

What 267 Children's Writing Reveals About Spelling and Phonics

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Researchers analysed independent writing from 267 children (aged 8–9) across 143 Northern Ireland primary schools — all identified with the most severe literacy difficulties in their year group, and all taught spelling using a phoneme-to-grapheme (synthetic phonics) approach only. The question: what kind of knowledge were these children actually drawing on when they spelled?

What the spelling errors showed

- **Sound-based spelling dominated.** Most children spelled words the way they said them, choosing letters that did represent the right sound — but often selecting the wrong letters from several possible alternatives (e.g. "wok" for walk, "youst" for used). (p. 12)
- **Very little "what it looks like" knowledge.** Across the two largest groups of children (224 of 267), fewer than 14% of correctly spelled words showed real orthographic knowledge — most correct spellings were just high-frequency words. (pp. 12–13)
- **A severity gradient.** 17 children (6.4%) produced writing that was essentially unreadable, despite four years of phonics teaching. (p. 11, p. 13)
- **Pronunciation and hearing mattered too.** Some errors reflected local speech patterns or difficulty distinguishing sounds like "w" and "wh," not just an orthographic gap. (p. 11)

Phonologically plausible spellings should not be considered progress — they can be a warning sign that a child cannot pick up orthographic knowledge just from reading.

Two kinds of knowledge, not one

The paper draws a key distinction teachers can use directly in the classroom:

- **Alphabetic mapping:** linking single phonemes to graphemes (the basis of SSP).
- **Orthographic mapping:** recognising larger spelling patterns — onsets, rimes, syllables, whole words.

(p. 3)

WHY THIS CATCHES SO MANY CHILDREN OUT

English has around **44 phonemes but only 26 letters**. Many sounds can be spelled several different ways (the "o" sound alone has seven spellings: go, know, though, note, toe, boat, sew). Phoneme knowledge alone cannot tell a child which spelling is correct. (p. 3)

Is This Still Happening And What Helps

Six specialist teachers, 84 children, 2024/25

The authors asked specialist literacy teachers whether the 2019 patterns still held for children they were currently supporting. The answers were striking and consistent:

- **83 of 84 children** decode phoneme by phoneme when reading, with almost none recognising letter patterns as units.
- **80 of 84** found it very hard to move beyond sounding-out to automatic sight-word recognition — the strategy they'd been taught had become their only strategy.
- **All 84 children** chose the wrong letters for sounds with multiple possible spellings, despite knowing the correct sound.
- **44 of 63 children** observed spelling aloud did not know their letter names — only the sounds — making it harder to talk about letters like "c" that make different sounds.

(pp. 16–17)

Teaching phoneme-to-grapheme correspondence did not, on its own, enable orthographic knowledge to develop — even after four years of consistent phonics teaching.

What worked: an integrated approach

McMurray's earlier controlled study taught phonic, orthographic and morphemic knowledge together from age 5, rather than relying on phonics alone:

- Average post-intervention spelling score of **113** — almost a full standard deviation above the mean.
- A very strong effect size of **1.19**, with all children in the programme improving.
- Comparison schools using phonics alone still showed phonologically plausible spelling errors at the end of the study.

(p. 4, p. 17)

Practical takeaways for the classroom

- Teach phoneme-to-grapheme correspondence first — but move quickly to explicitly teach onset and rime patterns, not just individual sounds. (p. 17)
- Ages 5–8 appear to be the optimum window for building orthographic knowledge — the earlier difficulties are spotted, the less entrenched they become. (p. 8)
- Teach letter names before letter sounds; letter names and written letters are one to one. Some letter sounds can be heard in the letter name. (p. 4)
- Treat phonologically plausible spelling errors as a signal to check for orthographic difficulties — not as a sign of normal progress. (p. 17)
- Teach spelling through an integrated approach that develops all three sources of linguistic knowledge — phonemic, orthographic and morphemic — together, rather than teaching phonics in isolation. Robust research on Stages 1–3 of the CSP Spelling and Language Programme found that all children using the programme increased their standardised spelling score from Year 2 to Year 4 (5–8 years), reaching an average standardised score of 113 by the end of the study — almost one standard deviation above the mean (effect size 1.19, $p < 0.0001$). (p. 4, p. 17)