

Activating pupils as learning resources in maths

Background

Self-regulated learning and how to implement a culture of self-regulated learning in the classroom is an area of current research interest, with the Education Endowment Fund (EEF) giving seven recommendations around metacognition and self-regulated learning.

In addition, Nuttall (2007) notes that learners need several interactions with content in order for it to be processed in working memory and then into long term memory, with supported peer interaction having a role to play in this.

Rosenshine (2012) talks about the importance of transitioning from guided practice to independent practice, summarised by Sherrington (2019) as the 'I do, we do, you do' approach.

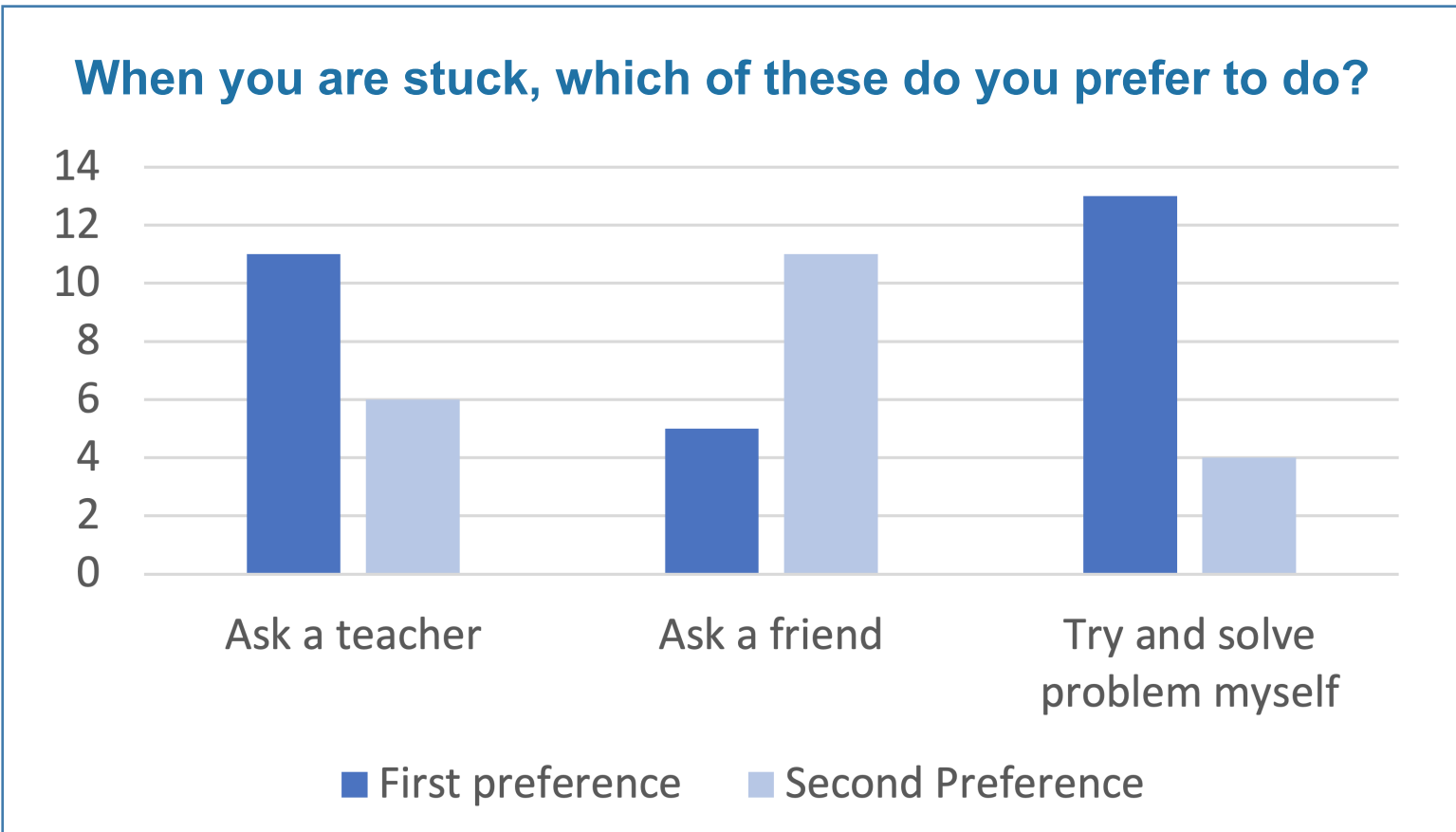
Aims

It was this research, along with a point made during a Wipro session around how important it can be to 'motivate students to be active partners in their own learning and to activate pupils as learning resources for each other' that encouraged me to look at this approach as a way to support pupils in the context of a mixed year group class (Y2/3), particularly within maths lessons.

My aim was to give the children the tools and knowledge to better support themselves, freeing me as resource to support children who need extra help, but would also enable children to retain knowledge more effectively through taking ownership of their learning.

Step 1: Pupil voice

An important aspect to my project was to ask the children about their maths lessons and strategies they use. The children completed a questionnaire looking at levels of enjoyment and confidence in maths, as well as resources and strategies. When later observing children, I was particularly interested in those children who had stated they were less confident in maths.



When solving problems, do you use any of these strategies to help? (children could select more than 1 option)	
Talking through with friend	13
Using whiteboard	14
Using maths resources (dienes, numicon etc)	14
None	3

The majority of children said they preferred to try to solve problems themselves, with 'Asking the teacher' also a popular first preference.

However, a lot of children chose 'Ask a friend' as their second preference. 13 children selected 'Talking with a friend' as an approach to solving problems, a strategy commonly selected together with other strategies.

Questionnaire responses indicated that the children are willing to work with their peers to solve problems. The next step was to guide the children to be effective learning resources for each other.

Step 2: Actions and observations

To help the children to take more responsibility for their learning, I created a maths helpdesk, allowing children to access a variety of maths resources as and when they needed, whereas previously resources would have been given out by staff.

I regularly modelled using these resources and selected one of the children as a maths ambassador who would help demonstrate to pupils how the resources could be used. I then observed how the children were using the resources and how this impacted on their learning.

Observation 1  
Lesson: multiplication

I had shown how to work out a multiplication answer using multilink cubes. During the independent task, I observed a child go and get cubes from the maths table to answer a question. When I praised this strategy, more children went to the table to try the same.

Observation 2  
Lesson: division by sharing

One child was struggling to answer a division problem. His partner tipped out some pencils and counted out the correct number. Together they shared out the pencils and solved the problem.

Observation 3  
Lesson: two times table

I modelled answering a question using the numicon. In the independent task many children collected some numicon from the maths help desk to help them. One of the less confident children used the numicon to help them work through the questions.



Findings and next steps

Modelling the help desk was important. It was not initially introduced to the children, consequently, it remained unused. Once I began to demonstrate how to use the resources from the table in my lessons, the children started to also access the resources. By praising early adopters, the other children soon started to follow.

Seeing less confident children using the resources, rather than asking for support, was particularly positive. It was also interesting to see children applying strategies using other resources (sharing out pencils).

This project is still in its early stages: as the culture of self regulated learning builds in the classroom, my aim is that the children will have a range of strategies they can draw on. The helpdesk is there to support them with new concepts and through the discussions the children have with each other, these concepts should become more further embedded in their long term memories.

References

Education Endowment Foundation – *Metacognition and Self Regulated Learning*. Retrieved 23rd Feb 2023 from <https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/metacognition-and-self-regulation>

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