

Strategies to encourage thoughtful and critical engagement with research: a guidance document

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Phil Eadie

Ruth Trundley

Kate Eames

Stefanie Burke

Stuart Allen



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Strategies to encourage thoughtful and critical engagement with research

This document is intended to support leaders of maths professional development to consider how they invite participants to engage with research. This will usually involve reading (an article, extract, paper etc.). We recognise that there are useful alternatives, including viewing videos and listening to audio recordings (podcasts etc.). Throughout this guidance we will use the general terms ‘reading’ and ‘readings’ with the intention that these are general terms for all sources including any that are audio/visual.

Introduction

It is our view that readings should be used to stimulate the thinking of participants and to provoke reflection upon their practice. They should **not** be used to persuade or instruct participants that a particular view or course of action is **the** correct one.

It is important that participants can engage with the reading in a thoughtful and critical manner. Participants are sometimes observed to expect and accept the content of a reading as the truth, without challenging it, because it has been provided by the PD lead. This can prevent the participants from connecting the research with their own context and experience and from acknowledging there are other perspectives.

Influenced by the work of Perry (1970), we created a model of increasing criticality which reflects what we have observed about how participants respond during professional development and particularly when engaging with readings.

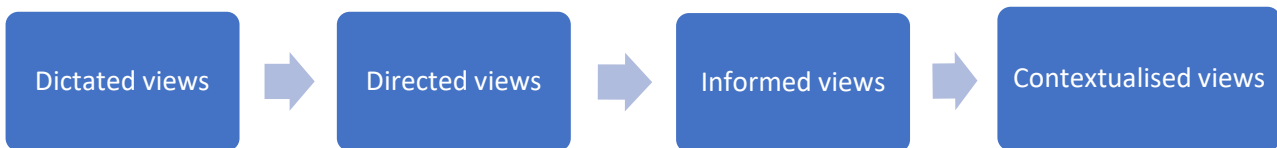


Figure 1. Jurassic Model: teacher engagement with readings *Appendix 1*

Teachers experiencing ‘dictated’ and ‘directed’ use of research either accept a ‘received view’ and focus on behaviours (what do you want me to do?) or reject/ignore change. Long term change requires ‘suspending disbelief’ to try new practices, observing and reflecting on impact on learners, and then considering implications for future practice (Guskey 2020, Swan and Swain 2010). Using research as part of professional development should include allowing participants to make sense of it for themselves, interpret and ask questions in a way that is relevant to their context and challenge both key messages and their own thinking.

Planning the use of readings

Professional learning communities need to be safe places for participants to explore their thinking about readings offered and building these communities takes time, so approaches are likely to vary over time. There are a number of considerations and decisions for PD leads to make:

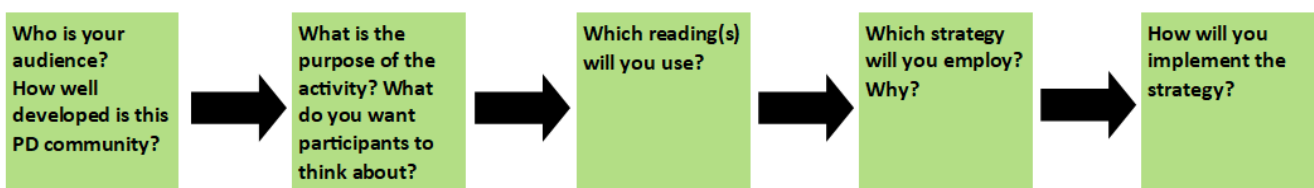


Figure 2: Burke Model

These are developed further in table 1.

Decisions	Considerations
<p>Purpose There are different reasons to choose to bring a reading into a PD session, including:</p> <ul style="list-style-type: none"> • To inform an experience that is about to happen e.g. observe a live lesson, view a video, hear someone speak • To inform a shared experience that has already taken place e.g. a reading after exploring the mathematics in the reading • To challenge participants to try something different • To challenge views and opinions • To provide different views • To promote teacher agency 	<ul style="list-style-type: none"> • Development needs of participants • Aims of the PD programme • Place within the PD programme • Context of participants including their own experience and their current setting • Participants’ attitudes to agency • Participants may perceive that there is an expected, ‘correct’ response. Re-assure them that there isn’t. • Anonymity of response may encourage honest engagement. • Be careful not to shut down opinions that you do not personally hold. It will prevent participants from being honest in future
<p>Source material for readings</p> <ul style="list-style-type: none"> • Formal research papers • Meta-analyses • Journal articles • Book extracts • Blogs • Video • Audio (podcast) • ... 	<ul style="list-style-type: none"> • Time available • Format of the PD (online or face to face) • Accessibility • Providing a link to a reading rather than the reading itself. Ensure it is not behind a paywall. • Copyright • The level of challenge for participants’ existing beliefs • Age of the reading; consider if the content has become dated and less relevant • Credibility of the reading
<p>Timings</p> <ul style="list-style-type: none"> • When the chosen reading will be read/viewed/listened to: <ul style="list-style-type: none"> ○ During the PD session ○ Immediately prior to the PD session (e.g. start time of 09:30 with 09:00 – 09:30 available) ○ Prior to or between PD sessions as part of asynchronous tasks • When participants are given access to readings: in advance or during the session • How much time to allocate in the session 	<ul style="list-style-type: none"> • Providing time within or immediately prior to the session shows valuing of the task as part of the PD and ensures all participants engage with it. • If using multiple sources, keep the duration of each source short. • Sending it out in advance allows people to choose: the format they want to read in (on a device or printed out); and to read in advance knowing there will be time allocated. Be clear that there will be time allocated. • Be patient. Participants will need more time than the PD lead for reading and processing; instant responses shouldn’t be expected. Allocating reading time before a break allows additional time for processing. If using an audio/visual recording, finishing together is guaranteed BUT processing time is still required. • You may want to build in revisiting readings over time.
<p>Strategy:</p> <ul style="list-style-type: none"> • Significant Quote • Three thoughts • Concept Cartoon • Anonymous Source 	<p>See:</p> <ul style="list-style-type: none"> • Table 2 (page 3) • Table 3 (page 6) • Table 4 (page 9) • Table 5 (page 11)

Table 1: Decisions and considerations when choosing to use research as part of professional development

Significant Quote

Description: A reading is provided for participants to read/watch/listen to. Participants are tasked with selecting a quote from the reading that is significant to them and recording this quote (see below). It is definitely **NOT** described as finding the most significant quote.

