

Teaching assistants are employed in most primary schools in England, but until now, little has been known about what contribution they make to educational outcomes. **Sandra McNally** and **Jenifer Ruiz-Valenzuela** assess the impact of a carefully designed programme of small group tuition for five-year-olds that enables teaching assistants to be used more effectively to improve literacy.

# Improving literacy through teaching assistants



decades of scientific psychological theory and evidence from a series of meta-analyses of 'what works' in literacy.

### Programme and methodology

The programme can be delivered in an information and communications technology (ICT) format (ABRACADABRA or ABRA) or in a more traditional paper format (non-ICT). The core part of the intervention is the training of teaching assistants who are already employed by the school, followed by the implementation of small group teaching (which takes place outside core literacy classes). Specifically, pupils are put together in small groups (between three and five pupils) and receive 15 minutes of teaching four times per week over 20 weeks.

The study is conducted as a 'randomised control trial'. Schools are randomly assigned to receive the 'treatment'. Within treated schools, pupils are randomly assigned into three groups: the ICT programme (ABRA); the non-ICT programme (paper equivalent of ABRA) and a control group. Within treatment schools, teaching assistants are also randomly assigned to receive training in the ICT and non-ICT formats, and therefore to teach pupils in one or other group within their school.

This design of the intervention makes it possible to distinguish between the effects of the underlying pedagogy (which is common to both) and the effects of the mode of intervention (technology or paper-based). It also enables us to observe whether 'spillovers' occur within treated schools by comparing results with different control groups of pupils who are not receiving the treatment in treated schools; and pupils who are not receiving the treatment because they are in control schools.

### Results

We consider the effects of the intervention at the end of the school year in which it was implemented and also one year later. Our results show a large initial effect of the programme.

There is a positive effect from both types of intervention, but it is higher for the non-ICT intervention – of the same magnitude as the literacy gap between pupils eligible to receive free school meals and other pupils. But there is substantial fade-out of the effect one year later –

about one third of the initial effect – although this is in line with other education programmes (such as the American programme for pre-school age children called Project STAR).

There is a significant effect for the non-ICT treatment if one considers administrative measures of performance the following year (as measured in Key Stage 1 teacher assessments). Pupils assigned to the non-ICT treatment are more likely to achieve the 'expected level' in reading by six percentage points (which may be compared to an average of 74% in the control group).

As well as positive effects on reading, the intervention leads to improvements in writing and, to a lesser degree, mathematics. Looking at whether the interventions work more for some types of pupils than others, we find that they have bigger effects for disadvantaged pupils.

When we look at spillover effects, we find that although there are some in the same year of the intervention, none are evident for any outcome one year on. We examine various possible reasons why the spillover only arises in the initial period.

The most plausible explanation is that since the teaching assistants are better trained, they are generally able to do a better job than previously, thus affecting all pupils. Most teaching assistants on the project were drawn from those working with Year 1 pupils. As the pupils did plenty of other literacy activities outside the intervention time, there would have been opportunities for teaching assistants to use any new skills they had learned to help pupils informally at other times.

Feedback from teaching assistants given in the context of the process evaluation was that they perceived it to

Teaching assistants and pupils may find it easier to use books and magnetic letters to advance learning rather than computer screens

There is still a big literacy problem in England. Despite much effort to improve basic skills in England, around 11% of children leave primary school without having achieved the 'expected level' set out in the national curriculum. And according to an international study (Kuczera et al, 2016), about a fifth of adults in England have low levels of literacy. What's more, unlike in most other countries, the problem has not improved among young adults compared to older generations.

Gaps in cognitive ability emerge early in life, and intervening during this period allows children to build later skills more effectively (Cunha et al, 2006). Such arguments are often used to promote greater investment in early years education. But what matters is not only how much is invested but also what it is used for.

