

# Reading Skills, Outcomes, and Interventions: A Review of the Evidence

## Introduction and background

The average reading ability of children and young people in England exceeds that of their international peers. According to the latest data from PISA (Programme for International Student Assessment), 15-year-old pupils in England had a mean reading score of 505 – above the OECD average of 487. The Progress in International Reading Literacy Study (PIRLS), which most recently assesses the reading ability of children aged 9-10 in 2016, indicated that England had an average score of 559, above the international median score of 539. However, major inequalities remain. According to the government's data, over one in 5 children left primary school in 2022 without meeting the expected standard in reading, and only 38 per cent of pupils with Special Education Needs (SEN) met the expected standard. The gap in attainment between disadvantaged children and their more affluent peers, at Key Stage 2 is at its widest since 2012. COVID-19 brought further challenges related to learning loss; previous EPI research has suggested that primary school children were 0.8 months and secondary school pupils were 2.4 months behind in reading compared to a cohort in a typical pre-pandemic year. This review from EPI examines the evidence on the effect of reading on children and young people's long term educational, occupational, and health outcomes and explores the existing evidence on interventions.

## Key points

### The links between reading ability and outcomes

- The authors carried out a literature review to explore links between reading ability and outcomes. They focussed on literature in English which has been published in the last 10 years and where evidence comes from high-income countries.
- Childhood reading ability is a significant predictor of educational attainment, particularly secondary school completion, and educational qualifications.
- Reading frequency at age 10 has been associated with later vocabulary at age 16 and even up to age 42. There is also clear evidence of links between attitudes and motivations towards reading and reading achievement.
- Evidence suggests that reading skills may also play a role in social and emotional development. A Finnish study has linked poor reading skills to increased bullying (both perpetration and victimhood). A review of the literature by BOP Consulting suggested that reading for enjoyment and self-development has been correlated with a greater sense of emotional intelligence, empathy, and understanding of other cultures.
- Reading difficulties may pose a risk factor for the mental health of adolescents. Meta-analytic evidence suggests there are significant differences between typical and poor readers on measures of internalising problems, or 'inwardly focused' emotional problems, ( $d=.41$ ); this effect was larger for measures of anxiety ( $d=.41$ ) than depression ( $d=.23$ ) Furthermore, higher book ownership, which is correlated with literacy engagement, is associated with higher mental wellbeing scores.
- The authors found limited but consistent evidence of a relationship between literacy skills (defined as reading and writing) and general health outcomes. For example, in a nationally representative sample of British adolescents, reading behaviour at age 11 was associated with a range of health-related behaviour at age 14, including an increased level of fruit consumption, decreased odds of cigarette and alcohol use, but also lower levels of physical activity. In adults, a literature review by the National Literacy Trust found that literacy rates were associated with life expectancy.
- There is some evidence to suggest that early reading ability is a small, but significant, predictor of later income, occupational status, and socioeconomic status (SES). Cohort studies have found childhood reading ability is associated with higher earnings in adulthood.

### Effectiveness of approaches to teaching reading

- There are 3 main approaches to teaching reading – phonics, whole language, and balanced instruction.
- The phonics approach encourages children to learn the sounds (phonemes) associated with each letter or group of letters (graphemes). Systematic phonics involves teaching the letter-sound correspondence in an ordered, structured sequence. In synthetic phonics, children are taught how to segment words into sounds and later combine and blend (synthesise) sounds together. Importantly, in synthetic phonics children do not begin by establishing sight vocabulary and are encouraged to pronounce words for themselves. This contrasts with analytic phonics in which whole words are presented, pronounced by the teacher first and then the child's attention is drawn to the sound(s) given by each letter or group of letters. In England, the government places an emphasis on a systematic synthetic phonics instruction.