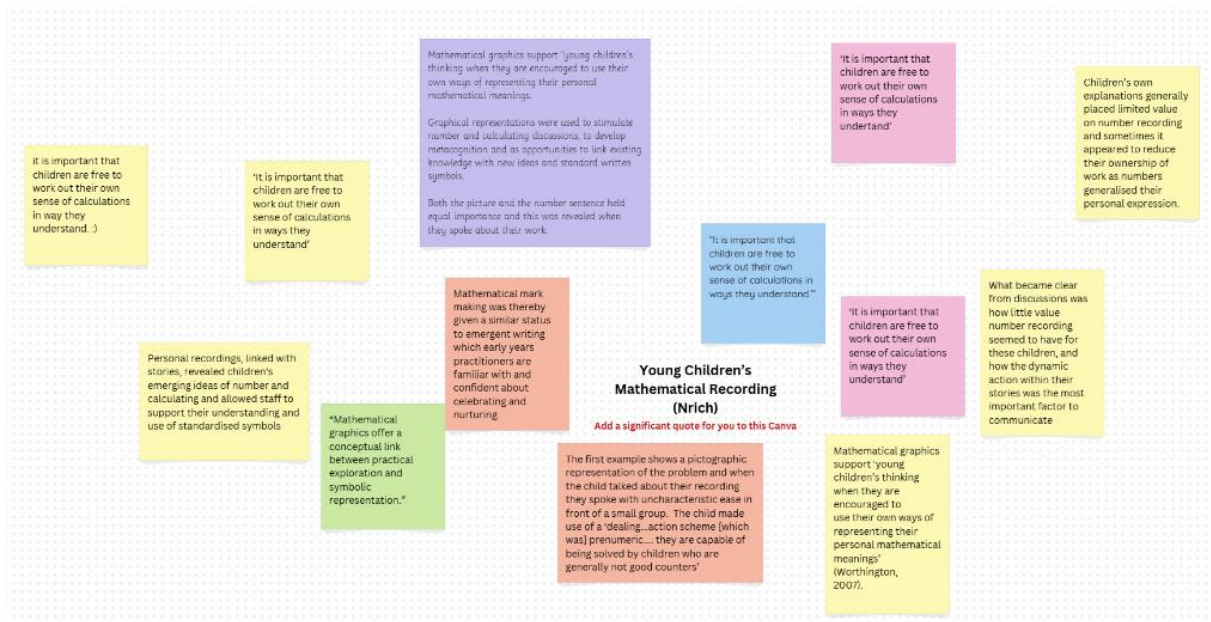


Figure 3. Significant quote on Canva

Decisions to be made by the PD lead	Considerations
Whether to inform participants before first reading that they will be identifying a significant quote	<ul style="list-style-type: none"> Knowing that the expectation is to identify a significant quote may affect the way that participants engage with a reading. Time to revisit a reading will be needed if participants are told to identify a significant quote after first reading.
Where, how and when the quotes will be shared	<ul style="list-style-type: none"> Post it notes (real or on an online platform) can be used to provide anonymity. Online platforms makes it easier for everyone to view all the quotes but may influence choice of quotes. If necessary, remind participants that it is okay to choose a quote someone else has also chosen. Quotes may be shared during PD sessions or between sessions, depending on when the reading takes place.
Managing the following discussion	<ul style="list-style-type: none"> Allow time to read the quotes chosen then use prompts for discussion such as: <ul style="list-style-type: none"> Are there common themes? What is the same? What is different? Why might someone have selected this quote? Have you tried/will you try anything differently as a result of the reading? Participants can share their chosen quote and explain why they have chosen it in small groups.
Whether to anonymise the reading	See page 11

Table 2 Significant Quote: decisions and considerations

Please post a quote you find significant from [Sustained Shared Thinking – How Important is it? | Kathy Brodie: Free CPD for Early Years Professionals](#) here

SST is a powerful tool for boosting children's thinking skills. When we engage in these extended, meaningful interactions, we're helping children to:

- Develop problem-solving skills
- Enhance critical thinking
- Improve memory and recall

Every thoughtful question, every shared problem-solving moment, every collaborative exploration is contributing to the development of capable, confident, and curious lifelong learners.

One of the most beautiful long-term impacts of SST is how it nurtures a child's natural curiosity and love for learning. By engaging children in meaningful, thought-provoking interactions, we're showing them that:

- Their ideas are valuable
- Learning is enjoyable
- Questions are welcome

Figure 4: Significant quote on Basecamp

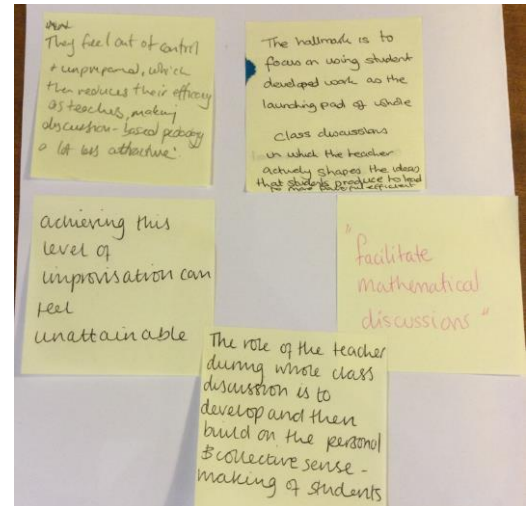


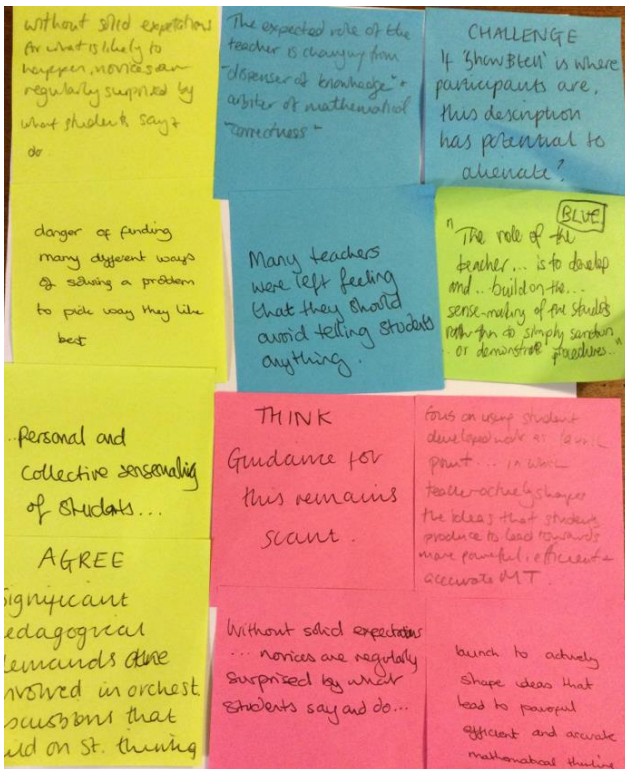
Figure 5: Significant quote with post its

Observations and reflections from using this strategy:

- This is a 'low threat/low risk' strategy which is easy to access; there is no right or wrong choice.
- All participants can choose something that is significant in some way to them.
- It can be used at any stage of a PD programme.
 - It is a good starter task for a new group, especially if responses are anonymous.
 - Removing anonymity and asking participants to explain their choice can be used when a group is more established, and participants feel secure and safe in the relationships within the group.
- It is easy to organise, with the only resources required being a reading and post its (in some form).
- It can be used to identify themes coming from a reading.
- It can be a fairly short activity but also can be extended, providing an opportunity for a discussion to which everyone can contribute.
- Exploring the chosen quotes together can encourage deeper interrogation of the reading than if simply asked to read the reading.
- Participants can develop their own thinking/activity from the quotes.
- It works well with groups of different sizes; in small groups it is easy to allow time for everyone to speak.
- It immediately demonstrates to participants that there can be different perspectives.

