

Mathematics education and children in public care

Rose Griffiths

Professor of Education, University of Leicester

A diverse group

- Varied reasons for coming into care
- At any one time, over 80,000 children (0.7%) in England
- Mostly living in foster families
- Have very varied needs
- Often have low attainment



Home and school

We are faced by each child's past experiences:

- Neglect
- Loss, bereavement and trauma
- Attachment disorders
- Fear of change
- Low expectations

all leading to under-achievement

We are working with wiggly wool:

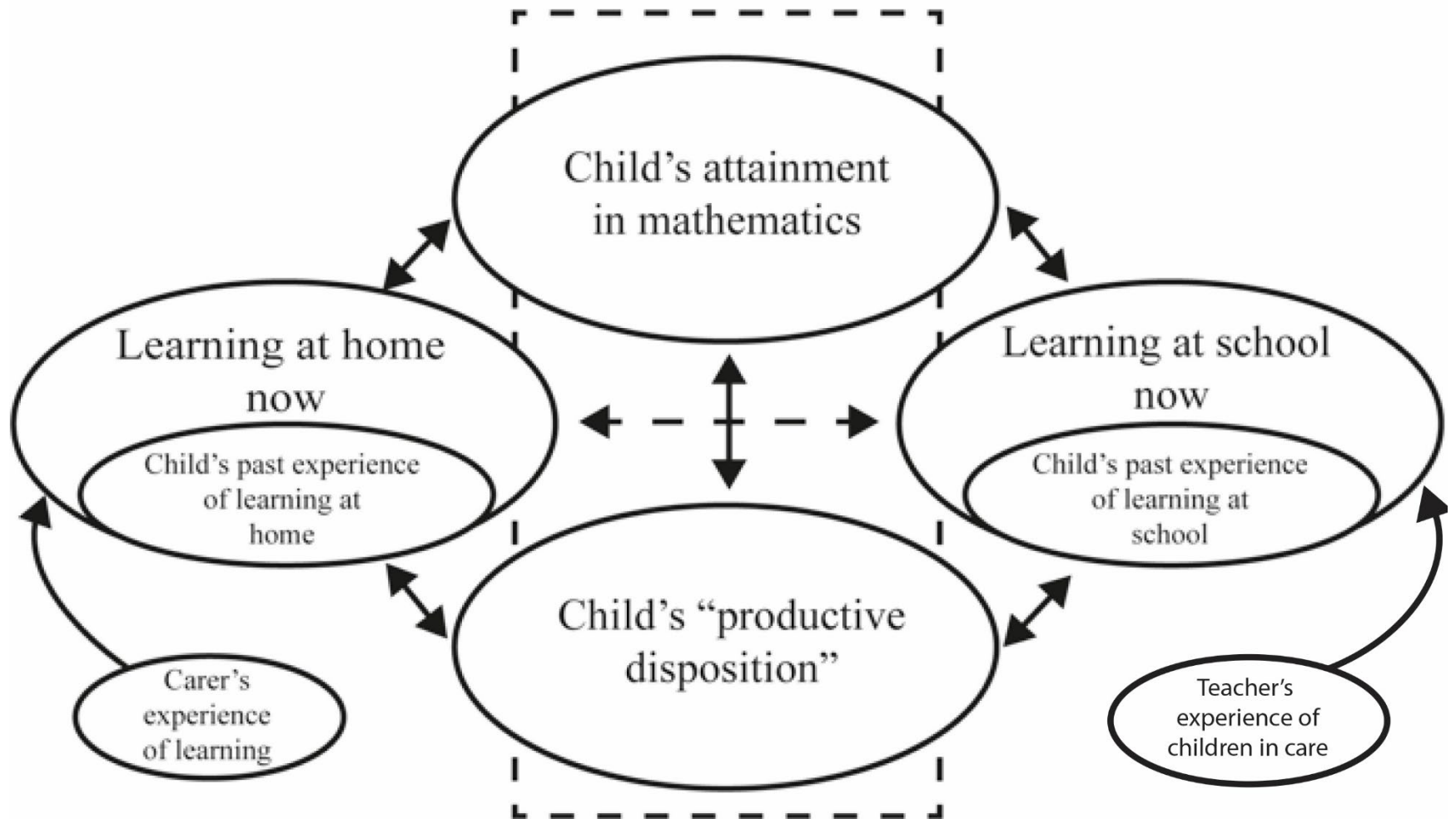


Working with children
who have
significant difficulties
requires more skill than
'first teaching'.

