

Mathematics at home and at school for looked-after children: the example of Ronan, aged eight

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In several countries, there is concern about the low levels of educational attainment achieved by many children in public care. This paper outlines some of the reasons why looked after children's average attainment in mathematics is poor. Using the case of Ronan, aged 8, I examine the experience that this child's schools offered him in mathematics, as he moved from a school designated 'satisfactory' to one acclaimed as 'outstanding'. Whilst his experience in most areas of school life improved, his mathematics lessons became less effective. I explore the mathematics he did at home with his foster carers, and note that there was little co-ordination between school and family in mathematics.

Keywords: children in care; low attainment; classroom organisation; home-school links.

Introduction

Children in public care (also referred to as 'looked after children') are a tiny minority of the school population: about 0.6% in the UK (Cairns and Stanway, 2013). Most will have experienced family breakdown, neglect, abuse or trauma, and significant loss. Once in care, a high proportion suffers from instability, for example because of frequent changes of care placement. These experiences adversely affect many children's achievement in school (Jackson and Sachdev, 2001). This is illustrated by children's results in public examinations and in national assessments: for example, in Key Stage 2 National Curriculum assessments at age 11 for children in England in 2010, 79% of *all* children reached the 'target' of level 4 or above; 64% of children eligible for free school meals (a recognised indicator of poverty) reached that level; but only 44% of looked after children attained level 4 or above (DfE, 2010; ONS, 2011).

A report from the Social Exclusion Unit (2003) summarised issues that affect looked after children, in addition to the socio-economic factors that contribute to low attainment for many children from similar backgrounds to those who come into care. As well as identifying instability and time out of school as particular problems, the report noted a lack of sufficient remedial help for children having difficulties; that foster carers were not expected or equipped to provide support or encouragement at home; and that looked after children needed more help with emotional, mental and physical health and well-being.

The more hierarchical aspects of mathematics (such as number) are likely to be particularly susceptible to gaps in schooling, caused by moving school, exclusion or absence (all of which are more common for looked after children). The effects of trauma and loss (including bereavement) may include loss of concentration, poor memory, depression and anxiety (Worden, 1996), with consequent effects on the child's ability to learn. Additionally, attachment disorders (Howe, 2006) are common

amongst looked after children, resulting in children having difficulty in forming positive relationships with other children, teachers and their foster carers.

Once in care, many authors (for example, Davies and Ward, 2012) have pointed out that looked after children need support to compensate for past disadvantages. At present, there are considerable differences in outcomes for children in different local authorities, and between children in the same local authority: Brodie (2010) in her review of research and practice aiming to improve educational outcomes for looked after children, noted the need for further detailed study in this area.

Methodology

This paper uses data on one child from a larger study, where I undertook case studies of five looked after children aged 7 to 11, each of whom had been identified as being the lowest-attaining pupil in their class. I aimed to examine the ways in which different elements of the children's experience of learning mathematics fitted together, and to explore ways of working with them that might improve their situation (reported elsewhere). My fieldwork covered a period of about twelve months, including the second half of one school year and the first half of the following year, as this would commonly provide a picture of the child working with two different teachers.

I used assessments of the children's work in number; clinical interviews with the children (Ginsburg, 1997); interviews with class teachers, teaching assistants, head teachers, and social work staff; an examination of the children's written and drawn work in the classroom; and interviews with foster carers. Common themes were identified and explored within the analysis across the five case studies.

My study concentrated on number (and specifically on counting, addition, subtraction and place value) as being an aspect of mathematics seen as important by teachers, children and parents or carers. It is also an area where the issue of hierarchy is important, as children need to understand earlier concepts before they can move on successfully (Denvir and Brown, 1986).

Findings and discussion

Ronan was aged 8 and in Year 3 at the beginning of the study. He had been placed with experienced foster carers a year before, along with his siblings. This was initially a temporary placement, but the foster carers had applied to adopt the children, and were waiting for a court hearing. Ronan was attending Brookhouse Primary when I first met him, close to his birth mother's former home, which meant he had a daily taxi journey of about 25 minutes each way to school from his foster carers' home. His foster carers were keen for him to move to their local school, Cranfield Primary, as soon as possible, but this was not arranged until Ronan had been with them for a year.

The two schools that Ronan attended in Year 3 and Year 4 were very different. Here is the summary information from the Ofsted (Office for Standards in Education, Children's Services and Skills) website:

Brookhouse Primary: for ages 3 to 11, 440 pupils on roll; 38% on Free School Meals (FSM). Last three Ofsted reports to 2011: all 'Satisfactory' (a designation now referred to as 'requires improvement').

Cranfield Primary: for ages 4 to 10, 430 pupils on roll; 13% on FSM (i.e. less than the national average). Last three Ofsted reports to 2011: 'Good', 'Outstanding' and 'Outstanding'.

