Class Big Books – reducing marking in Science in Key Stage 2

Tara Treleven: tara.treleven@swale.at

Kevin Minnott: kevin.minnott@swale.at

PURPOSE OF RESEARCH

We are a two-form entry primary school in outer London. Teacher workload has become an area of focus for a number of schools recently (Workload reduction toolkit, DfE 2018) and was an area that our school was interested in reviewing. Looking at the workload project, there were many different areas that could be identified as helping to reduce teacher workload. Staff questionnaires and short interviews indicated that marking had a negative impact on teacher workload in our school. Recent research on marking (A marked improvement, 2016) suggested that we could make changes in workload without negative impact on pupil progress. We then decided to reduce marking in Science as part of our school development plan.

THE RESEARCH DESIGN

A non-randomised matched pairs design was used, comparing two conditions –

- Control condition: existing practice – each child has their own Science book, which is marked after every lesson.

- Intervention condition – children complete a class book during the Science lesson which will not be marked.

Dependent variables

Three measures were used:

1. Pupil's well-being was compared pre- and post-test.

2. Teacher well-being – perception of workload was compared using questions taken from the International Personality Item Pool (Goldberg et al., 2006) (pre- and post-test).

3. Time use – time spent marking science books pre- and post-test.

The design allowed for the testing of the following hypotheses:

1. Teachers marking of Science books will reduce in the intervention group.

2. Pupils well-being will not be negatively affected by reducing teacher marking.

3. Teacher well-being will be positively affected by reducing teacher marking.

LIMITATIONS

The sample size of children in the study was relatively small and less than anticipated, due to pupil absence. The sample size of teachers was also small. Inability to randomise to conditions may have introduced a degree of bias.

METHODS

Participants and sample size

The participants in the intervention group were two Year 3 classes (2 teachers, 36 children) in James Dixon, trialling the impact of the new class books. The control school was a local school, where the Year 3 classes continued to mark in the traditional way (2 teachers, 36 children).

Procedures

As Science is a practical hands on subject, we reviewed whether the current procedure was the most effective way to record children's learning. Teachers marked individual science books on a weekly basis. In September class big books were introduced, whereby learning from the whole class would be represented in one book that is not marked – no longer needing individual children's books. The control class continued to use the current policy of children working individually in books and the teacher marking the book after each lesson.

Materials (and apparatus)

International Personality Item Pool Scales (Goldberg et al.,2006) Working too hard (Simms, et al., 2011); Optimism; Enthusiasm; Love of Learning (Peterson & Seligman, 2004); Self-efficacy (Costa & McCrae, 1992)

Children's well-being record – children indicated how 'happy' they were on a continuum line which was converted to a score 1-10

Class big books (intervention group)

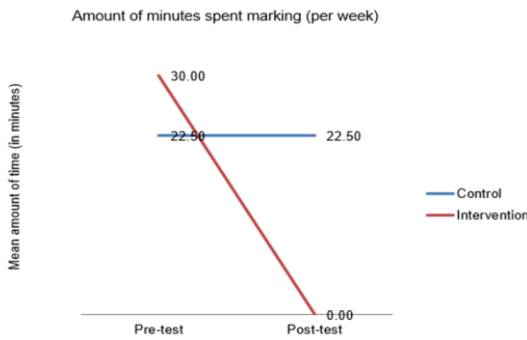Traditional Science books (control group)

CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

For the intervention group, marking time was eliminated with positive impacts on both pupil and teacher well-being. Looking at pupil well-being, a moderately small non-significant positive effect was found when comparing pre- and post-test data. The intervention group scores improved overall for teacher well-being, although the decline in teacher enthusiasm and self-efficacy could be further explored to determine possible reasons for a decline. The teacher well-being questionnaire was given at two very different points in the year. It has been found that teachers levels of fatigue and emotions fluctuate at different times of the school year – this could influence well-being test results (teacher well-being research project (City University, 2017). Through discussion with participants, it was also found that although having zero marking time in the intervention group, time was seen as allocated towards the planning and preparation relating to the big books. However, this time was viewed to be beneficial and led to more engaging lessons. Further research into how PPA time is managed might be beneficial. Parental response to the Science class books has been extremely positive through comments made when books were displayed during recent parent's evenings.
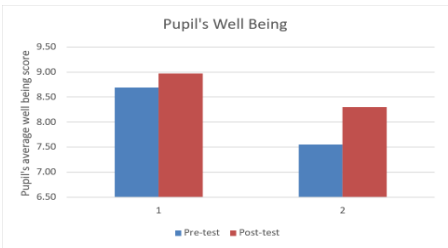
RESULTS

Hypothesis 1 - Teacher marking time will reduce in the intervention group.

The control group spent an average of 22.5 minutes a week pre-test marking science books. This remained the same post-test. However, the intervention group, while spending on average 30 minutes a week pre-test reduced their time marking to zero.
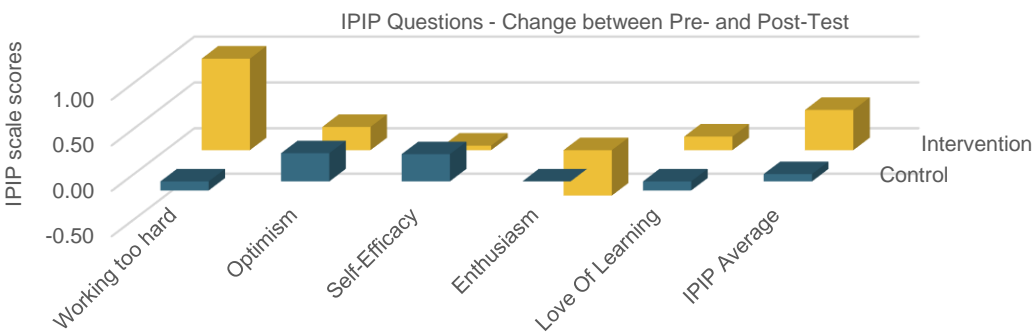

Amount of minutes spent marking (per week)

Hypothesis 2 - A reduction in marking time will have no negative impact on children's well-being.

Gain scores were first calculated from pre- and post-test results. A two-tailed Wilcoxon signed ranks test indicated a non-significant (p = 0.069) positive effect (r = 0.247, CI (95%) = 0.132 - 0.362) compared to the control condition.

Pupil's Well Being

Hypothesis 3 – A reduction in marking time will have no negative impact on teacher well-being.

IPIP Questions - Change between Pre- and Post-Test

The IPIP post-test data showed that overall teacher well-being improved in the intervention group, in particular in relation to working too hard and love of learning. However, teacher enthusiasm and feelings of self-efficacy declined when comparing the results pre- and post-tests.

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

Education Development Trust

REFERENCES DfE (2018) Workload reduction toolkit. https://www.gov.uk/guidance/school-workload-reduction-toolkit. EEF (2016) A marked improvement? A review of the evidence on written marking. London: Education Endowment Foundation. Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. Journal of Research in Personality, 40, 84-96. Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (Neo-PI-R) and NEO Five-Factor Inventory (NEO-FFI): Professional manual.* Odessa, FL: Psychological Assessment Resources.Peterson; C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification.* New York: Oxford University Press/Washington, DC: American Psychological Association. Simms, L. J., Goldberg, L. R., Roberts, J. E., Watson, D., Welte, J., & Rotterman, J. H. (2011). Computerized adaptive assessment of personality disorder: Introducing the CAT-PD project. *Journal of Personality Assessment, 93,* 380-389.