Research Summary

Woolf Fisher Research Centre project: Re-Designing Data Discussions to Improve Teaching and Learning

Overview

Authors: Lai, M.K., Fjørtoft, H., & Li, M.

- Data discussions are about collaboratively analysing and using data to support improvements to learner outcomes.

- Data are broadly defined as information collected and organised to represent some aspects of the school, and this definition includes qualitative and quantitative data [1].

- During 2021 researchers from The University of Auckland and The Norwegian University of Science and Technology conducted a trial with 3 New Zealand schools to evaluate a new approach to data discussions based on the Learning Schools Model [2].

- The goal of the trial was to see whether the approach supported teachers to identify students' strengths and weaknesses, to identify teaching practices to improve, and motivated them to improve their teaching practices.

- The results showed that the approach was successful in each of these areas and that it could be used by all teachers irrespective of their preferences, experience and level of data and subject-area knowledge.

- The outcome is an empirically tested and validated approach that teachers can readily use for data discussions.

About the New Data Discussion Approach

The new approach is different from many other data discussion meetings based on these six key components.

1. Overall Teacher Judgement (OTJ) approach
Recognising that no single source of information can accurately summarise a student's achievement or progress, the approach uses a range of data including interviews and data analysis reports to form a judgment about student learning.

2. Start with Inquiry into Specific Students
The discussion focuses on a small group of students in a teacher's class. The data used is specific, personal, relevant, and based on teachers' identification of student needs. Ideas discussed to support these students are concrete, can be presently applied, and more easily generalised to the whole classroom.

3. Flipped Approach
Assessment results and other data are used to identify students' of concern and their strengths and weaknesses *before* the meeting. This allows analysis and reflection before the meeting enabling the meetings to be more beneficial.

4. Narratives and Numbers
Both narratives and numbers about students' strengths and learning needs are used during and before the meeting. Because of the flipped approach, numbers (e.g., graphs of student achievement) become the backdrop to the discussion ensuring space for other factors to be discussed.

5. Sample of Students' Work
Students' classroom work (e.g. a text students used for reading comprehension, or workings for a maths problem) are discussed to allow deeper diagnosis and identification of additional problems, which supports taking a more holistic view of understanding students learning in context.

6. Strategies for improvement Discussed During the Meeting
Leveraging the knowledge in the room, teachers leave the meeting with user-friendly strategies and concrete practices they can immediately try based on the analysis of students' strengths and weaknesses.

1. Lai, M. K., & Schildkamp, K. (2013). Data-based decision making: An overview. In K. Schildkamp, M. K. Lai, & L. Earl (Eds.), *Data-based decision making around the world: Challenges and opportunities* (pp. 9–21). Springer.
2. Lai, M.K., McNaughton, S., Jesson, R., & Wilson, A. (2020). *Research-practice partnerships for school improvement: The Learning Schools Model.* UK: Emerald Publishing Ltd.

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How the New Data Discussion Approach Works in Practice

	Resources	**Teachers**	**External Expert**
Pre-Meeting Survey Reflections (30 minutes)	• Guided pre-meeting reflection • Existing assessment and non-assessment data* to inform the reflection	• Review data, identify a small number of students of concern, their strengths and needs, and note previously used strategies	• External with subject-area and inquiry expertise recruited from within a school, community of learning, or University • Reviews teacher reflections and data to plan the meeting with others
Data Discussion Meeting (1.5 hours)	• Completed pre-meeting reflection • Data* • Sample of student work, e.g., a text	• Teachers present reflections • Collaborative strengths and needs discussion using the sample of student work resource and other data • Collaborative teaching strategies discussion • If deemed useful, guided teacher reflection sheet completed to support implementing changed practice back in the classroom	

About the Study

Study Aim
The aim of the study was to redesign how data are discussed in schools and to evaluate the impact of the new approach on identifying students' strengths and weaknesses, identifying teaching practices to improve, and motivating teachers to change practices.

Rationale
Research shows that data discussions can be potentially very powerful,. Yet despite being a prolific practice the impact on student learning is variable. More needs to be known about how these discussions motivate teachers and how they support teachers to identify specific teaching practices to improve.

Method
Design-based research methodology using mixed-methods (qualitative and quantitative data) and incorporating a variety of data sources including interviews, analysis of school documents, surveys, meetings, observations, and guided teacher reflections.

