi-sensory approach to understanding letters: children were encouraged to touch and feel different letter shapes and then provided with regular educator feedback to improve their letter formation. Positive effects on legibility and spelling were reported; interestingly, educator demonstration and feedback were again key elements of this intervention.

Overall, teaching mark-making and letter formation can positively impact literacy skills, in particular writing composition, letter knowledge, and sound knowledge. Educator instruction and feedback are important components of successful interventions. Practising one skill in isolation, for example just tracing letters, is less effective than teaching mark-making and letter formation alongside other transcription and literacy skills. The evidence base for literacy outcomes is relatively small so findings should be approached with caution. Several reviews recognised that digital technology interventions designed to support handwriting reported positive effects but that the evidence base remains small. While this might be a promising area for future research it is worth noting that digital composition skills and handwritten composition skills likely differ.

Behind the evidence

Most of the evidence for this approach comes from North America. The sample sizes for some of the studies included in the reviews were relatively small and therefore findings should be considered with caution. While there are children aged two included in several studies, much of the evidence falls at the older age-range of the store at children aged four to six.

References:

Systematic reviews and meta-analyses

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