BSRLM Early Years and Primary Mathematics (EYPM) Working Group

Minutes of the Fifth Meeting

Venue: Open University, Milton Keynes
Date: Saturday 9th March 2019
Time: 14:20 -14:50
Chair: Sue Gifford **Scriber:** Jenni Back

Present:
Sue Gifford, Rose Griffiths, Jenni Back, Dave Godfrey, Sheldon Phillips, Julie Alderton, Cath Gripton, Alison Curwen, Fufy Demissie, Rachel Marks, Gwen Ineson, Balbar Kaur
Apologies: Natthapoj Vincent Trakulphadetkrai

Ofsted inspection framework, handbooks and research overview- Consultation closes 5th April.
https://www.gov.uk/government/consultations/education-inspection-framework-2019-inspecting-the-substance-of-education

Everyone is encouraged to respond and to say what they think, rather than just responding to the questions. (Ofsted are urging that too!)
The good news:

- Ofsted will not look at tracking data – they will have conversations with teachers about why they are doing what they are doing and looking at children's work and their books.
- Management are required to ensure staff are knowledgeable about curriculum areas and have professional development.
- There is a new maths Ofsted HMI: Emma Gregory.

Discussion:
Concerns:

- There is nothing about the training of the inspectors.
- Outcomes are still emphasised very heavily.
- Guidance is not tailored to the different curriculum areas – and the section about maths (para 287 p88 Schools handbook) has a very narrow view of mathematics learning

There are general objections to maths as knowledge, concepts, procedures and efficient algorithms. There is an emphasis on knowledge eg 'Pupils have sufficient understanding of and unconscious competence in prerequisite mathematical knowledge.' The definition of learning as knowledge being put into long-term memory from a cognitive science view is very narrow. Problem solving is presented as an application of knowledge following on from this, rather than a way of learning.
Concerns about this view of mathematics and learning mathematics was voiced at a recent ACME roundtable, looking at this and the new Early Career Framework, with a recommendation that expert maths educationalists should be consulted. A critique of the research basis and its applicability to maths has been produced by Anne Watson (see her website http://www.pmtheta.com). Her main point is that cognitive load theory derives

from studies of learning with particular kinds of tasks and cannot be directly applied to the classroom learning of mathematics.

Re Early years, there is not much on maths in the PVI handbook (private and voluntary – covers playgroups and childminders) and nothing about early years in the handbook for schools (covering nursery classes as well as reception). Ofsted are aware of this and said they would consult with curriculum experts and are meeting with Sue Gifford and Helen Williams (from the Early Childhood Maths Group).

The case for Shape, space and measures

SG presented possible sources to justify the continued inclusion of space and measure in FY curriculum:

- Leeds Uni study: ball skills predict maths – predictive timing (Mon-Williams (2018) *Psychological Science)*
- Spatial transformation skills predict number line understanding implies more jigsaws, tangrams etc (**Gunderson, E.A., Ramirez, G., Beilock, S.L. & Levine, S.C.** (2012) the relation between spatial skill and early number knowledge: the role of the linear number line *Developmental Psychology* 8(5) 1229-1241)
- See Erikson website for references to research that spatial reasoning predicts maths attainment later, not just naming shapes but more general, (eg including map making, small world play) and recommended activities:
  - Blockplay predicts high school maths: need to encourage progression with challenges eg building arches and stairs
  - Spatial thinking progression: static to dynamic relationships eg visualising relative positions, different perspectives, then how moving parts relate
  - Spatial language: progression from position to proximity to direction
  - Picture books about spatial reasoning: *Lucy in the City, Rosie's walk, Henry's map, The secret birthday message* (Eric Carle)
  - Snapshot activity: Show images of shapes briefly and discuss, *What do you see*?

Clements and Sarama (2009) also summarise research.
Please send other references you find!