School **sample** selection
A maximum variation sampling approach saw one high decile, one low decile, and one state integrated school included in the study. This approach allowed us to collect data from the widest range of perspectives possible.

Design of the data discussion approach
The approach was designed by the researchers in collaboration with school leaders. Inputs to the design included: a literature search, interviews, analysis of school documents and teacher surveys. Reading comprehension was the subject area focus for the study.

Trial of approach
Five trial meetings took place to test the approach with five different groups of teachers (n=12 teachers in total). Prior to the trial meetings, teachers completed a pre-meeting survey and planning meetings took place with school leaders. Each trial was similar but there were two important variations: one where there was incomplete pre-meeting survey information and the second which due to the pandemic was split into two meetings, one online.
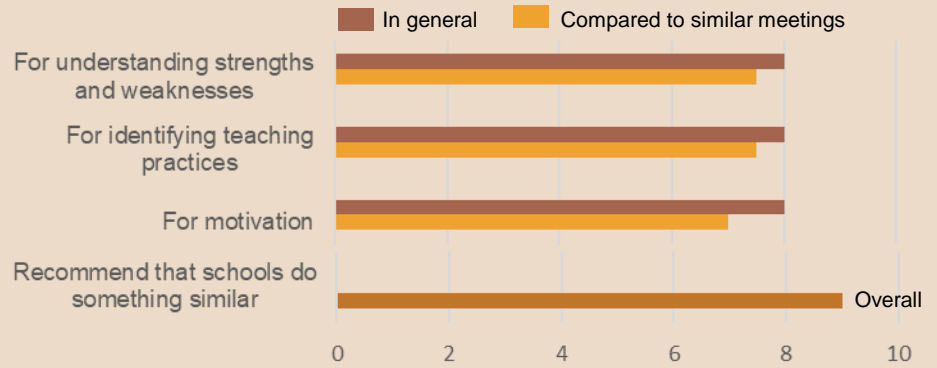
Evaluation of approach
The evaluation approach followed that of Bryk et al.s principles (2015)[3]: What works, for whom, and under what circumstances. Following the trial discussions, teachers completed a post-meeting online survey and post-meeting interviews took place with a sample of teachers to understand what components of the meeting worked best, for whom was this meeting most effective and under what circumstances could similar meetings be run. A Professor of literacy also independently examined the appropriateness of the literacy strategies discussed in the meeting.

3. Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better.* Harvard Education Press.

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The trial was successful with all teachers rating the approach as useful across the study aims on a scale from 0 (Not useful/ helpful at all) to 10 (Very useful)/ helpful. (On average, scores were not neutral or below).
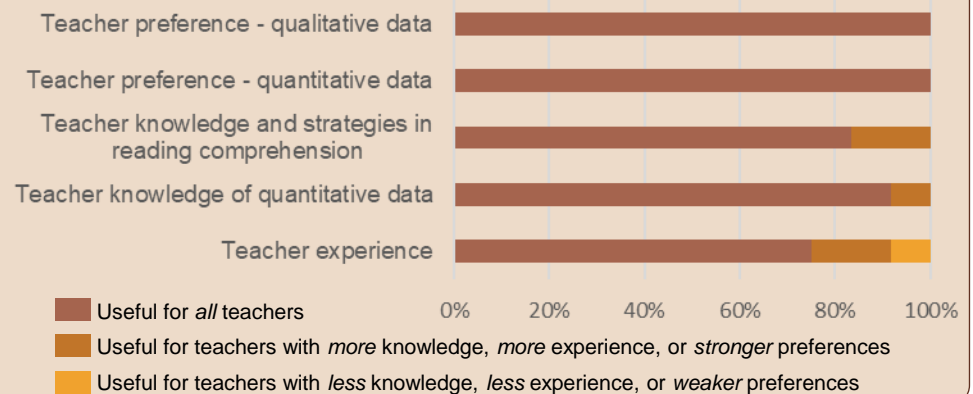
Usefulness of the Approach – Median scores collapsed across five trials

In general   Compared to similar meetings

- For understanding strengths and weaknesses
- For identifying teaching practices
- For motivation
- Recommend that schools do something similar — Overall

(scale 0 to 10)

