The effects of reducing the frequency and intensity of data drops on pupil progress, teacher wellbeing and teacher time

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PURPOSE OF RESEARCH

Our Trust has worked with the Department for Education on the reduction of workload for several years and has been concerned around the impact of teachers' time spent on data inputting and tracking. In June 2019, we audited the views of all staff using the impact graph tool from the DfE materials (Department for Education, 2018) which indicated that data tracking was one of the top three drivers for workload in our schools. Our purpose was to reduce the number of hours spent on data, using the principles in the data management report (Department for Education, 2016), for guidance to understand the key changes which could make a difference and focus on the principles to take forward and ultimately to improve teacher wellbeing and morale.

THE RESEARCH DESIGN

Matched pairs designs (non-randomised)

A pre-and post-test non-randomised matched-pairs design was used. To define the independent variable (frequency of inputting data in a technology-based tracking system), two existing groups of participants were case-matched across two conditions:
- Control condition (IV Level 1) - Continuous data inputting and tracking of progress and attainment.
- Intervention (IV Level 2) – Termly data inputting and tracking of progress and attainment.

Figure 1: Research design
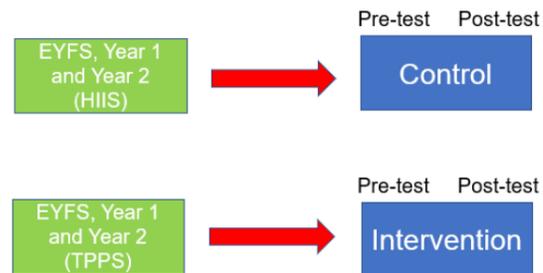
The design allowed for the testing of the following hypotheses:
- H1 – Pupil attainment as measured by attainment will not be affected by reducing workload.
- H2 – Teachers' perceptions of wellbeing will improve as a result of reduced time spent on data tracking.
- H3 – Teachers will spend less time inputting and analysing data.

Dependent variables

The following measures were used:
- DV1 (attainment) – age-related expectations in reading, writing and maths (pre- and post-test).
- DV2 (teacher wellbeing) – questions taken from the International Personality Item Pool (Goldberg et al., 2006) (pre- and post-test) [Working too hard (Simms, et al., 2011); Optimism; Enthusiasm; Love of Learning (Peterson & Seligman, 2004); Self-efficacy (Costa & McCrae, 1992)].
- DV3 (teacher time) – time taken outside of school hours inputting and analysing data (pre- and post-test with mid-test data points).

LIMITATIONS

Although the schools are comparable with each other they do not use the same tracking system. Randomisation was not possible and therefore a degree of researcher bias may have influenced the study.

METHODS

Participants and sample size

340 pupils from two infant school settings near Cambridge in England took part in the study (184 boys and 156 girls). There were 170 in the control group school and 170 in the intervention group school. A total of 12 teachers were involved across 3 subject areas.

The pupils were case-matched across schools and classes controlling for pre-test scores and gender. Case-matching reduced the sample size to 300 (100 in each year group).

Procedures

Control Group:
The teachers in the control group continued to use the data and tracking system that they have used in previous years. This is a system whereby they entered data on a continuous basis against a pre-determined set of statements for each year group. Data was added weekly and then analysed at regular intervals to assess if pupils were on track to meet age-related expectations, leading to a termly judgement about children's attainment against age-related expectations.

Intervention Group:
The teachers in the intervention group were introduced to a purpose built and designed data inputting and tracking system. They were asked to assess the children at the end of the Autumn term and add the attainment grade for each subject against age-related expectations. Teachers were given release time to analyse the data and plan any additional support needed for children.

Materials

- A data tracking system with predetermined sets of assessment statements for each subject area.
- A bespoke data tracking system to input and analyse data on a termly basis.
- Ongoing formative and summative assessment systems (including NFER testing, Maths Hub materials and phonics screening testing).

CONCLUSIONS

One of the aims of this study was to evaluate whether there were any negative effects on pupil progress during the period that the workload reduction took place. The data above shows that across nearly all year groups progress improved during this period.

The study also sought to evaluate teacher time spent on the inputting and analysis of data. The results showed that during the workload reduction measure period there was less time spent on specific tasks relating to this area.

Finally, the study assessed teachers' wellbeing scores to track whether there was any impact when the bespoke data tracking system was used. The results showed that in the intervention group there was an improvement in wellbeing scores compared to the control group.

RESULTS

Gain scores were first calculated from pre- and post-test teacher assessments. Separate Wilcoxon signed-ranks tests were conducted (see tables below).

	Effect size (r)	CI (95%)	p-value	[d]
EYFS (Reading)	0.208	0.158 – 0.257	0.089	0.424
Year 1 (Reading)	0.038	-0.010 – 0.086	0.715	0.076
Year 2 (Reading)	0.554	0.520 – 0.587	0.001	1.328
EYFS (Writing)	0.223	0.181 – 0.266	0.012	0.459
Year 1 (Writing)	0.152	0.103 – 0.202	0.179	0.309
Year 2 (Writing)	0.326	0.283 – 0.368	0.007	0.689
EYFS (Maths)	-0.057	-0.108 - - 0.007	0.602	-0.115
Year 1 (Maths)	0.070	0.016 – 0.123	0.517	0.140
Year 2 (Maths)	0.287	0.237 – 0.336	0.015	0.598

Average Well-Being Scores for Control and Intervention
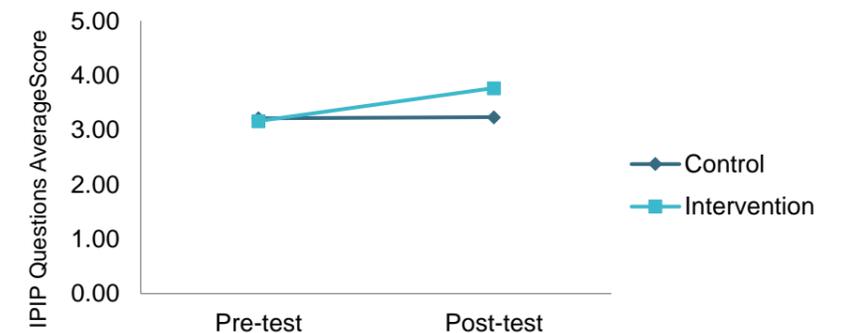
Teachers in the intervention group showed, on average, an improvement in wellbeing scores compared to the control group.

Average time spent inputting and analysing data
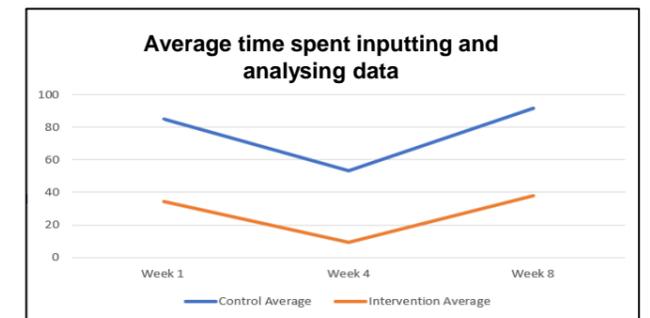
Teachers in the intervention group saved, on average, 50 minutes per week on the specific tasks related to the inputting and analysis of data.

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