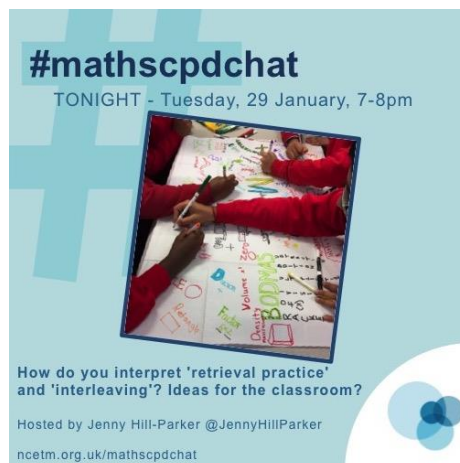


#mathscpdchat 29 January 2019

How do you interpret 'retrieval practice' and 'interleaving'? Ideas for the classroom?

Hosted by [Jenny Hill-Parker](#)

This is a brief summary of the discussion – to see all the tweets, follow the hashtag #mathscpdchat in Twitter. To read the discussion-sequence generated by a specific tweet, click on that tweet below:

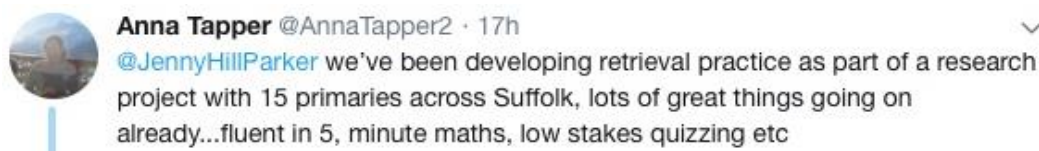


Some of the areas where discussion focussed were:

- **furthering one's knowledge and understanding of teaching and learning strategies** by using twitter 'for research', and by attending organised CPD events ... and consequently by reading, adjusting teaching, reflecting, sharing, discussing, keeping on reading, adjusting, reflecting, sharing, discussing, reading, adjusting, reflecting, discussing, reading ... ;
- using evidence of pupils' needs to **structure retrieval practice** ... planning when to revisit different curriculum areas following **principles of interleaving**;

- overcoming ‘we’ve done this before’ resistance from pupils ... pupils accepting that **regularly drawing on mathematical ideas previously looked-at in depth** in order to solve new problems supports and enhances their long-term learning;
- setting weekly **homework that ‘visits’ the same ten topic areas each week** ... seeing it as a form of retrieval practice;
- programmes of **‘interleaved study’ more effectively supporting learning than programmes of ‘blocked study’** ... eg ABCBACAB... rather than AAABBBCCC ... getting this notion across to students when they are revising for GCSE and A-level exams;
- **how ‘interleaving’ and ‘spaced retrieval’ can be written-in to a Scheme of Learning** ... eg revisiting order of operations when main focus is on operating with fractions, revisiting algebraic manipulation when main focus is on properties of shapes, ...;
- secondary teachers **developing effective retrieval practice as part of a research project** carried out jointly with teachers from feeder primary schools;
- possibility of **‘interleaving’ tasks/items that focus on various different ways of working mathematically** ... eg interleaving tasks that focus on visualising, working systematically, justifying and convincing, noticing structure, making conjectures,

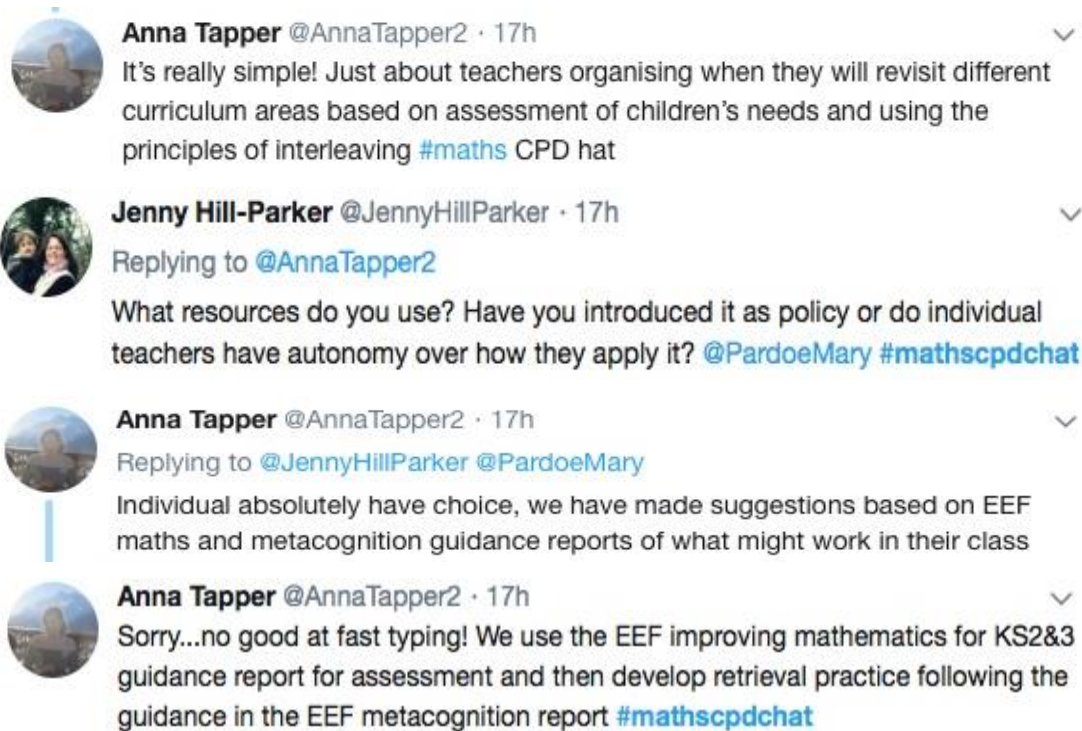
An interesting ‘conversation’ of tweets, about a cross-phase (primary-secondary) research project aiming to develop effective mathematics teaching strategies, including those involving effective retrieval practice and interleaving, followed from this tweet by [Anna Tapper](#):



