

Barnacre Road Primary School

Introduction

Children of all abilities at Barnacre Road Primary School regularly punch the air when they switch onto Learning by Questions (LbQ) technology.

Their teachers are equally impressed by the transformative qualities LbQ brings to the classroom.

Maths lessons start from the get-go as children switch on their iPads, without always having the clamour for exercise books, pencils and rubbers.

One of the most impressive features of the LbQ system is the automatic feedback that pupils receive each time they answer a question. This means that even without further teacher intervention, pupils learn from feedback that is automatically delivered by the technology.

“The children come into the class and – bang! – they go straight to it. The joy on their faces when they get the instant feedback is fantastic,” says deputy head Fiona Heppenstall.

“As a teacher you can say: ‘Yes, well done. You got it right!’ and that’s a marvellous feeling. They’re six feet tall. They cheer themselves. They get a real buzz, a sense of fulfilment and reward.”

Fiona’s view is underlined by a straw poll that reflected a 100 per cent approval rate by the whole of the school’s Year 5 class – with not one hand raised when asked if there were any downsides to LbQ.

Even though it is located in the picturesque Ribble Valley town of Longridge, Barnacre Road Primary must contend with many of the issues faced by urban schools.

“Longridge has a leafy green image,” says Fiona, who joined the school in 2001 as a Year 6 teacher and became deputy head a few years later. “In fact, over the last few years we’ve seen a decline in the socioeconomic background of our children. Almost a quarter are on Pupil Premium, which for the area, is quite surprising. So, there’s a lot of deprivation under the affluent veneer of the Ribble Valley.”

Maths lead and Year 6 teacher Billy Walton agrees: “We have a lot of children living in difficult family circumstances. In every class, we’ve got a significant percentage of parents who have either separated or are maybe not working – unemployment’s quite a problem and housing is an issue too.

“This means we’ve got quite a spread, and although we have children who live in nice houses, we’ve also got many children whose life experience is very different.”

Barnacre Road has nine teaching staff, including Simon Wallis, the head teacher, and 200 pupils from reception to Year 6.

LbQ progress report

The LbQ programme was introduced to 60 children in Years 5 and 6 in September 2017 and rolled out to a further 120 pupils in Years 1- 4 in February 2018.

Fiona explains: “The younger children aren’t using it to the same extent yet, because the resources aren’t quite ready in some year groups and the teachers haven’t built it into their planning yet.

“We’ve got a meeting planned, when we will talk through the teething issues teachers have come across. They’ll then spend the rest of the summer term getting to grips with LbQ so that in September 2018 they’ll be in a position where they can build it into their lessons and it will be an integral part of what they do.”

The LbQ software at Barnacre Road is mainly in maths, although there are some English question sets and this is being further developed by the LbQ team.

Benefits for students

Pupils at Barnacre Road gain many learning advantages as a result of taking part in the LbQ programme.

It involves students using tablets in the classroom that operate in real-time, sending feedback to the teacher as the children answer each question. This approach immediately tells the teacher which students aren’t coping and which are performing strongly. As a result, everyone can work through the questions at their own pace. More able children can be pushed, while less able ones are prompted by the intuitive software. If the teacher’s intervention is necessary, he or she can act on the spot. The system also removes some of the lesson resource preparation and, crucially, the time-consuming task of marking.

“The instant feedback is the best feature as far as I’m concerned,” says Fiona. “The children answer a question and straightaway they know whether they’ve got it right or wrong. There’s no waiting for marking and feedback from us.

“Also, I think the idea that they can work at their own speed is a huge advantage. The slower children who need a bit more time to process are not being put off by somebody else putting their hand up to give the answer. What you *don’t* get is the child who needs a bit more time switching off and thinking, ‘Oh, well, someone else has already worked it out, so I’ll not bother.’”