Three thoughts

Description: Participants are given a reading and then asked to make three different contributions.



Something that made me think

Something that I agreed with

Something that I would like to challenge

Figure 6: Three thoughts with post its

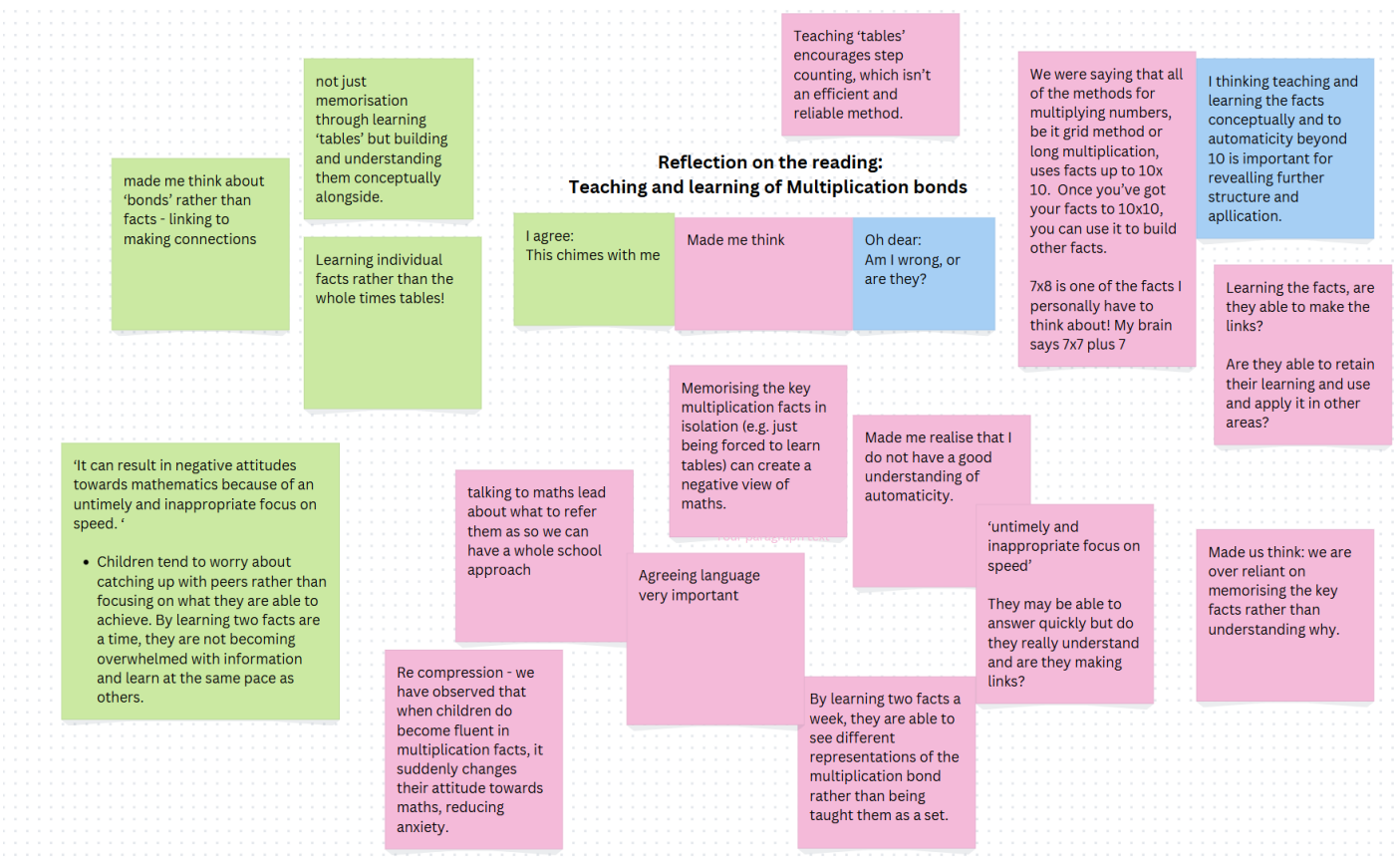


Figure 7: Three thoughts on Canva

Decisions to be made by the PD lead	Considerations
Which three thoughts will be used	<p>The purpose of the reading, the experience of participants and the maturity of the community should all be taken into consideration. Three thoughts examples include:</p> <ul style="list-style-type: none"> ○ Something I agree with. ○ Something I would like to challenge. ○ Something that made me think. ○ Something that resonates with me. ○ Something that I would like to challenge. ○ Something that I would like to try. ○ I understand this. ○ I wonder why...? ○ What does this mean? ○ I recognise this in my context. ○ I wonder if this would work in my context. ○ I can't see how this fits with my context. ○ I agree, this chimes with me. ○ This made me think. ○ Oh dear! Am I wrong, or are they?
Where, how and when thoughts will be shared	<ul style="list-style-type: none"> ● Post it notes (real or on an online platform) can be used to provide anonymity. ● One piece of paper per participant split into three can also be used and may provoke more commitment to completing all three thoughts. ● Online platforms makes it easier for everyone to view all the thoughts but may influence thinking. ● Thoughts may be shared during PD sessions or between sessions, depending on when the reading takes place.
How to manage the following discussion	<ul style="list-style-type: none"> ● Choosing one of the thoughts, for example 'something I would like to challenge' as a focus for discussion across the group. ● Participants can share their three thoughts and explain them further in small groups. ● Use prompts to discuss the thoughts such as: <ul style="list-style-type: none"> ○ Are there common themes? ○ Have you tried/will you try anything differently as a result of the reading?
Anonymising the research	See page 11

Table 3 Three Thoughts: decisions and considerations

Observations and reflections from using this strategy:

- Asking people about three thoughts forces/encourages them to think in different ways and commit these thoughts to paper. This requires engaging with the reading and decision making.
- It can provoke participants to reveal beliefs which can help the PD lead understand the participants better and inform planning for future sessions.
- As the reading chosen could challenge some of the participants practices, having one of the thought prompts about challenge can allow more open thinking and discussion, where all opinions could emerge.
- Prompts can connect the reading to each participant's own context e.g. things I would like to try.
- Making the thoughts anonymous might encourage participants to share their genuine thoughts. We have observed not everyone responds when their name pops onto the post it note on online platforms (this function can be disabled).
- Sometimes, asking for two thoughts is more appropriate (see Figure 8)



Figure 8: Two thoughts on Canva

Concept Cartoon

Description: Sample statements about the reading are presented to the participants, with a question such as: ‘What do you agree with?’ or ‘What would you say to these people?’ This can be used for a single reading or a number of readings around a common theme.