Ronan in Year 3 at Brookhouse Primary with his teacher, Claire Berry

I interviewed Claire in the Summer Term, when she had had Ronan in her class for almost the whole school year. She had been teaching for about three years, and said she enjoyed being at Brookhouse. She taught her class of 30 children as a mixed ability class with five groups based on attainment. Ronan was in the 'bottom group'. There was one boy in the class who was autistic, and he had full-time one-to-one support from a teaching assistant (TA); Ronan and one other boy sat with them. This was also the arrangement for literacy lessons each day, and for reading support. Consequently, Claire tried to provide Ronan with other company for the rest of the day. However, she said that although they were happy to sit with him, other children did complain that he copied their work. Claire said, "I do give him opportunities to say, 'I can't do this, I need help', that he normally takes up.", but Ronan still copied frequently and without trying to hide the fact, "He's not sly about it at all!"

Claire talked knowledgeably about Ronan's work in mathematics, giving details about particular things he could do. His work did not follow the same plans as the rest of the class, because Claire felt that was too difficult for him. His targets were to be able to add two single-digit numbers, and to use a number line; she was also concentrating on helping him to avoid writing numerals in reverse. Claire set the work for Ronan to do each lesson and marked his exercise book. She had tried to encourage him to use counters and cubes for counting, and to draw, but he did not seem to want to do this.

Claire had set homework for Ronan in the previous school term, for example to practise writing his numbers correctly, but it had not been completed, so she no longer set any. She said she was surprised, as she felt the foster carer was very conscientious, but she had not contacted the foster mother, as she thought the school's SENCO (Special Educational Needs Co-ordinator) was in touch with her, and she did not want to complicate matters.

Claire spoke throughout about Ronan with obvious affection and interest, and she had made special arrangements to help him feel settled in her class (for example, by letting him keep his new bag under her chair, until he felt confident about hanging it on a peg like everyone else). Her assessment of his attainment matched the view I had gained through my clinical interviews, and the work she had provided for him seemed to be at an appropriate level. Claire was concerned that Ronan spent too little time working, too much energy on avoiding engagement with his work, and his pace was slow, but she was not sure how to tackle this within the whole class, because he was so far behind everyone else.

Ronan and mathematics at home: the view of his foster mother, Debbie

I interviewed Debbie a few weeks after Ronan had started at his new school, Cranfield. Her view of what the previous school, Brookhouse, was able to offer Ronan was expressed in generous terms, as she said she thought that his new school was able to pay him more attention because they had fewer children with difficulties. Debbie felt that at Brookhouse, Ronan sat with other boys who were naughty, "so he didn't do an awful lot of work". She also said that he had not had homework at Brookhouse; she thought perhaps the teacher did not set it for the lowest attaining children. Debbie commented on the long taxi journey to Ronan's previous school, saying that actually the children were too tired by the time they got home to do any homework.

The transition to the new school, Cranfield, had been managed very carefully, organised by the foster carers with the school, and using several visits to help the children feel comfortable with the move (including during the school summer holiday, when Ronan had met the SENCO each time to borrow games and books). Once the new term started, there was still close contact between school and family; the SENCO frequently came out to talk to Debbie at the end of the day. Ronan was in a special group with the SENCO for reading, and Debbie was spending five minutes a day with Ronan, practising spellings set by the school. However, Debbie said the school did not feel he needed extra help in mathematics, outside normal lessons, “because he’s on the low table over maths, and they’ve got a sort of helper for the table. So he’s getting his boost in the class... He’s managing, he’s coping.”

Debbie and her husband John both helped Ronan with homework when it was set, but they had different experiences as to how willing Ronan was to co-operate. With John, if Ronan said he could not do something, then John would explain but then give up. Debbie felt she put more pressure on Ronan to try, and he did do more:

[I thought], this must have been exactly the same at Brookhouse. He could do them, he was capable of a lot more than he gave... [From John] it was all. ‘OK then, if you can’t do it, you can’t.’ But I’m a little bit more ‘You *will* do it, I *know* you can do it. You’re going to sit and do it! And I suppose I shouldn’t have done, but [I’d say] ‘If you’re going to muck about here then you’re not going to the park’ and he done it, no problem.

Debbie described herself as “never a great achiever [at school]. I never passed my eleven-plus. But [maths] wasn’t anything that I ever dreaded.” Even though Debbie had not been provided with mathematics homework for Ronan, she engaged in quite extensive mathematical activity with him, largely in playful and informal contexts. She commented that Ronan had especially enjoyed using a calculator:

He loved it. He was so proud because he worked out for himself he could check his sums. Before, I don’t think he connected: like two plus two – he wouldn’t have realised you could put it in and get the answer to come up. Absolutely loved it.

