

SOURCE

McMurray, S., Drysdale, J. and Jordan, G. (2009) 'Motor processing difficulties: guidance for teachers in mainstream classrooms', *Support for Learning*, 24(3), pp. 119–125. doi: 10.1111/j.1467-9604.2009.01411.x

All quotations are taken from this paper. Other authors named in brackets are cited within it.

EARLY YEARS GUIDANCE LEAFLET

Teaching correct letter formation from the very start

Why 4–5 year old children must be taught letter formation on entry to school

Why early intervention matters

'It is essential that Early Years teachers are aware of the importance of appropriate early intervention ensuring correct letter formation once a child is 'ready' to write and that if 'readiness' is elusive then there may be underlying difficulties requiring closer examination. **The importance of effective early intervention is critical.**' (p. 120)

20%

'of pupils in secondary school were not writing well enough for the needs of the secondary curriculum'

(Alston, 1993)

10%

'of pupils have mild co-ordination difficulties resulting in difficulties forming letters correctly'

(Laszlo et al., 1988; Alston and Taylor, 1993)

Under-achievement

'handwriting may play a more significant role in underachievement than is realised'

(Silverman, 2004, in Montgomery, 2007)

Clear guidance for Early Years practitioners

'It is important that guidance given to Early Years practitioners is clear:

'As a child's co-ordination develops and as letter shapes appear in emergent writing, specific guidance on correct letter formation should be given. Teachers should ensure that children hold pencils and writing tools effectively and attention should be drawn to posture' (CCEA, 2008, p. 12).'

'For children experiencing no co-ordination difficulties, **effective early intervention and teaching will suffice in ensuring letters are formed correctly from the outset.**' (p. 120)

'For children who do not have difficulties in motor processing, motor sequences, such as correct letter formation, are learned easily, **unless there has been earlier practice forming letters incorrectly.**' (p. 120)

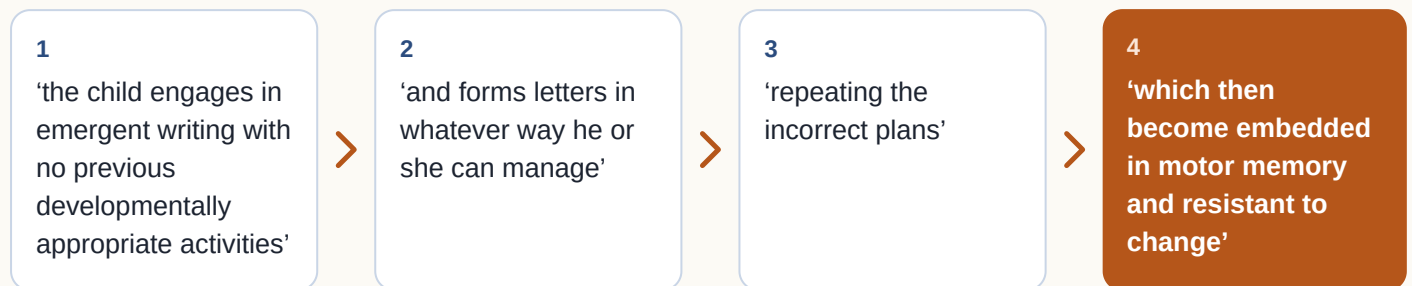
How entrenched incorrect letter formation can become

The power and permanence of motor memory

'It is important to understand the power and permanence of motor memory once learning becomes established, and the difficulty that is presented in attempting to unlearn incorrect motor plans. Every movement that we make, that is repeated over and over again to reproduce the same end result, for example the formation of a letter, is dependent on a correctly learned motor plan or sequence. Writing, in terms of letters written on a page, is dependent on deeply embedded, subconscious motor memory; we write with a level of automaticity that does not require conscious thought.' (p. 119)

'According to Cohen, Kiss and Le Voi (1993), automatic processes occur without awareness, are highly efficient, **difficult to modify** and involuntary and have no capacity limitations.' (p. 119)

How an incorrect formation becomes fixed



(p. 120)

Why correcting it later so often fails

'Many teachers will identify with the difficulties in attempting to change incorrectly formed letters. Children can adhere to changes when their primary focus is forming a letter in a particular way but when another task is the primary focus, for example thinking of ideas and writing independently, then **the over-learned motor sequence swings into action and handwriting reverts to what has been erroneously learned and firmly established.**' (p. 119)

'It is clear then that because over-learned complex tasks can be performed without engaging conscious processing, **once they are established they are extremely difficult to modify.**' (p. 119)

Think about driving a car

'Consider driving a car. Think about each movement required from entering the car to driving off and convey the sequence verbally to another person. You may find that in order to get the sequence right you will have to retrace the movements by actually doing each movement in turn. This is because, for experienced drivers, conscious thought is not required to enact the motor plan; it has been well learned and is now firmly set in motor memory and therefore can be executed with ease.' (p. 119)

Getting it right from the start

'Early Years practitioners need to be clear in their understanding of the impact of over-learned incorrect motor plans. **It is therefore essential that 'specific guidance on correct letter formation' is given before repeated attempts at writing letters in a particular way during emergent writing activities.'** (p. 120)

Guided practice from the outset

'Montgomery (2007) describes how the voluntary cortex of the brain is responsible for learning motor skills, putting together all the parts. With reference to handwriting and letter formation she contends that because the cognitive system is involved in the learning process **the child must have guided practice from the outset.**' (p. 120)

DO

'Large movements should be encouraged, for example in the air, in sand, on a board and eventually on paper. All these movements should be supported by painting and drawing to strengthen the muscles.'

AVOID

'Montgomery asserts that children should not be shown the model and then left to copy or trace over letters as habits can develop that are later difficult to change.'

Readiness

'If a child within the normal ability range comes to school and has appropriate experiences to develop motor processing skills then they should progress within the normal time frame.' (p. 120)

'Specific activities are required to enable normal development; however, current pedagogy does not always ensure that children can access such activities simply because teachers may be unaware that the need exists.' (p. 120)

The cost of leaving it too late

'Older children who have not had adequate early intervention will continue to experience problems with letter orientation and formation, continuing to form many letters incorrectly even in Key Stage 2.' (p. 122)

In the paper's case study, Ben, aged eight, 'had 'slipped through the net' as his Early Years teachers believed he would overcome his difficulties with greater maturity.' (p. 122)

'The importance of early intervention cannot be overemphasised to avoid the negative impact of failure on a child's progress. Intervention at this late stage, as seen in the case of Ben, is time intensive and could be avoided if Early Years practitioners were alert to difficulties **before incorrect learning becomes reinforced and the spiral of failure begins.**' (p. 125)