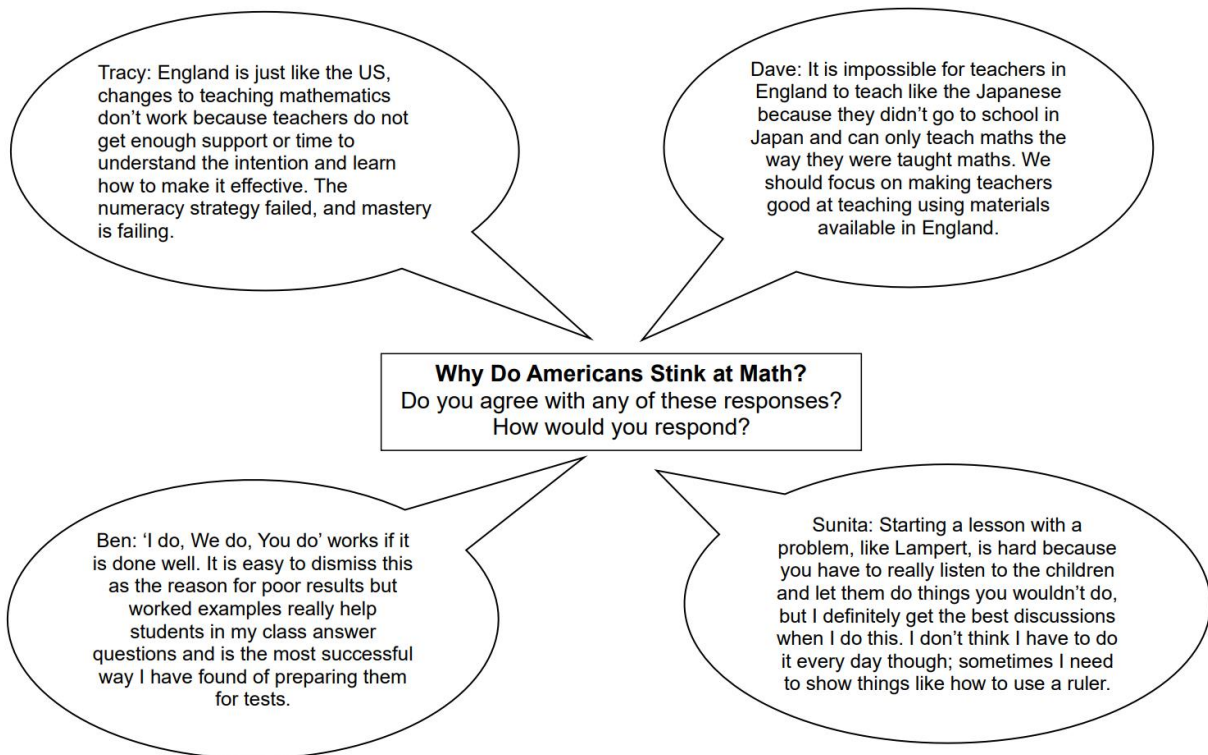


Figure 9: Concept cartoon with written prompt

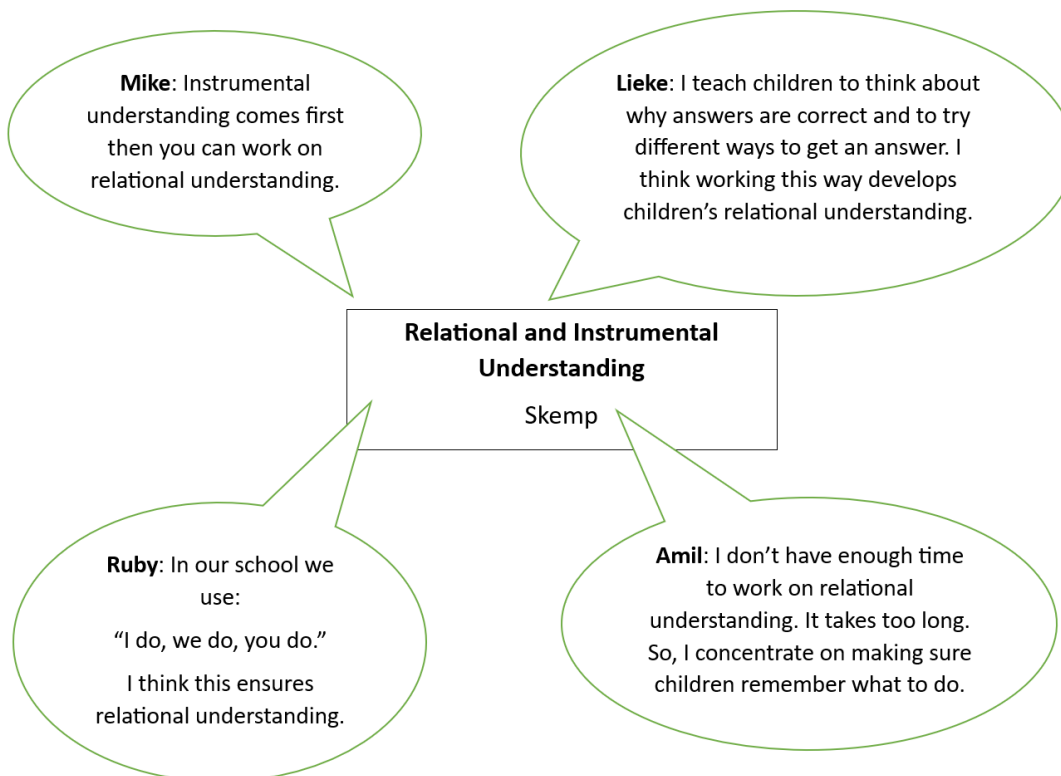


Figure 10: Concept cartoon with prompt given verbally

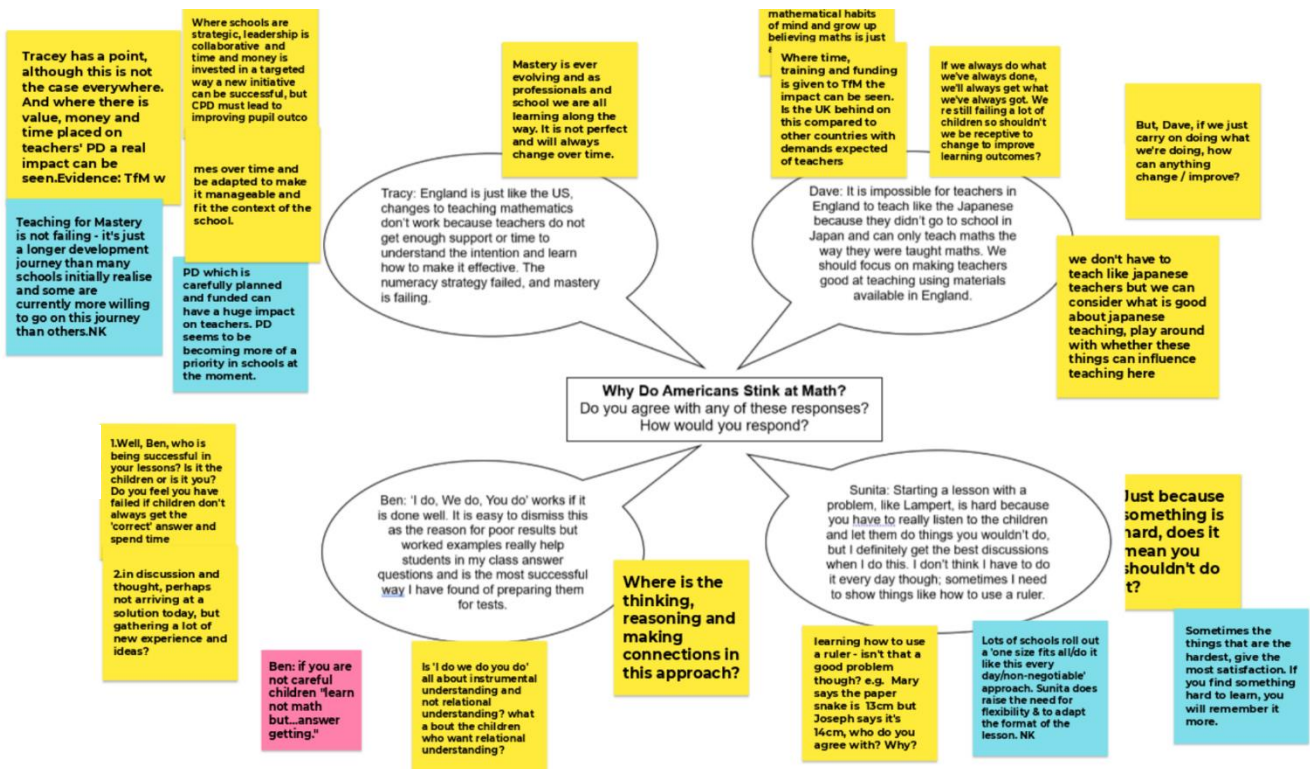


Figure 11: Concept cartoon with written responses

Decisions to be made by the PD lead	Considerations
Choice of statements	<ul style="list-style-type: none"> These will be informed by your participants' existing beliefs and by the aims of the Work Group. Some opposing/contradictory views within the statements provoke critical dialogue. It is helpful to make the statements nuanced so that people might agree with partial statements, rather than making it obvious that there are statements participants are expected to agree/disagree with.
Where, how and when the thoughts on the concept cartoon will be shared	<ul style="list-style-type: none"> Private reflection followed by discussion in groups or as whole group. Post it notes (real or on an online platform) can be used to provide anonymity. Online platforms makes it easier for everyone to view all responses but may influence thinking. Thoughts may be shared during PD sessions or between sessions, depending on when the reading takes place.
How to manage the following discussion	<p>Use of prompts:</p> <ul style="list-style-type: none"> Do you agree with any of these responses? Why do you think someone would say this? How would you respond to this person? What would you say? Which statement do you think is the most/least important/valid?
Anonymising the research	See page 11

Table 4 Concept Cartoon: decisions and considerations

Observations and reflections from using this strategy:

- It prompts participants to consider alternative points of view.
- Using fictitious points of view makes it easier for participants to challenge a position. It is not the same as challenging someone who is present in the room.
- It can provoke participants to reveal their beliefs and views.
- It allows participants to think deeply about their own practice.
- It can support them to connect what they had read to choices that teachers make when planning and when in the classroom.

Anonymous Source

Description: remove the author’s details, title, publisher, date etc. such that the reading becomes anonymous. This strategy needs to be used in combination with one of the other three strategies explored above and only when deemed necessary, because of potential influence, for example when using documents issued by government funded bodies. The intent is to give participants the permission to genuinely critique the reading, so they don’t feel they are expected to agree (or disagree) with it. In this way it can remove bias. It is important that the participants feel that you are authentic in requesting their thoughts about the reading, not simply approval/agreement.

Primary schools should:

- consider using routines, keeping noise levels low and making sure that pupils are facing the teacher when they are explaining new content and giving instructions, to help them focus on what is being taught
- help younger pupils to learn their addition facts by heart and regularly check their recall of this knowledge
- reflect on the extent to which additional afternoon practice is due to deficiencies in the early curriculum and its implementation