Debbie played games with Ronan (including Ludo and card games), and practised counting with him by asking him to fetch small numbers of household items (for example, pegs or cutlery), and she encouraged him to count with his three-year old sister, ostensibly to teach her to count. When the family went out in the car at weekends, Debbie would ask Ronan to read the numbers on road signs; at home, they sat together, practising writing numbers, as his numbers, “used to be constantly upside down, back to front, and they’re not now.”

Ronan’s foster mother was knowledgeable about what he could do, and what he needed to learn, and she seemed inventive and thoughtful about the methods she could use. For example, she said she had previously given the children a 50p coin for their pocket money each week, but had realised that it was better to give them five 10p pieces, so that they had to count them to check they had the right amount. She was also helping Ronan to learn to recognise different coins.

Debbie felt that the change of school had changed Ronan’s opinion of himself, including about his appearance, “He’s checking his hair. His pride in himself has changed”. She did not mention the biggest change of all – that during the summer holiday, the children had been told they would be staying with Debbie and John, and would be adopted. The next time I met Ronan, this was the first thing he mentioned; the permanency of the placement was very important in making him less anxious.

Ronan in Year 4 at Cranfield Primary with his teaching assistant, Alanna Coates

Ronan's new school had two parallel classes in each year group, and the children in those two classes were separated into two sets for mathematics, depending on their previous attainment. Ronan was in the 'bottom' set; since his class teacher took the 'top' set, he had a different teacher for mathematics. The bottom set was further grouped according to attainment, and Ronan was in the 'bottom' group, with three other children. As his foster mother had told me, there was a teaching assistant who would normally work with this group, in the same classroom as the rest of the class and the teacher. However, because Ronan had seemed to have difficulty in settling down to work in this class, from September to January he had largely been taken out of the class by the TA, Alanna Coates – sometimes with the other three children, and sometimes on his own.

I approached both Ronan's class teacher and his mathematics teacher to find out more about his work in mathematics, but they both felt that Alanna knew most about his work, so I should interview her, which I did in February. Alanna said the group was spending more time in the classroom now, but she still took Ronan out:

He's still quite a live wire. He wants to be the centre of attention and he would talk for England if he could, so keeping him on track can be tricky at times if he's in one of those moods. He'd like to go to the toilet regularly if it gets him out [of class].

Alanna described several other 'diversionary tactics' that Ronan used; in common with other low-attaining children in my study, he had a wide repertoire of techniques to avoid engaging with his lessons (Griffiths, 2013).

The work for the 'bottom' group was set by the teacher, but Alanna would often change what Ronan did, because she felt he needed easier work, or to provide variety. She used worksheets that she had photocopied from books in the school, items downloaded from the internet, and problems and examples of her own. She provided Ronan with counters, cubes and base ten equipment, but he did not use them.

Alanna showed me Ronan's exercise book, and we talked through the pages. From my interviews with him, I knew he could not yet reliably add two single digit numbers within ten, so I was surprised at the range of topics attempted in his book: there was some work on counting and simple addition, but also work using numbers up to a thousand, on decimals, and on finding equivalent fractions. There was a new topic each day. Alanna did not know how far Ronan could count successfully, but said she did think he had an understanding of 'what is less and what is more'. However, the one worksheet he had completed on this showed a lack of understanding, as although the three questions marked as being 'completed with adult help' were correct, the next three were all incorrect. There was little evidence that Ronan had completed any piece of work during the previous six months successfully on his own.

Alanna said that the children in her bottom group were not given homework. Ronan had not engaged with his class teacher or his mathematics teacher during the year, and the TA had effectively been given sole charge of his work in mathematics. It did not match his level of attainment, and was sometimes marked as correct when it was actually wrong. In many cases, these pages had "Well done, Ronan!" written at the bottom, because Alanna was trying to be encouraging. Alanna had said that she thought he was beginning to 'catch up', but I could not see any evidence that this was the case.

Key issues from Ronan's case

Ronan's chief preoccupation in mathematics was to 'survive' each lesson, using a self-confessed mixture of copying and guessing to complete a minimal amount of work, alongside avoidance tactics such as wandering, trying to strike up conversations on other topics, or otherwise 'opting out' of the lesson (Houssart, 2004). At Brookhouse, his class teacher had recognised this, and although she had not yet found a way of overcoming Ronan's reluctance to engage in arithmetic, Claire was persistent in encouraging him to ask her for help, with tasks that were at a suitable level of difficulty for him. Since she taught Ronan all day, she was sometimes able to provide extra help with counting and number at times outside of mathematics lessons (including at break and lunchtimes).

