

“Connecting CPD to Classroom Practice”

Tell me about how you became science subject leader.

I qualified as a teacher in 2016 and when I finished my NQT year there was no one else to take on the role so I ended up as science subject leader. Honestly, I was not enthusiastic about science, especially in high school, so it was very daunting. I knew there were gaps in teaching and learning so I was going to have to be dedicated. I love a challenge, so I jumped straight in.

I did not know what I was doing; I'd only taught a few science lessons as an NQT, so I felt ill-prepared to be science lead. I did a book scrutiny, a pupil voice questionnaire and a SWOT analysis of science teaching and it became apparent there was too much writing. Science lessons weren't rich enough, there were too few practical activities and the children weren't challenged, so I wanted to address those issues.

One of the pupil survey questions was, 'What is a scientist?' At the start the children said they make potions and do experiments. Our children don't have a wide range of life experiences or career aspirations, so it's my responsibility to enrich their learning and broaden their aspirations.

Thomas Guskey (2000) contends there are five levels against which professional development can be evaluated.

1. Participants' reactions
2. Participants' learning
3. Organisation support and change
4. Participants' use of new knowledge and skills
5. Student learning outcomes

Where there is evidence of any of these 5 levels in Jen's story, the text has been coloured to match the text colour above.

Guskey, T. (2000) Evaluating Professional Development

In conversation
with Jen Smith
of Etruscan
Primary School



You knew what you wanted to change but how did you go about it?

I couldn't have done it without the brilliant Becki who has been a massive support in her role as Science Influencer. We created an action plan based on the areas of science I wanted to develop. She advised that the PSQM would be perfect for our school, 'because you'll be doing this anyway', but cautioned that, 'you can't address everything all in one week'. She was right; the PSQM has given me a great structure and changes take more than a week!

I attended the TAPS course and the Thinking, Doing, Talking Science training. I emailed the headteacher straight away saying this is fantastic. Let's have a go because we need to know if it's successful for us. I love learning from training courses, implementing changes and seeing the effects spread throughout the school. I'm so grateful to my colleagues. Their support and teamwork have enabled me to carry out my role effectively.

Now my thinking is deeper. My slogan is 'So what?'. Why are we teaching that? What is the impact going to be? Why am I doing this monitoring activity? So, for example, I focused mainly on pupil surveys because children will say something that I might not get from a book. They will say what they're confident in or what they do and don't like to do.

**“Enable through challenge, Engage with depth, Empower independence”
- A legacy approach in Stoke-on-Trent, SATC 2021**

A model of teacher change
Find the evidence match in Jen's narrative

So how is science teaching and learning looking now?

Enthusiasm for science has increased beyond all recognition. You can see it in the children's work and their faces. Teachers are saying we've just had a brilliant science lesson and the children loved it. Now the planning is more focused, so the children's learning is more focused. Teachers are using videos; they're using the Explorify website. The quality of learning is improving rapidly and children use much richer vocabulary.

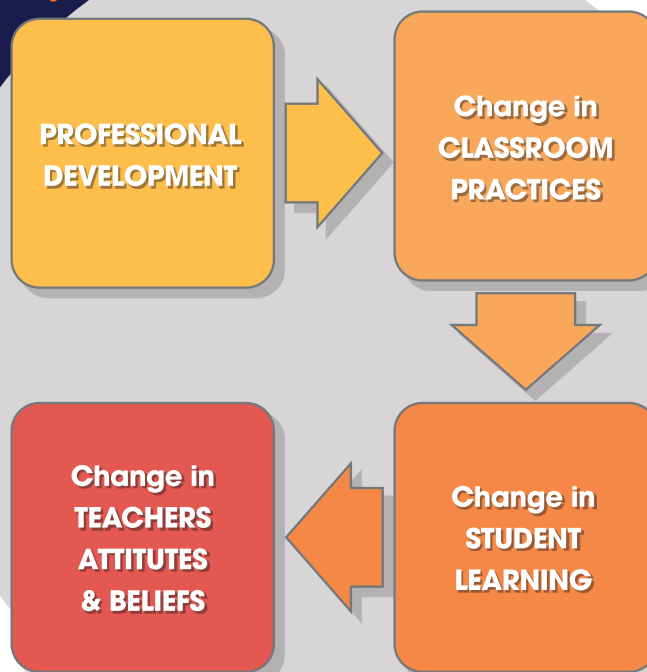
Teachers are also more confident and comfortable with assessment. We assess during child-led science investigations and the children absolutely love it. We see the ideas they come up with, what they do, and what they say.

It has also impacted my teaching in other subjects. We aim to build their vocabulary of the many EAL children in school. In maths we do practical, concrete activities and discuss our learning which reflects my science training. With every subject, rather than panicking about the books, I think 'So what?'. Why am I doing this? What do I want the children to learn?

Floor books seem to answer some of your questions. Why is that?

A floor book is simply a reflection of their learning, including photographs, evidence of practical activities, comments or discussion. Children or teachers can write on post-it notes any lightbulb moments and that's evidence enough. Rather than writing up a whole experiment, two sentences from children who have reflected on their learning is so much better.

We've trialed them in years two and four with huge success and believe they enrich the learning because we're not focusing on work in books and how we prove to Ofsted what the children have done. Discussion and vocabulary have developed significantly. Previously pupils found scientific words challenging, but now they write less they're using scientific vocabulary in a more structured and effective way. What's more, lower ability and SEN children come out of their shells because it's talk-based and doing-based. Now they are so much more confident, and they are some of my highest achievers in science. Teachers in other year groups are excited that from September they will also be using floor books to show off the children's learning.



And in the future?

I was concerned when I discovered how young pupils are when they make up their minds whether science is 'for them'. It is very difficult to change their opinions in secondary school. I realise how influential primary science teaching is and I want to develop community links like science fairs, working with other schools, and having science visitors to enrich experiences so science capital grows. Because of the Covid situation that's for the future. But for now, we start the lesson with, 'today we're gardeners, or zoologists or chemists', so we're opening their minds and they see how science is relevant to their lives.

And now you are going to be a Science Influencer just like Becki.

I'm excited about facilitating training in other schools and sharing floor books. It will be awesome to get everyone involved, share my enthusiasm and organise science fairs or competitions with other schools. I'd love to support schools like mine with high levels of EAL and vulnerable children, making small changes that have a huge impact on children's learning.