- aim for pupils to become proficient and ready for Year 7, rather than just meet age related expectations for end of key stage tests
- make sure that questioning helps all pupils to recall and make connections, rather than allowing pupils to guess
- provide pre-teaching, additional teaching and extra practice for most pupils with special educational needs and/or disabilities (SEND)

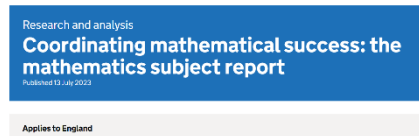


Figure 12: Anonymous source with original document

Decisions to be made by the PD lead	Considerations
Presenting the reading	<ul style="list-style-type: none"> • When presented to participants, the provenance of the source can be played down. For example: “This has been passed to me to read. What do you think?”. • If the source is available digitally, you can also change the font and format to make it appear less formal. • Be aware that participants may recognise the reading.
Sharing the provenance of the reading	<ul style="list-style-type: none"> • Ensure you provide access to the original document after using the anonymous version • Explain the rationale for anonymising the reading.

Table 5 Anonymous Source: decisions and considerations

Observations and reflections from using this strategy:

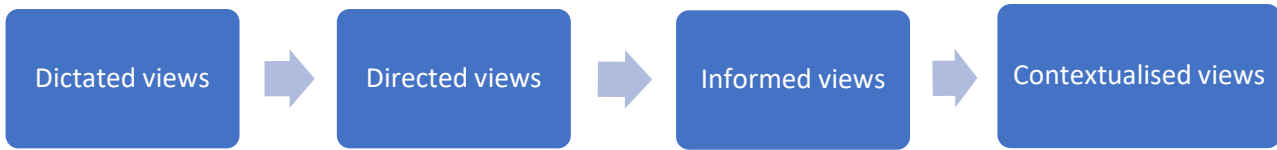
- This strategy is most useful and effective when using readings that may be considered by participants as voices of authority, for example: EEF, DfE or Ofsted publications.
- For participants who are not used to considering readings to inform their practice, the source is usually not important. Some don’t recognise the source, even when it is revealed. School or department leaders can be more aware of sources of research than many classroom teachers.
- This strategy should be used cautiously as it may provoke anxiety and participants may be reluctant to offer thinking or to challenge any of the content, especially if the community is not yet well-established and the participants do not fully trust the intention.

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<http://dx.doi.org/10.1080/03098771003695445>

Appendix One

Jurassic Model (2024)



Dictated views:

There is a *right way* to teach, and this should be unconditionally accepted.

The *right way* is a received view. Teachers understand that information and research is reflective of what 'the research says' and this is why it is the received view.

Teachers focus on teaching behaviours, following a tick list, believing this is what leads to 'great teaching' and will mean they avoid criticism. Labels are given to the behaviours and there is an assumption that there is a consensus about what these labels mean; the labels can become a way of indicating understanding, even though enacting behaviours can be done without a clear understanding of context, limitations of the behaviours etc., leading to distortion and potential negative impact. Evaluation and reflection focus on whether the behaviour is in place. Dictated views may lead some teachers to automatically dismiss and ignore them. Whether accepting or rejecting, teachers do not actively engage in thinking.

Directed views:

Teachers appreciate that there is more than one view but assume that the education community, through research, has reached a consensus about which view is 'right'.