Ronan's foster mother, Debbie, was able to work with Ronan individually at home. She had a growing emotional bond with him, and had realised that she could insist on his completing a piece of work. She also recognised and enjoyed Ronan's pleasure when he discovered something for himself (for example, when he was adding with a calculator). Debbie was keen to work alongside both schools, and it was unfortunate that she did not have the opportunity to talk to Claire at Brookhouse about the activities she was trying at home. The school's decision to channel all communication through the SENCO was understandable, with the aim of simplifying Debbie's task of keeping in touch, but it did not give an opportunity to pay closer attention to Ronan's mathematics.

At Cranfield, too, the major responsibility for day-to-day communication from the school to the foster carers was undertaken by the SENCO. She knew a great deal about Ronan's progress in reading, but not about his work in mathematics – other than the reassuring comments from the TA. In effect, Ronan's work in mathematics at Cranfield had been delegated twice. His class teacher did not teach him mathematics at all; she did not make any additional opportunities during the day to give him extra help. The teacher of the 'bottom' set had effectively delegated the entire teaching of Ronan to the TA, who had no previous experience of working with a child with Ronan's difficulties in mathematics. This had resulted in inappropriate, dull and sometimes confusing or mathematically incorrect work being provided.

Although Ronan was receiving one-to-one support, it was not effective because the TA was not sufficiently skilled. As Blatchford, Russell and Webster (2012) describe, Ronan was separated from the teacher and the curriculum of the mainstream mathematics class. The time that Ronan spent on mathematics was also less at Cranfield than at Brookhouse, with no supplementary time outside of lessons, and with time spent on searching for a place to work on some of the occasions when Ronan was with the TA.

Both his teacher, Claire, and his TA, Alanna, at some point talked about Ronan's *ability* rather than his *attainment*. The distinction is arguably particularly important for looked after children, who have had disrupted, distressing and traumatic lives; their level of attainment is likely to have been depressed by the times when their education was interrupted or affected by their experiences. It was not something I was able to explore with individual adults across my larger study with all five children, but I suspected that some adults felt that 'ability' is fixed and innate, and they were already convinced that the child they were working with was always going to work more slowly than others. This reduced their expectations of the child.

Ruthven (1987) concluded that 'ability stereotyping' was common amongst teachers of mathematics, and the view that pupils' cognitive capability was fixed was

in evidence even amongst teachers who favoured 'mixed ability' teaching. Research in the last decade has further challenged this view, and indicates that cognitive capability can be enhanced (Goswami and Bryant, 2010), but for many teachers, their belief may be that their difficulty in teaching a child is due to the child's lack of ability, rather than due to their own lack of success in finding appropriate methods to promote the child's learning. As to how to change this belief, Ruthven suggested:

The development of a pedagogy which improves the quality of information about individual pupils, which makes more effective use of this information to remediate learning difficulties and to select appropriate learning experiences, and which reduces inappropriately differential treatment, enabling pupils to learn more successfully, is likely, in itself, to discourage stereotyped perceptions and expectations of pupils. (Ruthven, 1987: 252)

The child's own belief in their potential is often affected by their teacher's view, and the status of the groups in which they are placed (Boaler, 2009). Persuading a child that they *can* be successful, when the child has a long history of failure and avoidance, is not an easy task – it does require persistence, and time with a good teacher.

Conclusion

Looked after children are a small but very vulnerable group of pupils, and many teachers and other adults working with them will not have experience of the level and types of difficulty that the children may present. Certainly, as O'Neill, Guenette and Kitchenham (2010) discuss, a better understanding of the effects of trauma and attachment disruption would be helpful.

Additionally, many teachers would benefit from time to work with a child individually, so that they can gain a better picture of the child's understanding in mathematics (as well as being able to build a better relationship with the child). As Claire commented, she would also have welcomed more expert advice on methods that might be useful with Ronan. It was not clear within her school or local authority that such advice was available.

Ronan's foster carer was not unusual in her interest in his schoolwork, and in her willingness to support him herself. However, Debbie did provide an unusually wide range of activity for Ronan, all embedded in family life. There is a great deal that schools could learn from families about children's interests and activity outside school, and having school and home work together more closely would obviously benefit the child.

Both schools were rightly concerned to improve Ronan's literacy skills, but neither seemed to provide a similar focus on his mathematics. It seemed possible that this was partly linked with the role of the SENCO, as someone in both schools who taught reading but not mathematics.

A recent inquiry by the APPG (All Party Parliamentary Group) for looked after children and care leavers into the educational achievement of children in care (2012) noted the importance of identifying children's needs early, and providing support as soon as possible and for as long as necessary. There is still a need for further support for teachers to improve their skills and understanding of how best to provide the help that is needed – and this may be as much the case in an 'outstanding' school as in one that is in more challenging circumstances.

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