

Action Research Title: Using assessment to promote learning in mathematics: embedding guided group work practice to create opportunities to probe children's understanding and take their learning forward. By Helen Ashe

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The aspects of the theme we were aiming to pursue within the network (NCETM)

I chose this strand as I was aiming to embed guided group work as an integral part of our practice at. A key recommendation of the Williams Review (2008), guided group work is a teaching strategy that is informed by and creates opportunities for assessment; providing opportunities to probe children's understanding and take their learning forward. The guided group approach affords teachers unique opportunities to give feedback to children on the focus of their learning and progress made. This strategy also allows teachers to develop and encourage mathematical dialogue and language in a focused and supportive setting.

Through a series of collaborative lesson studies, our network members worked in year group pairs to plan, teach and review the effects of their guided group sessions in maths. The aim was to develop shared techniques which would strengthen learning and progress for the children across the school, whilst also developing subject and pedagogical knowledge through detailed analysis, reflection and network-wide sharing of information and ideas. Whilst developing Assessment for Learning strategies, the project also aimed to provide insight into the effects of particular teaching strategies, enhancing our ability to provide quality first teaching in maths with the aim of improving across the whole school the percentage of children working at age appropriate levels.

What the members of the network learned about the theme

The key evaluations from the series of guided group lesson studies undertaken were as follows:

- Working in a guided group work setting can be an important tool for developing children's ability to articulate and discuss their methods and encourage their willingness to talk about why they find things easy or difficult.
- The sessions highlighted the importance of teachers employing probing questioning to stimulate mathematical thinking.
- The study highlighted for staff the importance of thinking carefully about the mathematical vocabulary they used to avoid misconceptions occurring.
- The guided group setting allowed teachers to give an immediate response and direct feedback to any difficulties raised.

- Working with a guided group allowed clarification of teacher assessment by providing close observation of individual children. Teachers felt they had the time to really focus on each child individually to assess and address their learning needs.
- Opportunities were provided for a range of methods and strategies to be trialled by the children in a secure and supportive setting, encouraging risk taking and developing a range of skills.
- Staff felt they had developed a deeper mathematical knowledge and understanding across the range of different aspects of the curriculum studied.
- The sessions provided teachers with opportunities to reflect in greater detail on their own practice, and evaluate where small but important changes made a difference; details that could be easily overlooked in a whole class session.
- During the guided group sessions, staff were able to identify gaps in resources and or scaffolding which could then be transferred and adapted to improve the quality of first teaching next time.
- The need for flexible groupings within the classroom was clearly evidenced and reinforced.
- For more able children, this strategy can be used to *deepen* their understanding of mathematical concepts rather than simply 'stretching' them in terms of the objectives they are working towards beyond that of the rest of the class.
- Working with a smaller group enables the further development of self and peer assessment techniques.

The impact of this teacher development on learners

- Teachers reported an increased focus on questioning within their practice but with awareness of how the phrasing can be seen to be leading; children not being 'pulled' into learning but discovering their own way.
- Raised confidence in a small group setting has been noticed when children are discussing a chosen strategy – particularly for those who find it hard to explain how they worked something out or why they chose a particular method.
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- Teachers are better able to identify the nub of a barrier to learning for those who were struggling with a concept and then apply this to the whole group as a way of ensuring a secure understanding for everyone.
- Alternative practical and visual models are being used to provide effective scaffolding to develop the children's learning.
- Within the guided group setting, children are afforded the opportunity to unpick the steps they need to take to be successful and identify their common mistakes.
- Quality 'teacher time' in smaller, focused groupings is provided allowing for productive and in-depth dialogue with the children.
- Feedback from AfL strategies can be directly addressed in the focussed groups as there is time to talk to each child about their learning and what they found difficult.
- During the time a teacher is working exclusively with a guided group, children in the rest of the class are, out of necessity, now beginning to learn to work more independently.

How working as a network promoted teacher learning

All staff reported that they felt that working in a partnership to carry out lesson studies was a supportive and useful way of working. It afforded them the opportunity to work collaboratively, share ideas and positively feedback to one another in a positive. Teachers had the opportunity to share planning and jointly observe children to identify learning. They also felt that having the opportunity to observe one another's practice was reassuring; knowing that their views and teaching methodology were shared with other colleagues. Indeed, the time and space to evaluate learning and to gather information was key to the refining of the plans for further teaching; being able to come to a shared understanding what has worked well and why.

The structure of the project allowed for freedom of independent study and enabled staff to address their own learning needs but also provided opportunities for the sharing of what worked well in order to develop the whole teaching community. Feeding back to the whole school on a wider level and the sharing of the outcomes of the paired lesson studies was found to be helpful and encouraging; allowing staff to confirm their own ideas whilst also providing new ways of working.

For myself as a relatively newly appointed subject co-ordinator, the project presented me with the opportunity to fully engage with the staff for the first time as a subject leader. The experience has increased my own confidence in planning and leading whole school

initiatives. This project has provided me with the opportunity to lead professional learning through children's learning and I believe that, as a result, the project has wide-ranging and long-term implications for CPD within St Mary's School.

Indeed, I strongly feel that conceptions of CPD have now been actively and comprehensively re-addressed. The nature of the learning-focused activity undertaken by staff had a direct relationship with what individuals were doing in their own classrooms; both enabling and encouraging teachers to be reflective whilst simultaneously focusing on their contribution to children's learning and attainment. This process has resulted in staff sustaining CPD over a period of time in order to embed their learning in classroom practice.

Raising standards in maths is a key area for development on our current SIP and this project served to heighten the profile of teaching and learning in numeracy across the whole school. The type of activity undertaken provided scope for the MKN participants to relate the focus of their own development within the wider context of the school's priorities. The regular meetings also provided both myself and the rest of the staff with opportunities to hold frequent professional dialogue regarding the teaching of maths within the school.

What the members of the network intend to do next

- Ensure that at least one weekly session of guided group work becomes a regular but flexible aspect of planning.
- Develop and broaden the focus of sessions so that all children can access this kind of quality teacher time more regularly; generating opportunities to challenge children's thinking and assumptions about mathematical concepts.
- To use guided group work as a pre-teaching tool to prepare children for new areas of learning.
- To use guided group work as a way of extending more able children and not simply supporting those who lack understanding in a particular area.
- To develop a wider range of practical and ICT-based resources to support learning, and to help children to use them correctly.

Guidance for other teacher networks that wish to develop this particular theme

- Establish clear AFL strategies beforehand, such as self-assessment or traffic lights, and use them as a tool to identify children who would benefit from a guided group approach.
- During guided sessions try to mix observation with direct engagement through questioning in order to assess the progress children are making.

- Where possible link the work in the session to ongoing work in class so that the children are given the opportunity see how they can use and apply their new skills and therefore gain confidence in their regular lessons.
- Ensure thorough planning of all guided group activity to avoid the sessions simply being extra support within normal activities.
- Encourage all children to be independent learners i.e. 123 before me, to enable you to work with a group successfully.