Differing views may be voiced but teachers look to be told which is the 'right' one. There can be an over-reliance on/blind-faith in particular 'authors' and institutions as the voice of the 'right' view (e.g. NCETM, EEF...)

Teachers are willing to try out the 'right things' and will look for and share positive impact, often ignoring unintended consequences.

Informed views:

Teachers understand that research and theory is nuanced and that very little in education is either right or wrong. They consider the context of views and thinking offered, including research, and can distinguish between commentary/opinion, theory, research reports and research reviews. Teachers evaluate viewpoints based on source and evidence, and even well-known 'authors' are subject to scrutiny.

Teachers are willing to suspend disbelief and try new practices, observe impact, and reflect on this; the changes often remain 'in the moment'.

Contextualised views:

Teachers integrate views and findings from research with personal experience and reflection. They commit to approaches that reflect their principles and beliefs and recognise that understanding teaching and learning involves ongoing exploration, observation and reflection.

Teachers are willing to suspend disbelief and try new practices, observe impact, and reflect on this; they consider implications for future practice and embed long term changes as a result.

Appendix Two

Significant Quote: Example 1

Date: 01/04/2025

Work Group: SKTM Primary Teaching Assistants

Session number: session 2 of 4

Reading: [Manipulatives in the Primary Classroom | NRICH](#)

How did you know about this reading?

My co-leads planned for this to be used in the TA SKTM programme.

Why did you choose this reading for this particular group? It was chosen by others.

Did you intend that it would influence participants in a particular way? If yes, how?

I hope they would think about how resources can be used to expose mathematical structure and support understanding.

Did you anonymise the text? No.

Why? I didn't feel it was needed.

Strategy chosen (significant quote, three thoughts, concept cartoon): Significant quote

Why did you choose this strategy?

It's the second reading for this group and the first one was very short (hub statement) so wanted something not too heavy after the long read.

How did you use it?

They had the reading before the session and could choose to read it beforehand, but I wanted them to have time to read during the session as TAs don't have PPA and I wanted to value the time spent reading.

They read in silence and were asked to write a significant quote on a paper Post-it note. Then they were grouped into 5s and told each other their quote and why it was chosen and then together to reflect on whether any themes emerged from this conversation. I then collected themes on flipchart from the groups.

What did you notice about the engagement of participants?

They talked and talked – they were really on-task talking about their own experiences using manipulatives. The emerging themes were around the importance of giving children a chance to play with resources before using them mathematically, about giving children a choice of what to use so that they could learn from this choice, using manipulatives with ALL children. This led to us noticing that some of these are things they can do something about and some they can't e.g. they can't give resources to all the children and they don't get to choose if the children get a lot of time to play with the resources, but they can offer their children a choice from two or three resources and could let them play with them for a short time.

What didn't come out was the importance of using resources to represent the mathematical structure. So that'll have to come out another way another time.

Significant Quote: Example 2

Date: 4/2/25

Work Group: Primary Sustaining Tfm

Session number (e.g.2/6): Planning meeting 1

Reading: [espresso 25 introduction to fractions.pdf](#)

Why did you choose this reading?

We were considering fractions subject knowledge as part of the planning process.

Did you anonymise the text? no

Why? I did not feel it was needed, and I wanted them to know the source and its relevance.

Strategy chosen (significant quote, three thoughts, concept cartoon): significant quote

Why did you choose this strategy? I felt more comfortable as I have had experience of it before.

How did you use it? I got them to read the text first and then afterwards to find the one quote which resonated with them. We then went round the group and shared their quotes and why they chose it. This worked well as it was a relatively small group. If the group was larger, I would have used post its.

What did you notice about the engagement of participants?

I noticed that the quotes promoted a discussion which built on from others. I did not have to say much, and the group guided the discussion. Also, when looking at some assessment questions for the lesson planning, some of the group referred to the text and the significant quotes, in particular.

Significant Quote: Example 3

Date: 16/1/25

Work Group: RIWG Sustained Shared Thinking

Session number (e.g.2/6): 2/5

Reading: [Sustained Shared Thinking – How Important is It? | Kathy Brodie: Free CPD for Early Years Professionals](#)

Why did you choose this reading?

Sustained shared thinking is not widely understood and papers available are limited. This was chosen because the author has invested time in this area and it provides one view of what it is and what it can look like, in an EYFS context, providing both background understanding and an opportunity to consider how it could look the same or different in other contexts

Did you anonymise the text? No

Why?

It was unlikely that the group would be influenced by the author – we gave them the link above.

Strategy chosen (significant quote, three thoughts, concept cartoon): Significant quote

Why did you choose this strategy? It was the start of the RIWG so we wanted something non-threatening that would provide an opportunity for discussion arising from sharing all the quotes.

How did you use it?

We asked people to read the article between sessions 1 and 2 and to put a quote in a Basecamp thread prior to session 2, which worked really well. We then copied the quotes onto a slide for the meeting so that we could see them in one place and read them again and it acted as a catalyst for further discussion about what SST means and what it looks like, the focus of our RIWG.

What did you notice about the engagement of participants?

The quotes popping into email inboxes worked well as a prompt for other to select a quote. There was only one overlap; we are not sure if people were deliberately choosing different quotes or not. We did notice people reflecting that they had chosen something as a quote because they recognised it indicated a change to their own practice they wished to make. However, this did not seem to be that they felt dictated to, it felt more that they were taking an informed approach to considering the reading. We also noticed that for some people they read the article in a way that meant they were fitting what it said to what they already thought rather than considering there may be some challenges to current practice arising from the reading. It may be that using a concept cartoon might allow this to be more widely discussed.

Three Thoughts: Example 1

Date: 9/5/25

Work Group: Embedding TfM

Session number (e.g.2/6): Sustaining session 2

Reading: [Teaching Fraction Magnitude Using the Number Line Jessica Rodrigues, PhD](#)

How did you know about this reading? Research through Google Scholar.

Why did you choose this reading for this particular group?

The focus of the planning was on using fractions with support of the number line. As a group we were not familiar to this concept, so we needed some support on how to teach this with the children.

Did you intend that it would influence participants in a particular way? If yes, how?

Yes, we read through the paper, and we discussed some of the images we could use in our planning.

Did you anonymise the text? No

Why? I felt that we had not looked at this author previously, so we had no prior exposure.

Strategy chosen (significant quote, three thoughts, concept cartoon): three thoughts

Why did you choose this strategy?

I felt this gave the participants an opportunity to take what they felt was important from this research. This enabled them to share their point of view anonymously and I facilitated conversations.

How did you use it?

I asked them to Post-it note a point from the article that resonated with them. We discussed these points and how we could incorporate it into our lesson. It gave us some good suggestions on where to start with our planning. It was a difficult initially to know what to do with this topic as the WR materials did not have supporting materials on how to use the number line.

What did you notice about the engagement of participants?

I directed the participants to parts of the text that may be relevant to our lesson. We felt more informed seeing different ways we could approach the lesson. We then made decisions as a group referring to the initial assessment questions. We committed to using the number line image from the research and we included the use of gesture that was mentioned in the text.