There is plenty of evidence to show that the quality of teachers is very important for educational outcomes, and there is a small but growing body of research showing how interventions can boost teachers' skills. Less is known about the effect of teaching assistants on educational outcomes, even though they are used in most primary schools in England.

In recent research, we evaluate how teaching assistants might be used more effectively to improve the literacy outcomes of young children. The intervention is not to replace core literacy instruction, nor to have a substantial effect on the resources available to schools. The point is to assess how teaching assistants are actually used.

The context of the study is a carefully designed programme of small group tuition for five-year-old pupils in schools in England. This has been developed by a team of educational psychologists as a balanced, structured reading programme. The underlying pedagogy is based on four

have improved their skills in small group tuition. Moreover, data from a post-treatment survey (answered by more than 70% of the teaching assistants) show that 74% of them had a better or much better understanding of phonics after the intervention, and 69% of teaching assistants were confident or very confident about delivering small group teaching after the intervention.

### ICT versus non-ICT?

Why was the ICT version less effective than the paper equivalent? Although one might think that technical problems could jeopardise the ICT intervention, in practice any technical problems with implementing the ICT intervention were minor and occasional. Furthermore, the process evaluation finds that both interventions were extremely popular with both teaching assistants and pupils.

The training for interventions was also equally well received. The process evaluation finds that the non-ICT intervention was perceived to have greater adaptability to different ability levels by teaching assistants. This may lie at the heart of the difference in effectiveness because it is consistent with the fact that the non-ICT intervention shows stronger effects throughout the ability distribution.

Thus, it might be that when confronted with different levels of ability and progression, the teaching assistants and pupils find it easier to use books and magnetic letters to advance learning rather than the medium of a computer screen. This is consistent with a large body of research suggesting that computer-aided instruction is not in and of itself any better than what it replaces.

### Cost-effectiveness

This study shows how teaching assistants can be made more effective with good training and a well-designed pedagogy. Furthermore, given that both interventions were delivered by teaching assistants who are not highly paid and whom are already employed by the schools, the per pupil costs of delivering this intervention were modest. We estimate that the per pupil cost (including the training of teaching assistants, support provided during the project, etc.) was about £25.

This low per pupil cost implies that effects do not have to be very large before the intervention becomes cost-effective.

Although there is some evidence of fade-out, the one-year follow-up does suggest that the effects endure (at least beyond the year of the intervention). This is most evident with respect to the effect of the non-ICT intervention on the probability of being at or above the 'expected level' at age 7 in teachers' assessments of reading and writing.

Finally, this is an intervention that disproportionately benefits pupils from lower socio-economic backgrounds. Although this is most evident for short-term outcomes, it is also true for outcomes measured one year later. Thus, using teaching assistants effectively in the context of an intervention like this can help to level the playing field between pupils from different socio-economic groups.

## Using teaching assistants effectively can help to level the playing field between pupils from different socio-economic backgrounds



This article summarises 'Teaching Assistants, Computers and Classroom Management: Evidence from a Randomised Control Trial' by Helen Johnson, Sandra McNally, Heather Rolfe, Jenifer Ruiz-Valenzuela, Robert Savage, Janet Vousden and Clare Wood, CEP Discussion Paper No. 1562 (<http://cep.lse.ac.uk/pubs/download/dp1562.pdf>).

**Sandra McNally** of the University of Surrey is director of the Centre for Vocational Education Research (CVER) and of CEP's education and skills programme.

**Jenifer Ruiz-Valenzuela** is research coordinator of CVER and a research economist in CEP's education and skills programme.

### Further reading

Flavio Cunha, James Heckman, Lance Lochner and Dimitriy Masterov (2006) 'Interpreting the Evidence on Life Cycle Skill Formation', in *Handbook of the Economics of Education, Volume 1* edited by Eric Hanushek and Finis Welch, North Holland.

Malgorzata Kuczera, Simon Field and Hendrickje Catriona Windisch (2016) *Building Skills for All: A Review of England*, OECD.