Billy, who has taught at Barnacre Road for five years, adds: “The biggest thing for me is that it really reduces the time you spend ‘off task’. Simon, our head teacher, came in to watch when we were teaching, and he picked up on this as well. The

children are always 'on task' because in a traditional maths lesson, if someone doesn't understand a question, you have to spend a few minutes going through it with them. While this is happening, the other kids are twiddling their thumbs and getting bored, which can lead to behaviour issues.

"With LbQ, the ones who find it easier can be challenged further because of the adaptable question sets, while other children can work at their own slower pace."

Fiona believes LbQ also has a positive effect on the self-worth of children of lower ability.

"You've got that flexibility of being able to set different groups off on different tasks," she explains. "The children know they're on different tasks, but they're so intent on what they're doing that they're not paying attention to what others are up to. So no one is showing off about their knowledge, or on the other hand, being intimidated and feeling bad about themselves because they aren't among the high fliers."

Billy points out that it is LbQ's unique control matrix that enables pupils of varying abilities to work alongside one another so productively.

"They could be on the same question set, but much further down, or they could be on completely different sets. But they're concentrating on the green mark at the top of the screen that tells them they have got the question right. That motivation really helps them, regardless of ability," says Billy.

LbQ also features intuitive prompting functionality, so that each time a child gets a question wrong, the software will suggest a different way of approaching it.

Fiona says: "To start with, when it gave them a prompt, the children would skip over that question to punch in another answer, rather than taking the feedback on board. They weren't used to receiving the prompt as written feedback from the software. Now, though, my kids are saying, 'Oh, it said to do this'. They're much better than they used to be, although it's still something we need to work on with them."

Benefits for teachers

The pedagogic approach of teachers at schools like Barnacre Road makes LbQ a highly effective tool because it represents instant verification of learning.

Fiona says: "With LbQ the kids are not always recording their work in books. I know that's an issue for some schools, but we're more about the children learning and gaining a sense of self-worth and developing a willingness to give things a go. If the children can answer a question on LbQ, then we're saying, 'Yes, they can do it'. We don't need to see it written 50 times in an exercise book to prove it."

Removing the onerous need to mark piles of exercise books is another key benefit for teachers.

Billy says: “When you’re marking a set of books, you can forget who did what right at the start and you’re tired because it’s taken 30 or 40 minutes. With LbQ it’s much more visual, because the system breaks down every single question. So you can easily run through the matrix and know precisely where the kids really understood something and where they struggled. Then you can then use this information as a tool for future planning. It makes your planning and evaluation better and that makes you more effective as a teacher.”

Working with the LbQ team

Fiona and Billy agree that working with the LbQ team is a collaborative and ultimately rewarding process.

Fiona says: “We feel included in the process of developing the LbQ system, that we’re helping to shape it and evolve it. From all the research that has gone into it and the input from the different schools, it seems to me that we’re valued – that it’s all valued.”

Billy adds: “In the meetings we’ve had with the LbQ team, where we’ve given feedback, everything we’ve said has related to how they can improve it, but I wouldn’t say there’s any downside – more like ways of developing what’s already there.”

So how important could LbQ be going forward for Barnacre Road and schools generally?

“I think we will continue to use it for a long time and we’re getting more and more out of it as well,” comments Fiona. “We’re seeing different ways of using it and the kids are discovering a different type of learning. Some of the activities might only take ten or 15 minutes, but it’s great to learn things in little chunks and come back to them, which gives constant revision. The children quite like doing a question set they’ve done before. It reassures them and reinforces what they’ve learned, which is really important.”

Billy is impressed by the variety and depth of LbQ question sets.

“My class has done question sets three, or even four times and each time they can be given different questions because there could be 40 questions and those towards the end are quite in-depth. So you can pick and choose questions,” says Billy.

“Also, there are quick-fire questions, just to keep the kids ticking over. We have great fun with these. They love it when we put the times table ones on and it’s, like, who can do this the fastest? But at the end of the rapid-fire questions, there are some problem-solving ones, and the children realise they have a challenge on their hands, that it’s not just easy-peasy.”