Three Thoughts: Example 2

Date: 21 Jan 2025

Work Group: PD Lead Programme (Secondary)

Session number (e.g.2/6): Event 3 of 4

Reading:

Four excerpts – of 3 meta-analyses and one guidance report based on a meta-analysis. The text of the excerpts is included below. The actual files given included NCETM logos/branding (only), and each was no more than one side of A4.

Meta-analyses:

- [Cordingley, P., Higgins, S., Greany, T., Buckler, N., Coles-Jordan, D., Crisp, B., ... & Coe, R. \(2015\). Developing great teaching: lessons from the international reviews into effective professional development.](#)
- [Darling-Hammond, L., Hyler, M. E., & Gardner, M. \(2017\). Effective teacher professional development.](#)
- [Nelson, R., Spence-Thomas, K., & Taylor, C. \(2015\). What makes great pedagogy and great professional development. Final report: teaching schools R&D network national themes projects 2012-14: Spring 2015.](#)

Guidance report based on a meta-analysis:

- [Collin, J., & Smith, E. \(2021\). Effective Professional Development. Guidance Report. Education Endowment Foundation.](#)

How did you know about this reading? These readings are given in the PD Lead Programme

Why did you choose this reading for this particular group?

On joining, participants on the PD Lead Programme very commonly express an interest in accessing “research into professional development”. These meta-analyses on the effectiveness of teacher PD are intended to address this.

Did you intend that it would influence participants in a particular way? If yes, how?

Yes. The anonymisation was intended to cast some doubt in participants’ minds – where is this from, who has written this? Once the authors and the nature of the research had been revealed, the intention was that participants would recognise some of their own practice amongst this international evidence and be challenged to consider other reported strategies that they were not using.

Did you anonymise the text? Yes

Why?

To be able to challenge participants on how credible they had found the readings – and to justify this.

Strategy chosen (significant quote, three thoughts, concept cartoon):

Agree / challenge / think - three thoughts

Why did you choose this strategy?

I'm a fan. Participants have to 'give', to commit to a point of view.

How did you use it?

Groups of four, 10 minutes for each to read their piece (either 1a, b, c or d), and commit one point per Post-it note [Agree / challenge / think], knowing that they were going to share this with the group, next. The group then used a 'zones of consensus' sheet – nothing more than a couple of concentric shapes on a piece of flipchart paper – and took it in turns to introduce their 'points', including why they agreed/challenged/ found it thought-provoking. The group related this to any similarities in their reading, and judgements.

What did you notice about the engagement of participants?

The anonymity was revealing – I asked directly whether anyone had thought to ask where these readings were from (and if not, why not? These participants did not explicitly raise the source of the readings). In response, one participant asked if the text had been generated by AI, another thought that this had been written by NCETM/me as a directed need-to-know summary. One participant noted a different 'tone' to the EEF reading (1d below). I'd suggest that the group were somewhat 'informed' – maybe a little bemused not to be directed, maybe not yet comfortable with having to make up their own minds.

Note that this example was a modification of an existing task in the PD Lead Programme, which added a step to the agree/challenge/think [ACT] approach, in which participants 'sought consensus' on their ACTs. This was unnecessarily confusing, and I wouldn't bother with the 'zones of consensus' aspect next time – participants speaking to their agreement / challenge / thinking is enough.

Three Thoughts: Example 3

Date: 12.12.24

Work Group: Mastery Readiness

Session number (e.g.2/6): 2/5

Reading:

<https://www.ncetm.org.uk/features/no-need-to-differentiate-in-primary-school-maths-lessons/> Debbie

Morgan: 'No need to differentiate in primary school maths lessons'. I used the Podcast rather than the reading.

Why did you choose this reading?

Some of the schools had discussed the fact that their schools were ability grouping and teachers were spending a lot of time creating differentiated tasks for their children. This was evident during the learning walks. I wanted to find out what the Maths leads thought about this. A reason for using the podcast rather than the transcript was so that participants could listen rather than read. It was a little different to the norm (i.e. not reading) and meant that we were all finishing at the same time.

Did you anonymise the text?

Yes

Why?

I didn't want them to be swayed by the fact it was Debbie Morgan from NCETM. This might have led to a complete agreement and not allowed them to share any opposing views.

Strategy chosen (significant quote, three thoughts, concept cartoon):

3 Post-it notes

Why did you choose this strategy?

It seemed simple to understand what was expected (for me and for the participants). It was easy to prepare. It allowed for open thinking and the expectation that you might agree or not agree with what was being said.

How did you use it?

I showed the 3 Post-its on the board and asked participants to draw 3 columns (some were working on their laptops so this accommodated everyone) and note down anything they wanted underneath the headings whilst we listened. We listened to about 10 mins of the podcast. I then gave them thinking time afterwards to make any further notes before we shared their thinking. I did this by asking if anyone would like to share their thinking rather than asking one person at a time to share.

Differentiation



Things that resonate with you.

Things that you would like to challenge.

Things that you would like to try.



What did you notice about the engagement of participants?

Before we started listening, the participants seemed happy with thinking about the podcast in these 3 ways.

During the podcast, most participants were making a few notes but mainly listening. However, there was one who kept his pen poised above the paper as though he was going to write but didn't. I said to him quietly that it was fine to not write anything, as long as he was thinking – he let out a sigh and said “Yes, I'm doing exactly that.” He was relieved.

In the thinking time after the podcast, most, but not all, added to their notes.

When it was discussion time, all but the least experienced participant shared their thinking with confidence; this included the one who did not write anything down. Participants mostly agreed with each other, mostly agreed with what was said in the podcast although thought it was a ‘best fit’ scenario which didn't take account of the difficulties around ‘real life’ situations in the classroom. They suggested ways in which the teachers could overcome the difficulties but nevertheless, shared their views openly. After a while, I asked the silent, less experienced participant if she would like to share anything and she then agreed with the others with a short explanation.

I then explained who had been speaking in the podcast – none of the participants had heard of Debbie Morgan and so felt that it wouldn't have mattered if they had heard her name at the start (I had trimmed the podcast so Debbie's name and the NCETM label was missing). Some had heard of the NCETM though but were not swayed as they believed they had experience which led them towards their own views – they did not disagree that the NCETM was portraying the idealistic view and agreed that this was something to work towards in their schools.

I asked them if the Post-it notes format was useful or not. They all said yes as it focused their thinking whilst they were listening, but one person said, “Only because you said there was no pressure to write anything.”

Concept Cartoon: Example 1

Date: Used on 2/2/24

Work Group: LLME

Session number (e.g.2/6): Midway through the year

Reading: [Why Do Americans Stink at Math?](#)

How did you know about this reading?

I read of someone talking about it and when I saw it was about Akihiko, I was interested.

Why did you choose this reading for this particular group?

It resonated with a number of things we had been discussing and grappling with.

