

Marking at the point of learning – preliminary reporting from a non-randomised controlled stepped wedge design

Janette Pyne
Birchwood C of E Primary School

PURPOSE OF RESEARCH

Teacher workload has historically been contentious and has been discussed as a reason for teachers leaving the profession, as cited in the DfE paper: *Factors affecting teaching retention* (2018). This investigation looked at how reducing the amount of time teachers spend marking 'at distance' from learners positively impacted on teachers without affecting the attainment or progress of pupils. A non-randomised controlled stepped wedge design was used. This type of design and variations of it are being increasingly used in medicine and healthcare (see for examples, Hemming et al, 2015; Hu and Hoover, 2016). This poster reports on data from two thirds of the way through the study, a final report will be able to be made in the Summer Term 2020.

THE RESEARCH DESIGN

A non-randomized controlled stepped wedge design, as shown in figure 1, was used. Each class of pupils served as its own control.

Figure 1 - Stepped wedge design

	Autumn term 2018	Spring term 2019	Summer Term 2019	Autumn Term 2019	Spring term 2020	Summer Term 2020
	Continuous data collection at the end of each of the phases above					
Group 1 25 pupils	Baseline		Intervention			
Group 2 23 pupils	Baseline			Intervention		
Group 3 25 pupils	Baseline				Intervention	

- Control condition - (IV Level 1) Practitioners continued with current marking policy of deep marking.
- Intervention (IV Level 2) - Feedback on learning was given at the point of learning by adults in the class. Flash marking (the use of codes) was used to highlight corrections to be made.

Dependent Variables

- DV 1 - attainment – the school tracking data for reading, writing and maths (reading and maths based on NFER Key Stage 2 assessments).
- DV 2 - teacher time – an audit of the time spent marking in addition to lesson time.

LIMITATIONS

It was not possible to randomise, therefore a degree of bias may have been introduced into the trial. In addition, all of the data is not complete yet and therefore it was not possible to do the types of full statistical analysis that are required for this type of design (see Hemming et al., 2015; Hu and Hoover, 2016). A full analysis will be conducted at the end of the academic year 2020.

METHODS

Participants and sample size

Birchwood C of E Primary school is an average sized primary school, with a high proportion of pupils eligible for Pupil Premium and above national average for pupil's with SEND. Three cohorts from the school took part in the study (a total sample size of 73):

- Group 1 – 24 pupils (9 boys and 15 girls) who were in Year 5 at the start of Autumn term 2018.
- Group 2 – 23 pupils (7 boys and 16 girls) who were in Year 4 at the start of Autumn Term 2018.
- Group 3 – 28 pupils (13 boys and 15 girls) who were in Year 3 at the start of Autumn Term 2018.

Procedures

Control condition - teachers continued to use the existing marking policy. This involved marking, usually without the child present, placing comments/questions for pupils to respond to.

Intervention - teachers gave feedback during the lesson to individual children as needed. The teacher recorded in a class central feedback book any issues that arose for individual children and the teacher or teaching assistant addressed these through intervention before the next learning episode. Any marking that was done at distance from learning used codes instead of written comments.

Training – members of staff met to discuss the approach being used. Subsequent discussions occurred to ensure consistency of approach.

Materials (and apparatus)

- Teacher assessments were made using national standards for writing and standardization materials. NFER Key Stage two assessments were used for attainment data for reading and mathematics.
- Standardised code for feedback to pupils

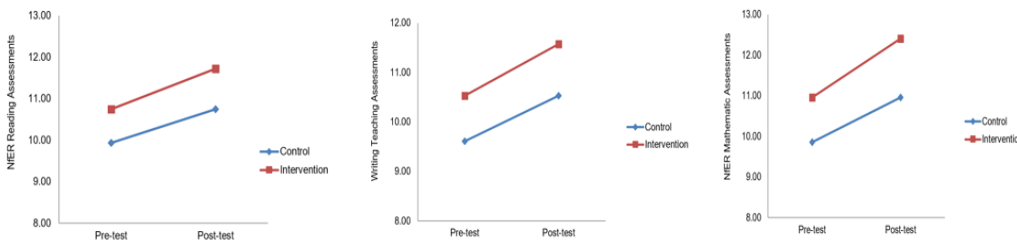
CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Most findings in this study were non-significant because of the small sample size. However, all effect sizes were positive, confirming that there were no negative effects on pupils related to the reduction in teacher marking time. All confidence intervals, bar one, were in the positive range and effect sizes ranged from $d = 0.071$ to 0.804 , suggesting that not only are there no negative effects on progress but there may be positive effects associated with feedback at the point of learning and flash marking. Teacher time data showed that teachers had indeed spent less time on what appeared to have tasks with limited impact on pupils' learning.

RESULTS

Because data for all phases in the stepped wedge design was not yet available yet, a preliminary analysis only was conducted. Gain scores were first calculated from pre- and post-test data from the following phases: Autumn term 2018, Spring 2019, Autumn term 2019 (Figure 2).

Figure 2 - NFER pre-post test assessments; a) reading; b) writing; c) mathematics



Separate Wilcoxon signed-ranks test results (and effect sizes) can be found in Tables 1, 2 and 3 below.

Table 1 - Reading

	Effect size r	CI (95%)	p-value	[d]
All	0.379	0.029 – 0.787	0.033	0.405
Year 6	0.233	0.180 – 0.285	0.178	0.478
Year 5	0.166	0.135 – 0.198	0.068	0.347

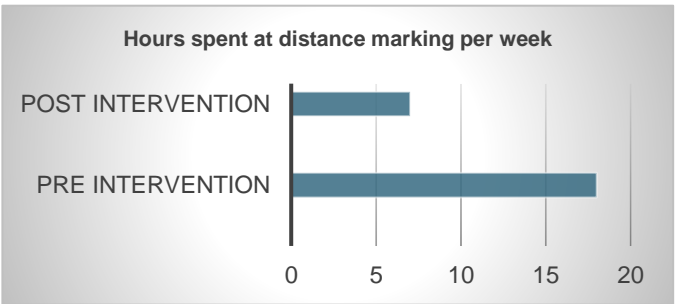
Table 2. Writing

	Effect size r	CI (95%)	p-value	[d]
All	0.110	0.056 – 0.163	0.267	0.221
Year 6	0.146	0.062 – 0.231	0.367	0.293
Year 5	0.036	-0.030 -0.101	0.735	0.071

Table 3. Maths

	Effect size r	CI (95%)	p-value	[d]
All	0.222	0.173 – 0.271	0.006	0.478
Year 6	0.804	0.449 – 1.606	0.009	1.027
Year 5	0.092	0.051 – 0.134	0.361	0.134

Figure 3 - Teacher's Time



This research was carried out with funding and support from the Department for Education and Education Development Trust.

