

My Shanghai Teacher Exchange 2017 - Peter Lewis-Cole

I was fortunate enough to be part of the Shanghai Exchange program this year and, having just arrived back, the whole experience has given me a lot of food for thought. It was an absolute pleasure and honour to be invited into the classrooms of the Chinese teachers and to have the opportunity to discuss and evaluate their lessons with them. Rich conversations about the mathematical content became a routine part of our day and provided us with the opportunity to discuss, in detail, their approaches, pedagogy and core principles for teaching mathematics.

There was a lot of thinking and pondering that happened during the two weeks in Shanghai and below are some of the key ideas that have resonated with me and points that I kept revisiting during my time there.



Precision in vocabulary (including conclusions)

Vocabulary is a key feature of Chinese lessons. Teachers spend a good proportion of the lesson ensuring that their students are introduced to and use the correct mathematical vocabulary appropriate to the lesson content. They provide the children with carefully crafted 'stem' sentences which empower the children with the ability to communicate mathematically and with increased clarity and precision. Stem sentences are repeated regularly throughout the lesson and become the 'shared language' that expresses their mathematical learning. These stem sentences introduce the students to the key features/rules of the mathematics being

taught and are introduced at specific points throughout the lesson to optimise the learning. The shared language becomes the generalised feature of the mathematics and students explore this through examples and non-examples to ensure that they understand when the generalised feature is evident and when it isn't. Non-examples are deliberately introduced to check and consolidate understanding. Similarly, conclusions are drawn about the learning throughout the lesson. These conclusions also identify the key feature of the mathematics and are introduced throughout a lesson to summarise what the students have already discovered. As a result of these strategies, students are able to talk about the mathematics in detail and demonstrate the depth of their understanding.

Small steps

I thought I had my small step planning pretty much sorted in my own teaching – until I began experiencing Chinese lessons in Shanghai. The lessons I observed really did take small steps throughout, designed to guide the students precisely through the content and make deliberate links between new and prior learning. Learning pace is high because the exploration of each step is detailed and deep, but no steps/connections are missed as the lesson progresses. Learning is broken down into key components (some of which is a review of prior learning) which build incrementally to ensure that the final skill is accessible to all and used successfully by all. The teacher has a key role in this to ensure that attention is paid to how each small step is connected and how they build gradually onto each other to reach the final outcome.

Teacher research

This was one of the main recurring features of conversation with the Chinese teachers. Teacher research is such a key feature of their teaching and is something that teachers engage in very regularly. I saw this in a couple of different forms. The first was 'Public lessons'. These are lessons organised by Districts and are open to all teachers to attend. Teacher from all grades visit these sessions and

make notes on the learning that they have seen. It is such a part of the educational culture that the Chinese teachers spoke very positively about how these lessons supported their own continual development and gave them the opportunity to continuously develop their own practice. The public lessons are followed by a 'Teacher research group' meeting, in which the teachers talk at great length about the learning that occurred in the lesson and make suggestions about how this might be altered in future lessons.



Constantly focusing on their 'craft' ensures that they are always developing and striving for the best outcomes for each and every student. Speaking to the Principals of the schools I visited, it was clear that they viewed this as the most beneficial way to be continually developing practice. The second form I witnessed was that of department meetings. Very regularly (at least once a week), teachers would meet in grade teams or as a whole department to discuss some of the lessons that had been taught throughout the week. During this meeting teachers will take it in turns to work through the chronology of a lesson highlighting the successful parts of the lesson and where students might have struggled. Other teachers then had the opportunity to ask questions about the lesson to further support consideration around the rational and outcomes. It is clear that, by discussing lesson in such a way, teachers are continuously looking at, often subtle, ways they could change their lesson to better support learning. It is pertinent to note that these research meetings are always purely focused on learning – both successful and not.

Cognitive load/Working memory

I don't (and won't) pretend to know a lot of cognitive load but, with the basic understanding that I have, it became very evident (after seeing only a few lessons) that the Chinese teachers are very skilled at ensuring that their students attend to the aspects of mathematics essential for every individual lesson. They do this by ensuring that their mathematic lessons are not cluttered with unnecessary information or contexts. They explore the mathematic content in great detail, ensuring that their students explore the content with depth, but 'clear the path' by concentrating on the key mathematical focus and not wavering from it. In its simplistic form, this was established by introducing the mathematical learning in a purposeful real-life context but continued through the lesson by extracting the maths needed to solve the problem and working on this skill in isolation. After deep exploration of the mathematical skill, the children would then be asked to look back at the problem and see how the mathematical skill supports the solving of the problem. Each lesson was crafted in this way and allowed all students to see the purpose of the mathematical skills in everyday life; develop procedural fluency by understanding how the mathematical skill works; and intelligently practising the skill before going back to seeing how this works within the original context. Lesson craft ensured that children attended to exactly what they needed to and progressively develop their understanding of how the skill can be applied/used to solve problems.

Now onto the task of thinking about how these key features can further support teaching and learning in my school. Exciting times ahead.



Please visit: www.behindmastery.com to read Peter's full Blog entitled 'My Shanghai Experience'.