My study...

- 2008 to 2014 part-time PhD at Cambridge
- **Case studies of 5 children aged 7 to 11, all in care, all identified by their school as having major difficulties in maths.**
- Aimed to explore each child's experience of 'doing maths' at school and at home, following them for at least a year ...
- ...to look for ways of improving the situation for other children with care experience.

Elements of child's learning in maths:



Productive disposition

“The habitual inclination to see mathematics as sensible, useful and worthwhile, coupled with a belief in diligence and one’s own efficacy.”

(Kilpatrick, Swafford and Findell, 2001)

Some children have a

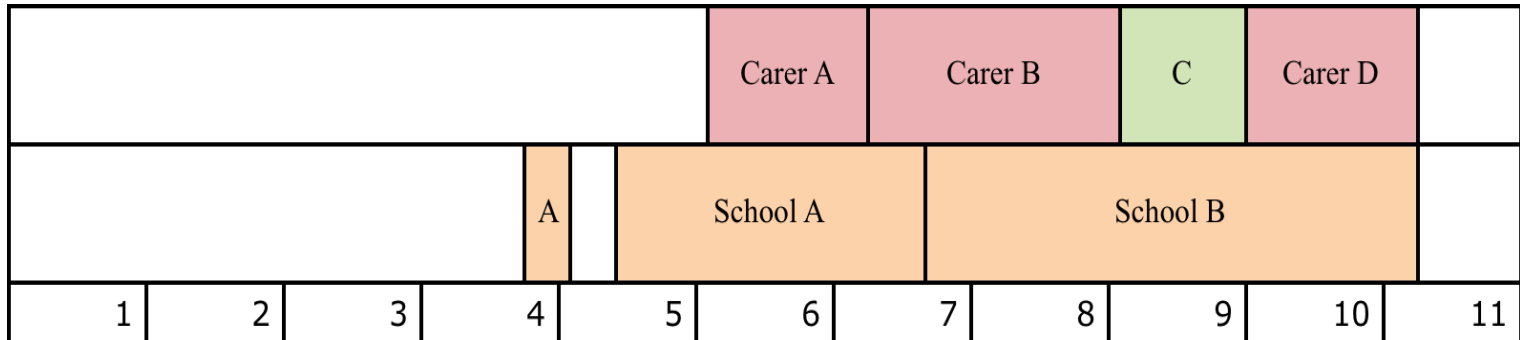
very unproductive disposition!

Let’s look at Kyle’s experience ...

I’ll set the scene, then

we’ll watch film of him working with me.

Timeline for Kyle



Kyle in class...

Works slowly, often refuses to write anything, wandering, badly behaved, frequently sent out.

Never copies.

T u l s a a y d t h i m e v c h
I can use grid method

*	10	5	*	10	2
g	9 * 10 =		2	3 * 10 =	
	8 * 5 =			2 * 2 =	

Kyle's difficulties

- **Counting**
- **Zero**
- **Number facts**

Let's watch some film now.

It's about 10 minutes, but we will stop part-way through for some interim thoughts.

Kyle on video learning something new...

Positive approaches

- The clinical interview
- Using counting equipment with a context
- Video recording and visually-stimulated recall



Also...

- Using several strategies to solve the same problem
- Asking children to pose problems
- Providing density of activity to learn number facts

Some conclusions

- Teachers need a better understanding of effects of child's life experience.
- Child needs time with teacher, leading to good assessment; good teaching; and attention to child's avoidance techniques.
- Family is sometimes doing more than school! School can learn from home.

And what next with this work?

