Coaching: What do primary teachers perceive as the effective elements of a specialist-coaching approach when developing their classroom practice in mathematics?

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This paper reports on a small-scale study, based in a primary school in south-east England, that sought to provide insight into specialist coaching as a model for teacher professional learning by researching its effectiveness in a sustained mathematics development project. The project took the form of regular specialist-coaching sessions for every teacher combined with whole-school training, both of which were delivered by the consultant who later became the researcher and author of this paper. The principal driver for the improvement of teaching and learning was the outcome of an Ofsted inspection, with the school being given 'Notice to Improve'. Informed by the research literature on the specialist-coaching approach, coaching as a model of Continuing Professional Development, primary teachers' attitudes towards and views of mathematics and Professional Learning Communities, a case-study approach, focused on three teachers was adopted and semi-structured interviews used to collect data along with documentary evidence from the Ofsted reports. The picture that emerged is complex. The analysis resulted in a set of guidelines for the specialist coach and for schools. The possible potential of the approach and its subsequent ability to support teacher professional learning in the twenty-first century became apparent.

Keywords: coaching, professional development, primary teachers

Introduction

As a result of the larger-than–average primary school being placed in the 'Notice to Improve' category by Ofsted in June 2009, the Head Teacher brought in the author of this paper as an experienced external mathematics consultant and specialist coach; a fellow professional with the knowledge and expertise in mathematics that was relevant to the goals of his professional learners (Cordingley, 2005). The consultant was in school one day a week, over a two-year period, delivering knowledge-focussed, whole-group training sessions for teachers, teaching assistants and governors plus regular one-to-one and one-to-two, hour-long specialist-coaching sessions with the teachers developing the mathematics provision in their classrooms. This combination of support provided the teachers with access to the relevant expertise, opportunities to learn new approaches and to process new information in the context of their own classrooms (Timperley, 2007). The consultant encouraged a connectionist orientation towards mathematics learning, taken to mean a belief that students become numerate through purposeful, interpersonal activity based on interactions with others. Also that their misunderstandings need to be recognised, made explicit and worked on (Askew, Brown, Rhodes, Johnson and Wiliam, 1997).

The school's Ofsted-given goal was to achieve high-quality learning and teaching in mathematics in all classrooms. All staff became part of a Professional

Learning Community where this was the shared, high-stake goal. Timperley (2007) highlights the value of shared goals in supporting teacher development.

The study came about as a result of a casual comment made by a teacher:

> I don't know how you do it but I come to each session with you determined not to take on anything new or change my classroom ideas – no way. Yet I come out of every session with ideas that I am keen to go away and try, that I feel I can manage and most of all I feel excited about!

The school was re-inspected by Ofsted in November 2011 and found to be providing a higher and acceptable standard of education.

Methodology

Since the intention was to seek to understand individual teachers' views of the specialist coaching, a case-study approach was used. Time dictated a sample size of three, chosen to give a spread of length of time in the profession, responsibilities and year group taught. None were mathematics specialists. A further intention was to look for common themes that emerged so semi-structured interviews were used to support this, although the size of sample limited the validity of the themed interview analysis. The school's Ofsted reports over the period of the project offered documentary evidence. These provided a source of corroboration for the teachers' subjective views and a strategy for triangulation of the qualitative data, suggested by Thomas (2009) as being an appropriate form of triangulation for a case study with qualitative data. The Ofsted reports also helped to guard against the potential pitfall of the researcher's picture of a particular slice of reality being biased or distorted since it relies exclusively on one method of data collection (Cohen & Manion, 2011). However, significant bias was present as the researcher was also the consultant and this could influence the interviewee's responses to questions (Kvale, 2007).

Findings

The Ofsted report in November 2011 recorded that significant efforts had been made to successfully reverse a trend of underachievement and that there was secure evidence of improved provision, leading to improved outcomes for students. The chief inspector gave great credit to all who worked in and supported the school to secure the improvements. The Ofsted findings were based on twenty one lesson observations, meetings with staff, the Local Authority, governors and students plus the findings from analysing attainment data, curriculum files, monitoring records and strategic planning documentation.