including these from [Jenny Hill-Parker](#) and [Anna Tapper](#):



these from [Anna Tapper](#) and [Jenny Hill-Parker](#):

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- The screenshot shows a Twitter thread with four tweets. Each tweet includes a circular profile picture, the user's name and handle, the time since posted, and the text of the tweet. The tweets are as follows:
- Anna Tapper** @AnnaTapper2 · 17h
It's really simple! Just about teachers organising when they will revisit different curriculum areas based on assessment of children's needs and using the principles of interleaving #maths CPD hat
 - Jenny Hill-Parker** @JennyHillParker · 17h
Replying to @AnnaTapper2
What resources do you use? Have you introduced it as policy or do individual teachers have autonomy over how they apply it? @PardoeMary #mathscpdchat
 - Anna Tapper** @AnnaTapper2 · 17h
Replying to @JennyHillParker @PardoeMary
Individual absolutely have choice, we have made suggestions based on EEF maths and metacognition guidance reports of what might work in their class
 - Anna Tapper** @AnnaTapper2 · 17h
Sorry...no good at fast typing! We use the EEF improving mathematics for KS2&3 guidance report for assessment and then develop retrieval practice following the guidance in the EEF metacognition report #mathscpdchat

and this from [Kathryn Darwin](#):

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- The screenshot shows a single tweet from Kathryn Darwin. It includes a circular profile picture, the user's name and handle, the time since posted, and the text of the tweet.
- Kathryn** @Arithmaticks · 17h
I've attempted to make things like this explicit in the SOL now, it has its own section. E.g. use of order of operations when doing fractions, algebra within shape or vice versa. So easy to forget it can be that easy sometimes.

Among the links shared were:

[Exploring Barak Rosenshine's seminal Principles of Instruction](#) which is a blog by Tom Sherrington posted on 10 June 2018. It is based on a talk that the author gave at ResearchEd in Rugby. The paper that the blog is about, 'Barak Rosenshine's Principle of Instruction' published in 'American Educator' in 2012, can be downloaded from the same page. It was shared by [Jenny Hill-Parker](#)

[Interleaving Quizzes](#) which is a collection of free differentiated maths quizzes from missbsresources.com. These quizzes are 'work in progress from the front line of my classroom' writes [@MissBsResources](#). It was shared by [Jenny Hill-Parker](#)

[5 Maths Gems #87](#) which is the 87th gems post from Resourceaholic. The first item (Regular Recall) discusses the nature of some online collections of 'mixed topic maths questions',

shows some example questions and provides links to some collections. It was shared by [Jenny Hill-Parker](#)

[Memory: Testing](#) which is a section of [Craig Barton](#)'s website, [mrbartonmaths.com](#), in which Craig reviews some research papers about tests and testing in mathematics. He refers to 'low-stakes' tests, 'spacing' and 'interleaving', and explains what he means by those terms. It was shared by [Jenny Hill-Parker](#)

[No-Quiz Retrieval Practice Techniques](#) which is a 'That Boy Can Teach' blog addressing the criticism that retrieval practice and quizzing do not promote real understanding of the content that is being memorised. It was shared by [Jenny Hill-Parker](#)

[The benefit of interleaved mathematics practice is not limited to superficially similar kinds of problems](#) which is a research report from the Psychonomic Society written by Doug Rohrer, Robert F. Dedrick and Kaleena Burgess. The authors conclude 'that interleaving improves mathematics learning not only by improving discrimination between different kinds of problems, but also by strengthening the association between each kind of problem and its corresponding strategy'. It was shared by [Mary Pardoe](#)

[Cognitive Load Theory and Retrieval Practice](#) which is a blog by 'The Hospitable Wanderer' ([Brendan Bayew](#)) consisting of a presentation that he gave to the staff at his school. It was shared by [Brendan Bayew](#)

[Moving from no-stakes to low-stakes](#) which is a blog by 'The Hospitable Wanderer' ([Brendan Bayew](#)) about his 'own starter activities called "Do Nows"'. It was shared by [Brendan Bayew](#)