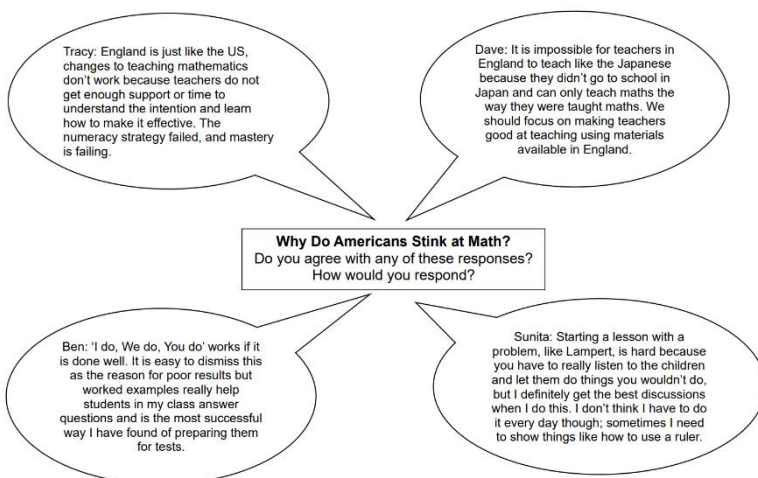
Did you intend that it would influence participants in a particular way? If yes, how?

I wanted to provoke people so that they both agreed and disagreed.

Did you anonymise the text? No

Why? It is not a well-known author.

Strategy chosen (significant quote, three thoughts, concept cartoon): Concept Cartoon.



Why did you choose this strategy?

It is one that I hadn't used at the time so wanted to challenge myself to do this and it allowed me to write some quite provocative statements within the four responses including ones I suspected some people agreed with.

How did you use it?

The reading was sent out to primary/early years LLME just over two weeks before the online meeting and a link to a Jamboard.

What did you notice about the engagement of participants?

- The statements provoked some strong and detailed responses, where people revealed beliefs and views. We had them going across three pages of Jamboard.
- We used the experience to discuss what we do if we realised people are asking us or expecting us to tell them what to do, which allowed everyone to think further about their role as PD lead.
- We then talked about how the concept cartoon contributed to their thinking about the article.



How did the concept cartoon contribute to your thinking about the article – what did it provoke?



Concept Cartoon: Example 2

Date: 26/2/25

Work Group: SKTM ECT

Session number (e.g.3/7): Short launch and then 6 afternoon sessions, this was reading for between afternoon sessions 1 and 2

Reading:

[Skemp's piece on relational and instrumental understanding](#) and NCETM's 5 big ideas [Five Big Ideas in Teaching for Mastery | NCETM](#)

How did you know about this reading?

I have used Skemp for years with early career and experienced teachers and the NCETM's reading was chosen because I wanted to connect Skemp to Teaching for Mastery and conceptual understanding.

Why did you choose this reading for this particular group?

The research question has the word 'understand' in it so needed to talk about what it means to understand – their own ideas and perhaps their school's ideas.

Did you intend that it would influence participants in a particular way? If yes, how?

I wanted them to ponder about whether they were trying to aim to relational understanding and consider whether their school's pedagogical policy was leading them and their children.

Did you anonymise the text? No

Why? Didn't feel it was needed

Strategy chosen (significant quote, three thoughts, concept cartoon):

Concept cartoon (Skemp) and significant quote (NCETM)

Why did you choose this strategy?

To try to support them to connect what they had read to choices that teachers make when planning and when in the classroom.

How did you use it?

The extract was read as an in-school task. Participants were given 5 minutes to skim re-read in the session and then assigned break-out rooms to talk about each person's opinion. Participants were not expected to write on Post-it notes but each of three rooms was asked to share their thoughts.

What did you notice about the engagement of participants?

The first group threw me as they said they did not understand it, that it was too academic and that it was old and so not really relevant now. I was a bit shocked and agreed that they were right, it was old but that they were about to read something else that is more modern. Thank goodness I had the 5 big ideas for the second reading.

One person from first group mentioned how relational understanding might fit with the concept of schema and children allowing new ideas to influence their schema.

The second group mentioned conceptual understanding and described relational as the same and contrasted it with procedural understanding which they thought was instrumental understanding – reasons for the rules and they thought that what Lieke said fitted with this sort of understanding.

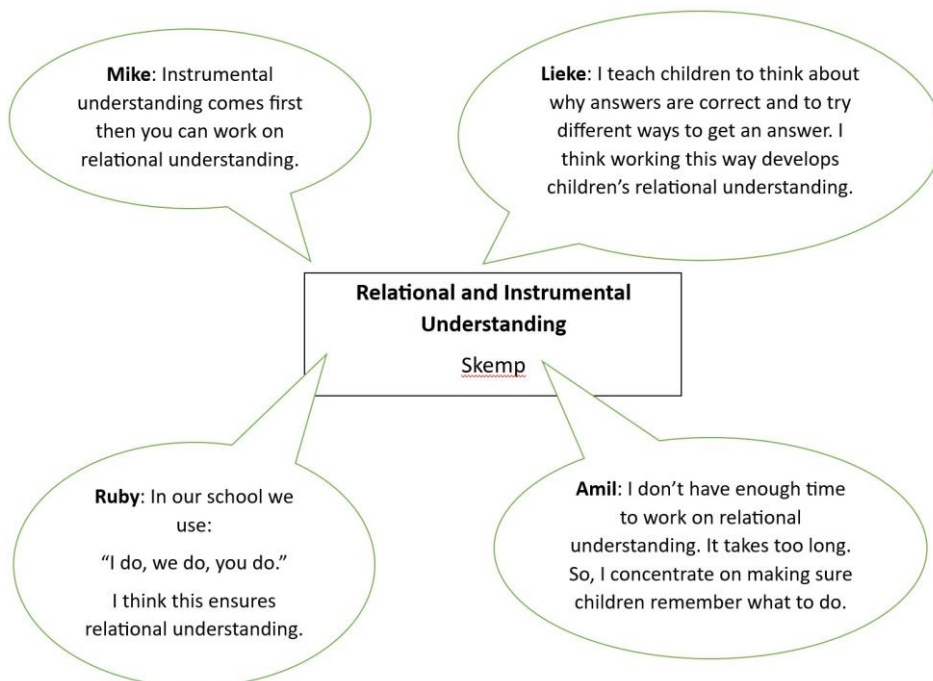
The third group mentioned that the I do, you do, we do was something they do in school but did not connect it to relational understanding.

The ECTs all then had time to read the NCETM webpage and to choose a quote that they felt connected to the notion of understanding – they chose one and put it into chat – all the ECTs chose something.

I felt that not all the ECTs had given time to reading the article before the session so 5 minutes reread was not enough, I think that I need to choose shorter articles or give them reading time within the session. In the past I had more of my own SCITT trainees as ECTs so they had already read Skemp, whereas this time only 1 of the 12 was an ex-DP SCITT trainee.

On the SCITT, I asked trainees to connect Askew’s orientations to relational and instrumental understanding: They read, Skemp, I ask them to agree what each understanding means and then them connect to orientations. If I use this reading again, I think I need to have a task that clarifies the reading before expecting them to analyse the reading by connecting it to fictitious opinions.

Connecting to the NCETM big ideas was useful as it established that conceptual understanding might mean relational understanding, and I asked them to think about what their school is asking them to work on.



[Five Big Ideas in Teaching for Mastery | NCETM](#)