Teacher one, Camilla, was in her third year of teaching. For her, one of the benefits of the specialist-coaching approach was that it catered specifically to her way of teaching and to her class. She felt that the coaching helped her grow as a teacher because she had an active role in developing the ideas. If the idea did not work Camilla felt she would keep trying until it did as it was her idea and that inspired her to make it work. This contrasted with her experience prior to this project, when she had been part of whole-school teacher development sessions focussed on developing the mathematics learning in the classroom where she would feel uncertain about whether ideas would work in her classroom. This meant she would try them without, "fully putting everything into it". However when she was in control of an idea, Camilla was determined to make it work. She felt she knew exactly what she was doing in the lesson because she had been engaged in the thought process behind it.

Being in control was important to Camilla. She described herself as a control freak. It is possible, therefore, that the specialist-coaching approach gave her a sense of safety to develop her practice. In her interview, Camilla said that mathematics was not her strongest area. She preferred English and the humanities. As she was more confident with those she felt able to be creative with the way that she taught these subjects. For mathematics, in her first year, she would stick rigidly to the given textbook. Then she felt that she knew what she was teaching and the students were getting what they needed. Camilla's view of specialist coaching was that she was not told exactly what to do, but given an idea to work on. This enabled her to be creative and make ideas her own. In doing this, she discovered that mathematics teaching was less scary than she thought, with more options and the possibility of being creative. Making links to her English planning frame of mind had been helpful for her. She now felt confident that she could "do it".

Teacher two, Katharine, was in her tenth year of teaching, Key Stage 2 English Co-ordinator and Year 5/6 team leader. Camilla was a member of that team. Katharine felt that she had changed her own teaching style, although she felt it was, "not completely there yet". She felt she had moved from being the 'oracle' where the students expected her to know all the answers to a position where, "she was a human being as well" and the class felt able to discover together. The students had just about got the idea that she was learning as well. To encourage this, Katharine had shared how she had failed her forces science assessment on her teaching practice. This had surprised the students and Katharine felt this had challenged their view of her as the 'oracle'.

As a team leader, Katharine no longer wanted to mentor and 'tell'. She recounted how she had had a lot of trouble communicating her mentoring ideas clearly to members of her team so that they could apply them in the classroom in exactly the way she intended. Katharine now saw mentoring as a passive process where, "getting better" was like taking medicine, "you just take the medicine don't you, the whole bottle". She now preferred her team to come up with ideas themselves. Then they knew exactly what each idea looked like and could refine them. Katharine found this way of working took more time, yet it was more effective in the long run.

Katharine had noticed a greater degree of inquisitiveness amongst team members and increased openness. Team members were willing to try ideas out in the classroom, accepting that they would not always work. The team had developed a lot of trust in each other and felt they could take risks knowing there would be, "somebody there to pick me up". They developed trust in Katharine as team leader and held the view, "I don't know where I'm going, but I trust you so I'll follow".

Teacher three, Susan, had over twenty-five years of experience in the classroom, was the Early Years and Key Stage 1 team leader plus Key Stage 1 English Co-ordinator. Susan spoke about how the Ofsted categorisation was inclined to make her feel 'rubbish'. She had noticed that the specialist coach spoke in positive terms, not dwelling on things that had gone wrong. This made her feel, "much better about things". Susan remarked on how the specialist-coaching process was good on manageable next steps.

In terms of developing Susan's own classroom practice, it was very important to her to link possible new developments with her current practice, albeit practice that she did not use on a regular basis. For example, when the Head Teacher said, 'A lot of this will be going on in pockets in the school', Susan recognised the practice as being in her repertoire and one that had a positive impact in terms of student engagement. This encouraged her to develop the highlighted practice further in her classroom.

Susan developed her staff-training style to match the positive one used by the coach. She knew colleagues liked to be affirmed in what they were doing, believing the key to getting them to engage and change what they did was to present the change as, "just a bit extra".