Materials for children and teachers

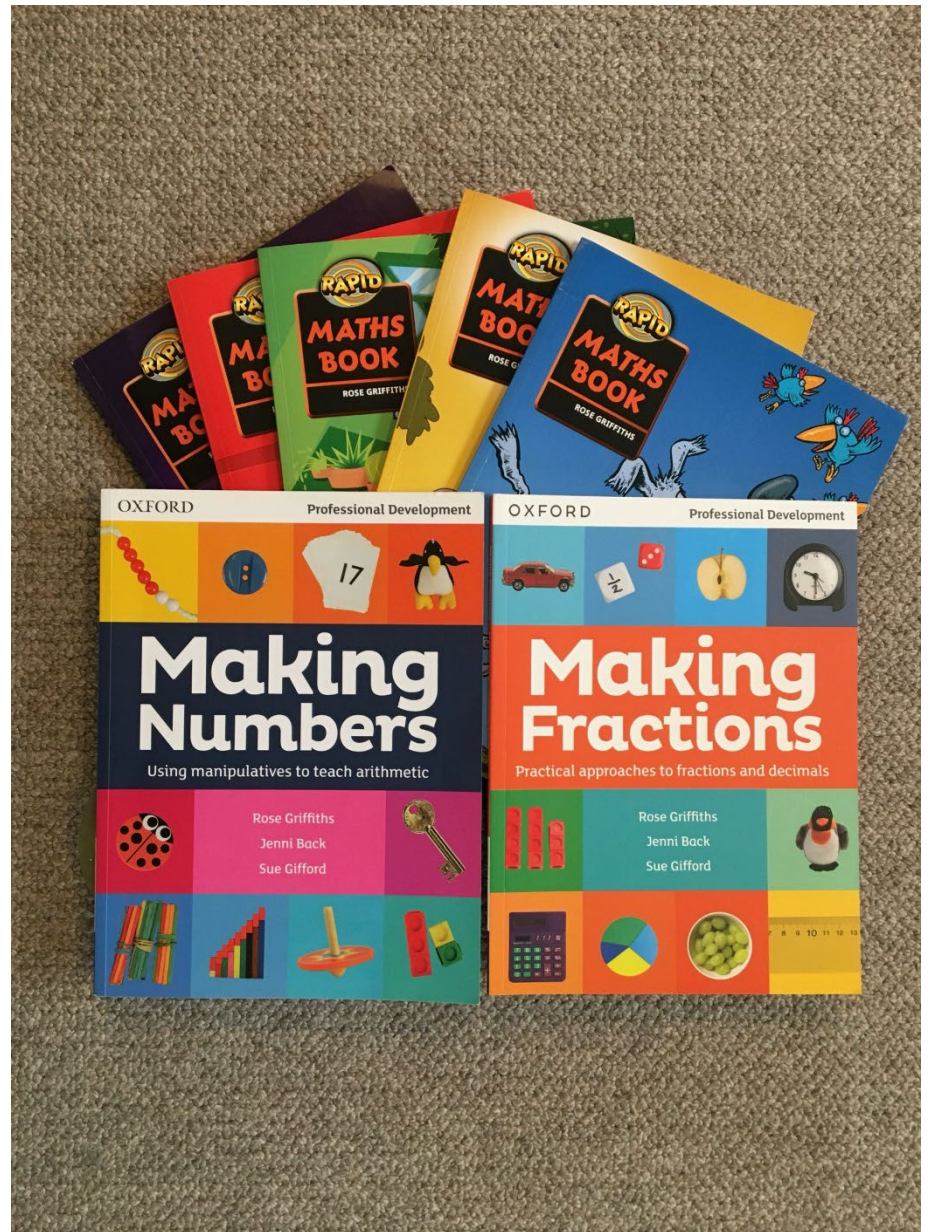
Rapid Maths (Pearson)

Making Numbers (OUP)

Free animations and short films: Register for OxfordOwl on Teachers' section, then click on 'Mathematics' then 'Making Numbers.'

Letterbox Club

See the BookTrust website.



References

Ginsburg, H. (1997) *Entering the child's mind: the clinical interview in psychological research and practice*. Cambridge: Cambridge University Press.

Kilpatrick, J., Swafford, J. and Findell, B. (2001) *Adding it up: helping children learn mathematics*. Washington: National Academy Press.