- The whole language approach encourages children to learn words on sight recognition and to be immersed in literacy through 'real' books read with or by adults. Unlike phonics instruction which has explicit instruction on letter-sound connections, children are thought to deduce the relationship between letters and sounds naturally without formal instruction. Proponents of this approach have also argued that the English language has irregular words in which the phonics approach can lead to inaccurate pronunciation – e.g., 'done' or 'yacht'.
- The balanced instruction approach attempts to carefully balance teaching based on the use of whole texts to understand print while also teaching about the letter-sound link.
- England has a long history of phonics instruction and tests the phonics knowledge of 7-year-olds through a phonics screening check.
- The use of phonics instruction is supported by several meta-analyses and systematic reviews of the international evidence that suggest this approach can be effective for improving early reading skills, especially for children with reading difficulties. However, there is also evidence that its long-term effects may diminish with the passing of time.
- There have been challenges to the dominance of phonics as the main method of teaching reading. Torgerson et al. (2019) note that whilst the evidence supports phonics instructions, this does not justify a 'phonics only' approach.
- Bowers (2020) challenges the view that phonics instruction is more effective than alternative methods, arguing that the control conditions are often poorly defined and will either include a mixture of non-systematic phonics, but still phonics, instruction, or no phonics instruction at all.
- Research into the effectiveness of phonics teaching is constrained by the difficulties of conducting a randomised controlled trial which would require a control group which received no phonics instruction.
- Early on, for typically developing readers, reading comprehension is constrained by variation in decoding skills but as children get older and master their decoding skills, language comprehension becomes more important for reading comprehension skills. However, poor decoding skills may act as a barrier for the development of reading skills and so interventions targeting decoding (e.g., linking letters to sound) may be more appropriate. For children who can read but not understand what they are reading, a focus on supporting language comprehension skills is imperative.
- There is some evidence that parents can support the development of language comprehension skills, such as through shared book reading activities, long before formal instruction in school.
- Although some language interventions have been found to improve language skills, findings from meta-analyses on transfer effects to reading are mixed and few studies have reported follow-up effects on reading comprehension skills. When subject to an RCT design, interventions have not always been successful for long-term reading comprehension outcomes. This may be due to factors such as small sample sizes and attrition at follow up, a limited time frame during which the intervention occurred, inappropriate measures, or implementation measures. It may also suggest that relying on early intervention is not enough and that

resolving reading comprehension difficulties requires on-going intervention.

- A narrow focus on improving a child's reading ability without addressing underlying factors such as disadvantage and the home environment may lead to diminishing effects of any intervention. The government's white paper, *Opportunities for All*, recognised this in outlining plans to expand the Supporting Families programme.

### Supporting different groups of learners

- At secondary level, programmes that use one-to-one or small group tutoring, cooperative learning in small mixed ability groups, whole school approaches with an emphasis on school organisation, and a focus on writing instruction have been associated with positive reading outcomes.
- There is evidence (Dietrichson et al, 2021) that for children with special educational needs, peer-assisted instruction and small group instruction by adults had statistically significant effects on standardised assessments of reading.
- A systematic review and meta-analysis of interventions for children from disadvantaged backgrounds by Dietrichson et al (2017) found that tutoring, feedback, and progress monitoring had the largest effect sizes for children from disadvantaged backgrounds.

### Policy recommendations

- The government and/or local authorities should commission research exploring approaches to reading instruction used in schools in addition to synthetic phonics instruction to help policymakers and educators better understand which approaches to reading instruction are most effective.
- The government and/or local authorities could consider a randomised control trial with a systematic synthetic phonics instruction as the intervention group, and an appropriate active and passive control group, to better understand whether phonics instruction is more effective than other approaches.
- Evaluations of interventions with longer follow-up periods are required to, first, build the evidence base on the long-term effects of interventions, and second, to consider how we can best extend the long-term effects of interventions that target word reading and language comprehension skills.
- Schools should monitor pupils' progress for diminishing effects of decoding or language comprehension interventions.
- More research is required into how we can best support the development of reading skills in vulnerable pupils. Currently, the specific interventions and combinations of interventions that are effective, as well as the components of reading comprehension these interventions should be targeting, remains unclear for this group. The government should fund more efficacy trials that consider the complexities of recruitment and retention of samples of vulnerable children to better understand the barriers to successful intervention.

The full documents can be downloaded from:

<https://epi.org.uk/publications-and-research/reading-skills-outcomes-and-interventions-a-review-of-the-evidence/>