Theme analysis

Askew and Brown (2001) highlight the value of teachers having time to reflect with another who is more expert. For Susan, over time, the effect of gaining confidence in the skills of the specialist coach was that she felt able to relax into the process, knowing that it would be useful. Katharine needed time to fully understand the specialist-coaching approach in order to change her classroom orientation; an example of a teacher changing a habit as well as gaining new knowledge, thought to be central to effective professional development by Wiliam (2009).

The power of the specialist-coaching approach to impact beyond the focus of the sessions was a significant theme that emerged, termed the 'ripple' effect. This was not present in the literature review. For example, Katharine's team started to use a coaching approach in their classrooms. Camilla internalised the process and sought to carry on after the project. Katharine started to adopt a more connectionist orientation to mathematics in her classroom, modelled for her through the specialist-coaching approach. Allen (2010) suggests that this move is essential if teachers are to develop high-quality learning and teaching in their classrooms. These examples of the 'ripple' effect suggest that the specialist-coaching approach could have a three-fold purpose: to deliver professional learning, to model effective student learning through its parallels with classroom practice, and to model an effective way of learning mathematics through its parallels with the connectionist orientation.

The question arises as to whether the specialist coach does actually 'lead' teachers. In aiming to embed a connectionist orientation to mathematics, along with key ideas from the training, the ideas offered in the specialist coaching will naturally reflect these. This suggests that the coach was passing on knowledge about effective mathematics' classrooms within an approach that enabled teachers to explore and generate ideas themselves. There is an interesting tension here with Tolhurst's (2009) view that coaching is not about passing on knowledge. It is possible that specialist coaching could be seen as a form of mentoring that uses a coaching approach, rather than a form of coaching as defined by Cordingley (2005). If this is the case, then Camilla's case study supports the Ofsted (2003) finding that mentors taking a coaching approach can be valuable to inexperienced teachers.

None of the teachers were mathematics specialists. Camilla's interview revealed that she was one of the primary teachers with anxiety around mathematics. Prior to the project, she would stick rigidly to the textbook. After the project she felt confident to teach mathematics more creatively. It would seem that her ability to develop the mathematics had been aided by the support offered by the approach for the affective domain, asserted by Nunes and Bryant (1996) to be key to any mathematical development. It may also have been helped by the sustained nature of the project, found by Askew et al (1997) to be a successful way to change teachers' views of the subject, while also kindling their enthusiasm for mathematics.

It is likely that the Year 5/6 team's Professional Learning Community affected the benefit each individual in it received from the specialist coaching. For example, Camilla spoke about how she felt able to take risks with her classroom practice and Katharine commented that each member of the team felt able to take risks as they

knew someone was there "to pick them up" if needed. This suggests that Camilla's response to the approach had been affected by being in Katherine's team.

Implications and conclusion

Guidelines for the specialist coach at a personal-practice level emerge. These highlight the importance of ensuring the teachers' emotional needs are clearly addressed by endeavouring to create a safe, positive learning environment that supports risk-taking. Interviews showed that the way to create a safe environment varied from teacher to teacher. The personalisation of ideas is key to build on the teacher's knowledge of their students and classroom experience. It is important that the teachers have ownership of ideas to increase their motivation to engage with change, and to support each teacher to devise small, manageable steps to implement in the classroom, to maximise the chance of successful session outcomes.

Guidelines for the specialist coach at a school level that emerge are to aim to ensure that the whole school has a shared vision for any project and the values underpinning it. In particular, if specialist-coaching is to be seen as form of mentoring, then the knowledge that the coach is seeking to pass on through it needs to be made explicit to schools and must be in line with their needs. The school needs to have a commitment to develop a whole-school Professional Learning Community that supports the specialist-coaching approach and to ensure that all teachers are involved in the specialist coaching through the provision of safeguarded, sustained time.

The case studies suggest that the specialist-coaching approach is flexible enough to offer development opportunities to all teachers at differing stages in their career. It is also able to support teachers in understanding the connectionist orientation to mathematics and transferring it to their classrooms. As the understanding of learning changes through the emergence of neuroscience research and developments in technology, we need a professional development model that supports teacher enquiry rather than relies on "hand-me-down wisdom". These case studies suggest that the specialist-coaching approach could be such a model.

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