AQA Maths – a Pilot Teacher's Experience
Tracey Helliwell, Kingsfield School

Hundreds of teachers and thousands of students have been helping us shape our GCSE and Functional Maths qualifications for 2010 by taking part in the pilot qualifications in the **14–19 Curriculum Pathways Project in Maths**.

Tracy Helliwell is Head of Maths at Kingsfield School, South Gloucestershire, a specialist mathematics and computing college, with over 1000 students and 10 teachers in the maths department.

All GCSE students have taken part in AQA's pilot GCSE Maths, pilot Functional Maths, and pilot GCSE Additional Maths.

AQA: Do you think that the experience of teachers on the pilots is valuable to other teachers?

TH: Definitely. Any contact between teachers is absolutely valuable.

AQA: What aspects of the pilot have you found the most welcome?

TH: The way they've grouped the number with the data handling, and the algebra with the shape and space, just feels right for the students. That works quite well.

We've enjoyed Additional Maths GCSE the most. The questioning is more interesting. You've got to solve the problem without being told, "use this skill to solve this". It's more difficult because they've really got to think.

AQA: Do you think students find that more interesting?

TH: Yes, definitely, because they are allowed to investigate their own ideas, come up with their own questions and solve their own lines of enquiry, rather than do 50 questions on the same thing.

AQA: Do you think there is anything wrong with the current Maths GCSEs?

TH: It's a little bit too skills or content-focused rather than on the process skills... there's so much content and not a huge amount of time to really get into the depths of it. So it's more difficult to plan your lessons in Key stage 4 creatively. We're focusing on exams, which I guess is a symptom of how we examine our students. I think students quite enjoy maths at Key stage 3, then when they get to Key stage 4 it's quite a lot more intensive. I think teachers can train students to pass exams successfully without actually teaching them to become a mathematician.

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Supporting achievement

AQA: Will the new GCSE Maths have much impact on your school?

TH: We'll look at our scheme of work and think about whether our tasks are functional in any way and different ways we can teach things. We've always taught through investigations here so it's not such a big change.

I think it's a bigger change for teachers in other schools who'll have to start thinking about extended tasks that they can do with their students. In terms of planning their lessons and making sure that it's not just all skills driven, or topic driven; it's actually getting them to think mathematically and to think functionally. It will force teachers – not just here, but everywhere – to evaluate the way they teach things, and that'll be a good thing. When I go to Heads of Maths meetings, I think that they are all very aware that they need to make some quite big changes.

For example, we do equable shapes, so we begin quite simply with rectangles, but this task can go on for eight weeks with a good class. There will be a need for students to learn trigonometry when working with triangles, so it won't be forced on them. They'll want to learn how to solve equations because there'll be a time in that series of lessons when algebra is really useful. There's actually a need for algebra, rather than "here's algebra, this is how you do it". There'll be Pythagoras and drawing graphs within that one extended task, so they learn those things to solve the problem, rather than "here's the triangle, find the sides; now do it 10 more times".

AQA: So they learn why they need to know, as well as how to do it?

TH: Yes. That doesn't mean that doing 10 questions is not appropriate ever, because of course it is, but at the right time, during that extended task. You wouldn't just want to do extended tasks, then sit them in front of an exam and expect them to pass. You'd want to do a bit of practice as well.

AQA: Do you find that sort of teaching more challenging or more interesting?

TH: More interesting. That's what we try and train our kids from year 7 upwards to be able to do; to think, and think properly, and be able to attack any problem, not just recognise it as one that they've done. The students find that interesting because they are allowed to investigate their own ideas and come up with their own questions and solve their own line of enquiry.

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AQA: How do students of different abilities respond to the Functional Skills element of GCSE Maths?

TH: I'm glad Functional Skills is going to be integrated into the main assessments. I'm interested to see what it will look like in 2010! All abilities respond better to anything that we do in a more open way, because as long as it's accessible, the students can do something at their own level on that problem. So I think it gives them more a sense of success.

Some of the students in year 10 gave their views on the pilot maths courses they've been following.

Rory: *I suppose you could say it's more practical.*

Emma: *Yeah, like when we did compound interest in banking and insurance, and looking at what banks give you the best interest and how much that would actually work out.*

Liam: *You pay a lot more attention, because you know you're going to need it.*

Emma: *It makes you pay more attention. If it's like a scenario, you can just read through it and it's not so scary.*

Liam: *It's common sense, really.*

Emma: *It's everyday maths.*

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