- The lowest scores on average were from participants in the trial where the pre-meeting survey information was incomplete, but the approach was still rated as useful across all evaluation dimensions.
- The trial with split meetings had slightly lower scores but were not much different from the rest.
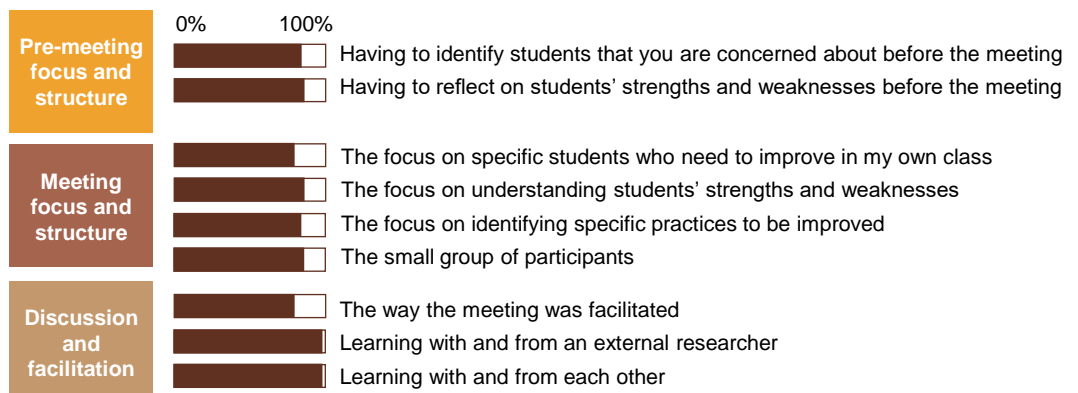
Most teachers rated the approach as being very useful for all teachers, irrespective of experience, knowledge, and data preferences.

Who the Approach is Most Useful For

- Teacher preference - qualitative data
- Teacher preference - quantitative data
- Teacher knowledge and strategies in reading comprehension
- Teacher knowledge of quantitative data
- Teacher experience

(scale 0% to 100%)

- Useful for *all* teachers
- Useful for teachers with *more* knowledge, *more* experience, or *stronger* preferences
- Useful for teachers with *less* knowledge, *less* experience, or *weaker* preferences

When evaluating what parts of the data discussion approach had the most impact on its success, the opportunity to learn from each other during the meeting and to learn from an external were particularly important parts. Other parts of the approach such as the meeting preparation, how the meeting was facilitated and the structure of the meeting, all contributed to creating that learning environment.

Parts of the Data Discussion Approach Rated as Having the Most Impact on its Success

0%   100%

Pre-meeting focus and structure
- Having to identify students that you are concerned about before the meeting
- Having to reflect on students' strengths and weaknesses before the meeting

Meeting focus and structure
- The focus on specific students who need to improve in my own class
- The focus on understanding students' strengths and weaknesses
- The focus on identifying specific practices to be improved
- The small group of participants

Discussion and facilitation
- The way the meeting was facilitated
- Learning with and from an external researcher
- Learning with and from each other

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Using the Approach Successfully

The research identified several themes behind what made the approach a success.

- The meetings were **immediately relevant** through a focus on teachers' own classrooms and a focus on small groups of their students

- The **tightly structured** meeting had clearly communicated aims and focused outcomes

- The small group format enabled **deeper learning from each other and from an expert** where teachers discussed students and practices with each other and the external expert

- **Preparation** before the meeting significantly improved the perceived effectiveness of the meetings

Two smaller themes were: how the meeting was facilitated influenced the success of the approach, and the small group of meeting participants enabled the teachers to have more in-depth conversations

Another consideration for a successful implementation is having the right conditions in place. The following were found to support the findings of the study:

Pre conditions in the School
- Appropriate diagnostic assessments available
- Good data systems
- Sufficient levels of teacher knowledge to analyse and discuss data
- A culture of data discussions

Policy Considerations
The New Zealand context where the study was conducted has some unique policy aspects.
- New Zealand Curriculum "teaching as inquiry" curriculum
- New Zealand policies around overall teacher judgments, assessments and use of quantitative and qualitative data

Future Research

Future research will focus on testing and extending the findings with a larger sample and different types of schools, and testing the impact of the approach on student learning.

Acknowledgements

Contact

Schools and teachers interested in finding out more about the approach can contact Associate Professor Mei Lai at the University of Auckland mei.lai@auckland.ac.nz.

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