Fiona is keen to emphasise that although LbQ can be fun for children, the system is an important learning tool that could potentially deliver enormous and positive pedagogic change.

Fiona says: “This is not just using an iPad to play with, the children are using it as modern IT equipment that’s part of their learning. They’re not just learning how to answer the questions, they’re learning the maths. Of course, they’re having fun doing it, but in our eyes, we’re doing pretty much the same thing as you would in a text book because you can do the working out on the iPads as well. It’s not just a tick-box kind of thing.”

Fiona continues: “For some questions, the children create a page of calculations where they use the write-on whiteboard on the iPad. So there’s a lot of complex working-out going on. For one question, some of my class ended up with about eight different calculations they’d had to solve to get to the answer. It was an algebra question – a square, square, circle, circle equals 25, but bigger numbers than that. The determination to work through that was impressive, and it was all done on the LbQ iPads.”

Fiona adds: “That level of engagement and the way they weren’t going to give up reflected real positive learning. I imagine we’ll be using LbQ in every classroom to some extent. I’m very interested in what they’re doing with the English and how that can become part of it. I don’t know if English will work as well as maths but it will be interesting to find out.”

Head teacher’s view

As a self-confessed technophobe, Barnacre Road head teacher Simon Wallis needed to be convinced of LbQ’s merits – yet he is now among its strongest advocates.

Simon comments: “From the perspective of going in as an outside pair of eyes, observing a class in operation using LbQ, it really forced upon me its power as an educational tool.

“The quality of the learning in the class was judged as ‘good to outstanding’ and part of the reason for that was the teacher could set work on the LbQ system that was challenging for all the children using it, while teaching a different concept to another group of children.

“Once that group of children were up and running, the other children using LbQ, who’d been kept challenged, could be taught themselves. So as an aid to teaching, there was no time wasted. It was absolutely fantastic.”

Another aspect of LbQ that impresses Simon is the regular repetition that enables learning to sink in. Simon also likes the way LbQ allows children to work at their own pace, while providing instant feedback to the teacher and the pupil.

Simon continues: “It has so impressed me that I feel, regardless of budget, that I want to roll this out throughout the school because I can see how it could assist all the children and all the teachers, making them better teachers, but also empowering the children.”

Simon adds: “I’m quite a technophobe – and my colleagues like to tease me about it – because I think IT can be very gimmicky, but when I saw LbQ in action, I totally understood the value of what was being done.”

Simon took time during his observation session to question children about how they found the system. Did they like using it? Was it difficult?

He says: “100 per cent said they really liked it. They found it very challenging, but they also liked the fact that it gave them time to practise and then come back to it again. They felt it was improving their confidence in maths. For me, at the end of the day, that’s what it has to be.”

Children’s perspective

Year 6 pupils Liam Walmsley, aged 11, and Sophie Barber, aged 10, are big fans of LbQ.

Sophie comments: “It really helps when you’re doing maths. It gives you tips if you get it wrong on how to work it out and try again.

Liam says: “What I like the best about LbQ is that if you’re in a group and you’re struggling on a question, you can press something and it’ll let you jot your things down, but it also helps you a lot with your knowledge. The iPad’s kind of like a teacher because, like Sophie said, it gives you tips on how to do it, but it doesn’t give you the answer.”

Sophie and Liam also like the way LbQ allows children in the same class to go at their own pace.

Sophie comments: “Someone who’s not quite as good at maths as somebody else can do their own stuff and someone who’s really good can get challenged more. They’ve got a variety of different challenges and different activities. So it can challenge some people, but then for others, it’ll be easy depending on how good you are at maths.”

The pair also like the collaborative aspect of LbQ.

Liam says: “We can get help off our classmates, from someone who’s in a higher group, so they can help us to understand it.”

Sophie and Liam, who work in different ability groups, both get involved in helping their classmates.

“It’s a really good way of working with other kids in your class,” says Liam. “You’re all sort of teaming up to make sure everyone does as well as they can.”